ALBANIA'S NATIONAL ADAPTATION PLAN

2026-2036

GREEN CLIMATE FUND

REPUBLIKA E SHQIPËRISË
MINISTRIA E TURIZMIT DHE MJEDISIT

UNDP

Ministry of Environment of the Republic of Albania
October 2025

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Acknowledgements:
The Government of Albania wishes to express its profound appreciation to all institutions, organizations, and individuals who contributed to the preparation of the National Adaptation Plan (NAP). The development of this Plan was led by the Ministry of Environment, in close coordination with line ministries, national agencies, and local government units, whose collaboration and commitment were instrumental throughout the process.

The Government also acknowledges the active engagement of civil society organizations, community representatives, youth and women's groups, and private sector stakeholders, whose perspectives and recommendations enriched the planning process and contributed to a more inclusive and representative outcome.

The Government of Albania conveys its sincere gratitude to its development partners and international collaborators, in particular the United Nations Development Programme (UNDP) and the Green Climate Fund (GCF), for their steadfast technical and financial support in advancing national adaptation planning efforts.

Finally, appreciation is extended to all participants in the national and regional consultations whose insights, feedback, and shared experiences have been fundamental in shaping a National Adaptation Plan that reflects Albania's collective vision for a resilient, sustainable, and climate-secure future.

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List of Acronyms and Abbreviations

AEZ	Agro-Ecological Zones
AF	Adaptation Fund
AKBN	Albania National Agency for Natural Resources
AR6	Sixth Assessment Report of IPCC
ARA	Albanian Road Authority
ASPA	Albanian School of Public Administration
BPO	Business Process Outsourcing
BTR	Biennial Transparency Reports
BUR	Biannual Update Report (under UNFCCC)
CAPEX	Capital Expenditure
CASEP	Communication and Stakeholder Engagement Plan
CBA	Cost Benefit Analysis
CBO	Community-based Organizations
CBT	Climate Budget Tagging
CBR	Cost-benefit Ratio
CC	Climate Change
CCA	Climate Change Adaptation
CCAWG	Climate Change Adaptation Working Group (under IMWGCC)
CCMWG	Climate Change Mitigation Working Group (under IMWGCC)
CNA	Capacity Needs Assessment
COP	Conference of Parties (under UNFCCC)
CRA	Climate Risk Assessment
CSR	Corporate Social Responsibility
DCM	Decision of Council of Ministers
DRM	Disaster Risk Management

DRR	Disaster Risk Reduction
EIA	Environmental Impact Assessment
ETF	Enhanced Transparency Framework
EU	European Union
GAP	Gender Action Plan
GCF	Green Climate Fund
GEF	Global Environment Facility
GGA	Global Goal on Adaptation (under UNFCCC)
GHG	Greenhouse Gas
GII	Gender Inequality Index
GIZ	German Development Agency (by the German initials)
GNP	General National Spatial Plan
HDI	Human Development Index
ICT-BPO	Information and Communications Technology. 3
IGEO	Institute of Geo-sciences, Water and Environment
IMWGCC	Inter-Ministerial Working Group on Climate Change
INSTAT	Institute of Statistics
IPA III	Instrument for Pre-Accession Assistance (EU)
IPCC	Intergovernmental Panel on Climate Change
IPS	Integrated Planning System
IRM	Indicator Reference Matrix
IRS	Indicator Reference Sheet
LAP	Local Adaptation Plan
LGU	Local Government Unit
MARD	Ministry of Agriculture and Rural Development

MCA	Multi-Criteria Analysis
MDB	Multilateral Development Bank
M&E	Monitoring and Evaluation
MECI	Ministry of Economy, Culture & Innovation
MEL	Monitoring, Evaluation and Learning
MES	Ministry of Education & Sport
MFZ	Mediterranean Field Zone
MHSP	Ministry of Health and Social Protection
MHZ	Mediterranean Hilly Zone
MIE	Ministry of Infrastructure and Energy
MMZ	Mediterranean Mountainous Zone
MPMZ	Mediterranean Pre-mountainous Zone
MRV	Measurement, Reporting and Verification
MTBP	Medium-Term Budget Programme
MoE	Ministry of Environment
MoF	Ministry of Finance
MoTCS	Ministry of Tourism, Culture and Sport
MRV	Monitoring, Reporting and Verification
NANR	National Agency of Natural Resources
NAP	National Adaptation Plan
NAPA	National Agency for Protected Areas
NAS	National Adaptation Strategy
NC	National Circumstances (report under UNFCCC)
NCCS	National Climate Change Strategy

NCEA	National Civil Emergency Agency
NDC	Nationally Determined Contributions (report under UNFCCC)
ND - GAIN	University of Notre Dame- Global Adaptation Initiative
NEA	National Environment Agency
NECP	National Energy and Climate Plan
NPV	Net Present Value
NSDEI	National Strategy for Development and European Integration
NSDI	National Strategies for Development and Integration*
NSGE	National Strategy for Gender Equality
NTPA	National Territorial Planning Agency
OECD	Organization for Economic Development and Cooperation
OPEX	Operational Expenditure
RCP	Representative Concentration Pathways
SAA	Stabilization and Association Agreement (under the EU)
SDG	Sustainable Development Goal
SEIA	Socio-Economic Impact Assessments
SLR	Sea Level Rise
SSP	Shared Socio-economic Pathway
TWG	Technical Working Group
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

* NSDI I from 2007-2015, NSDI II from 2015-2020 and the new National Strategy for Development and European Integration (NSDEI) from 2022-2030.

Foreword

Sofjan Jaupaj

Minister of Environment
Republic of Albania

Climate change is one of the greatest challenges of our time, threatening ecosystems, economies, and the well-being of people across the world. Albania is not the exception. Our country is already experiencing the effects of climate change through rising average temperatures, more frequent droughts, floods, forest fires, and other extreme weather events. These impacts jeopardize our economic progress and the livelihoods of our citizens, particularly the most vulnerable communities.

Over the last decade, Albania has made significant progress in strengthening its institutional and legal framework for addressing climate change. The approval of the Law on Climate Change in 2020, the adoption of the Nationally Determined Contributions (NDCs) in 2021, and the alignment with the EU Climate Acquis have laid the foundation for a coherent and forward-looking national climate policy. Within this framework, the National Adaptation Plan (NAP) process has emerged as a central mechanism for integrating climate change adaptation into development planning, policymaking, and financial frameworks at both national and local levels.

This document represents the outcome of Albania's Second National Adaptation Process, an initiative of the Ministry of Environment (MoE), in line with the legal requirement for a four-year review of the NAP and in response to Albania's international commitments under the UNFCCC and the Paris Agreement. The process builds upon the experience of the first NAP (2015–2019). The Second NAP Strategy and Implementation Plan has been informed by reviewing the first plan, a wide range of new studies and assessments, updated national policy documents, and international best practices, all this in close collaboration with a wide array of national stakeholders.

The goal of this Second NAP is to reduce climate change-related impacts across Albania by strengthening institutional and technical capacities that enable long-term, integrated climate adaptation planning. Through comprehensive assessments of vulnerabilities and risks in five priority sectors—agriculture and forestry, tourism, energy, transport, and urban development— the NAP provides a clear roadmap for coordinated action. It is complemented by key instruments that support its implementation such as the NAP Implementation Plan, Financing Strategy, Gender Action Plan (GAP), Communication and Stakeholder Engagement Plan (CSEP), and the Monitoring, Evaluation and Learning (MEL) Framework. These components form a complete system for planning, financing, implementing, and tracking adaptation actions nationwide.

This NAP process has been highly participatory, engaging ministries, municipalities, academia, civil society, and the private sector. It has generated valuable data, strengthened institutional collaboration, and built the technical foundations for climate-resilient development. Importantly, it provides the means to transform adaptation from a policy framework into a collective, long-term national commitment.

The Government of Albania reaffirms, through this Second National Adaptation Plan, its unwavering determination to build a resilient, low-emission, and sustainable future. We recognize that adaptation is not a one-time effort but an ongoing process that requires strong institutions, reliable financing, and the involvement of all sectors of society.

I extend my sincere gratitude to all those who have contributed to this effort—the national institutions, municipalities, experts, development partners, and international organizations whose collaboration made this achievement possible. This Plan represents a renewed national commitment to resilience and sustainable development and a testament to Albania's leadership in confronting the global climate challenge.

Executive Summary

This document is the outcome of the Albanian Government's second National Adaptation Process, an initiative of the Ministry of Environment (MoE) carried out in the period 2021-2025 under the frame of the National Adaptation Plan (NAP) project, supported by UNDP and the Green Climate Fund. This second NAP is founded on the review of the first NAP, the findings of a number of specific studies and assessments, follows existing and updated national documents, and is guided by regional and international guidance and experience.

Climate change poses an unprecedented threat to the life and livelihoods of billions of people worldwide. Due to geographical location or socio-economic condition, some countries or regions are more vulnerable to the impacts of climate change than others, with 40% of humankind already living in highly climate-vulnerable areas. Albania, due to its coastal position in Southern Europe, as well as its socio-economic, institutional and regulatory circumstances, faces particularly high climate risks. It is indispensable to cope with such challenges, through reducing vulnerability and building resilience towards a changing climate. Adaptation efforts are needed to adjust systems and manage climate risks through a process of identifying, planning, developing and implementing policies, programmes and projects. Albania's 1st NAP (approved in 2019) was prepared following the UNFCCC and Paris Agreement. The Progress Report on this first NAP for the period 2019 to 2023 noted limited implementation. The main lesson learned was that most actions lacked coordination and a multi-sectoral approach to address nationwide climate vulnerabilities. This and further recommendations were taken into account in the 2nd National Adaptation Plan (NAP) process (2021-2025), through a series of assessments, studies and capacity-building programs. During the last decade, in line with UNFCCC and the EU Climate Acquis, Albania has taken a series of legal, policy and institutional steps to face the challenges of climate change. An institutional set-up is established, with the Ministry of Environment as the central ministry responsible for climate change policy, legislation, coordination and implementation at the government level, and line ministries, including MoE, being responsible for climate concerns in their own sectors. An Inter-Ministerial Working Group on Climate Change (IMWGCC) with representatives from several sectoral ministries and agencies has been established with a coordinating role in support of the MoE on climate related issues, though still has challenges in the execution of its mandate.

Climate issues are addressed in important policy documents, such as the National Strategy for Development and European Integration (NSDEI III, 2022-2030) providing directions and defining the priorities of the sustainable economic and social development of Albania on the way to its full EU membership. Other relevant national policy documents for climate change include the Strategic Document on Climate Change Mitigation

and Adaptation, the revised Nationally Determined Contributions, and the National Energy and Climate Plan of the Republic of Albania. The Law "On Climate Change" governs the legal framework around climate change, with other relevant acts the: Energy Act, Civil Protection Law, etc.

From one of the poorest countries in Europe, Albania transformed into an upper-middle-income country with a GDP of USD23 billion and GDP/capita of USD8,300 in 2023. However, climate change threatens to reverse these gains by exacerbating economic shocks, particularly for low-income households, women and other vulnerable groups of population that are less equipped to recover from extreme weather events.

The Mediterranean climate of Albania includes mild and humid winters, followed by hot and dry summers. Since 1951 average temperatures in Albania have increased, mainly in spring and summer, while annual precipitation (though with a not a very distinctive trend) decreased somewhat, mostly during winter and spring. Projections under the worst-case scenario for the year 2050, indicate that the average air temperature (Tmean) will increase from 0.9°C to 2.0°C, while precipitation will decrease further from -2.7% to -5.8% annually, and -8.1% to -17.6% in summer. Extreme precipitation events are expected to increase, causing either more localized dry periods or flooding. All future scenarios project an increase in Sea Level Rise (SLR) along the Albanian coast of up to between 20cm and 28cm in 2050, which will especially impact the Adriatic coast.

The overall goal of this 2nd NAP process is to reduce climate change related risks throughout Albania, through strengthened institutional and technical capacities that will support the mainstreaming of Climate Change Adaptation (CCA) into planning in the long-term. It covers the 10 year period 2026 – 2036 and focuses the main socio-economic sectors in Albania, which are vulnerable to climate change (NAP priority sectors): agriculture and forestry, tourism, energy, transport and urban development.

The NAP Project undertook detailed Climate Risk Assessments for the 5 identified priority sectors in Albania. The assessments show that national climate risks increase in Albania with time and the pessimism of the scenario. The urban, agriculture and tourism are the sectors with the highest risk ratings, with energy and transport having lower risk ratings (applying both to current and future risks). The main reason for this is the sensitivity of agriculture and tourism to changes in climate variables, while in the urban sector the key reason is its sensitivity to increased temperatures and heat waves, as well as the significant concentration of the urban sector on the vulnerable coast. Some localities are particularly vulnerable (e.g. low-lying coastal areas, floodplains, densely populated cities), and certain population groups are especially at risk due to their age, medical condition, dependency, location, economic situation, gender, or a combination of these factors. Inadequate environmental management, including deforestation, poor management of watersheds, and inadequate waste management, increase climate risks across sectors. Shortcomings in climate legislation, human capacities, data and equipment may further aggravate the climate risk of the country and its adaptation and disaster management efforts.

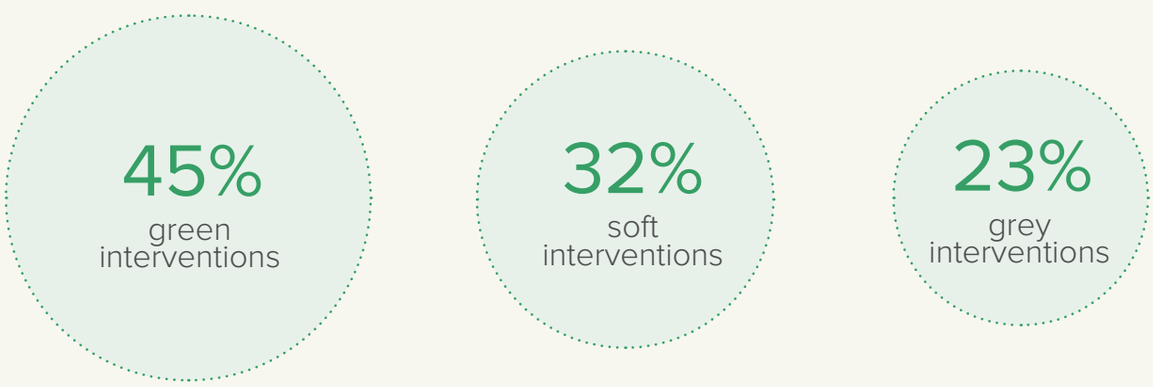
In order to adapt to the potential risks of climate change, 151 possible "Adaptation Measures" for the five priority sectors plus cross-sectoral measures were identified under the NAP process, mainstreaming also the shared components and locations of some 356 local adaptation measures in 8 selected municipalities. A further prioritization process through Multi Criteria Analysis and Cost Benefit Analysis identified 66 priority measures in the priority sectors plus cross-sectoral measures. These were subsequently organized in the NAP Implementation Plan, designed to transform sectoral adaptation priorities into concrete interventions that are technically feasible, financially viable, and socially inclusive. The Implementation Plan includes 10 cross-sectoral adaptation measures, 8 agriculture measures, 13

forestry, 11 tourism, 9 urban development, 8 energy and 7 transport adaptation measures. These 66 measures were further sub-divided in 45 “soft” (capacity building) measures; 15 nature based “green” measures; and 6 major infrastructure or “grey” measures (6). Each of these adaptation measures were broken-down into a series of between 2 and 10 specific implementation activities per measure. For implementation scheduling, these measures were divided into Short-term measures (starting between 2026 and 2028), Medium-term measures (2029-2032) and Long-term measures (2033-2036) with implementation of some measures planned to end in 2042. At the national level, the Ministry of Environment is the lead authority for the NAP implementation plan. In practice, adaptation to climate change is implemented by the relevant sectoral ministries and agencies, often in close coordination with municipal authorities and other key partners.

The implementation of 66 adaptation interventions is estimated to cost in total approximately USD9.8 billion (approximately EUR8.4 billion). Urban development has the highest estimated cost, followed by forestry and tourism has the lowest estimated cost. In terms of intervention types, the 15 Green interventions represent the highest share of the overall estimated costs (45%), then soft interventions with 32% and grey interventions with 23%. In terms of timing (start at short-, medium- or long-term), the estimated costs are almost equally distributed. Because of the phasing of the implementation through, the annualized estimated budgets are highest from 2033-2035. Total annual costs for each sector and measures are provided to support the line ministries with the planning of their Mid Term and annual budgets for adaptation. A Financing Strategy was developed for the NAP Implementation Plan that should ensure that sufficient and sustainable financial resources are mobilized and effectively allocated to implement Albania’s adaptation priorities. Although the total adaptation financing need is very large and amounts to approximately 2.7% of Albania’s 2025 GDP, this is based on a front-loaded investment profile concentrated in the early implementation years of the different measures. While substantial,

The implementation of 66 adaptation interventions total cost

USD 9.8 BILLION



this investment level is considered fiscally feasible, particularly if supported by concessional finance, phased budget allocations and full integration into national public investment frameworks. The cost of inaction would likely be higher, as severe climate damages could erase years of development progress.

The Government of Albania has earmarked a substantial sum for adaptation actions across sectors in its 2025–2027 Medium-Term Budget Program (MTBP) and national sectorial strategies, and International partners are planning to support adaptation through grants and loans. Nevertheless, this falls far short of the indicated adaptation financing needs, leaving a critical 93% overall financing gap. Significant funding will therefore have to be mobilized to support the adaptation financing needs in this NAP. This despite a range of economic and fiscal structural challenges, e.g. the high upfront cost of adaptation measures, underdeveloped capital markets, lack of risk mitigation instruments, fragmented donor landscape, minimal private sector participation and limited offer of "bankable" adaptation projects. Therefore, further strengthening of domestic contributions is essential, as well as accessing international climate finance, and mobilizing private capital. For the short-term (2026-28), mainly "soft" measures, Albania does have some resources in hand. The medium-term (2029-32) measures are critical and need substantial additional funding from planned and new projects. The long-term 2033–50 period must not only tackle the remainder of the plan by that time, but also adapt to evolving conditions.

During the NAP process, and as an integral part of its Implementation Plan, a Gender Action Plan (GAP) was developed, ensuring that women's needs and perspectives would be integrated throughout the process, recognizing that climate change impacts affect women and men differently. The objectives of the GAP were to promote gender equality and women's empowerment through gender-responsive planning, mainstreaming, implementation, and monitoring. The GAP aligns with and supports the implementation of several key national strategies and international commitments, including the National Strategy on Gender Equality (NSGE, 2021-2030), sector-specific strategies, the Paris Agreement, and the Sustainable Development Goals.

Similarly, a Communication and Stakeholder Engagement Plan (CSEP) was prepared for the NAP Implementation Plan. Through targeted and inclusive communication, the CSEP aims to transform climate adaptation from a policy framework into a movement embraced by stakeholders across all levels of society. CASEP's Strategic Goal is: "To position climate adaptation as a national priority in Albania by leveraging effective communication as a tool to engage stakeholders, foster collective action, and build long-term resilience across all sectors of society".

A NAP Monitoring, Evaluation and Learning (MEL) system was developed along the NAP process to support its implementation. It will: support transparency and accountability; ensure inclusive tracking of progress; promote cross-sectoral collaboration, coordination and knowledge sharing; enhance resource efficiency by leveraging existing data and tools; and foster learning. MoE will be the central body for Monitoring & Evaluation coordination, data oversight, and reporting to national and international entities. Line ministries and Local Government Units will provide data on adaptation measures annually while the National Environment Agency (NEA) will verify and process the reports and data.

The implementation of the MEL system for Albania's Second NAP will follow a phased approach, with the following phases: Institutional Setup; Capacity Building; Pilot Testing; Operationalization; Review and Refinement. The final phase will focus on reviewing the performance of the NAP against its results framework, conducted through a Mid-term review in 2030 and through a final evaluation on year 2036.

01

Introduction

This document is the outcome of the Albanian Government's second National Adaptation Process, an initiative of the Ministry of Environment (MoE) carried out in the period 2021-2025 under the frame of the National Adaptation Plan (NAP) project[1], in response to the legal requirement for a 4 yearly review of the NAP and international commitments. An earlier first NAP was developed in the period 2015-2019 with the support of the German Development Agency (GIZ) and the United Nations Development Programme (UNDP) and was approved as NAP Framework Document in 2019.

This second NAP Strategy and Implementation Plan is founded on the review of the first NAP, the findings of a number of specific studies and assessments carried out as part of the second NAP process, follows existing and updated national documents[2], and is informed by regional and international guidance and experience[3].

NAP Vision

The NAP is guided by a long-term Vision of *"a dynamic, secure, prosperous and sustainable Albania, anchored in Europe,"* which reflects the overarching direction set by the NSDEI. And its Adaptation Goal is to achieve *"a climate-resilient Albania adapted to climate change",* as articulated in the National Climate Change Strategy and the EU Adaptation Strategy.

NAP Objectives

Within this overaching framework, the overall goal of the current NAP is to **reduce climate change related impacts throughout Albania, through strengthened institutional and technical capacities that will support integrated Climate Change Adaptation (CCA) planning in the long-term.** This NAP process supports the integration of adaptation into national and local development strategies, sector policies and financial planning frameworks. It also serves as a central reference for coordinating and aligning adaptation planning efforts in the country and across various sectors.

Building on this goal, the NAP envisions a future in which Albania's socio-economic development is sustainable and resilient to the adverse effects of climate change.

This vision directly stems from the NAP's overarching objective and is fully aligned with Albania's broader commitments under international agreements, including the Paris Agreement, while contributing to the achievement of the Sustainable Development Goals (SDGs). To achieve these aims, the NAP focuses on several core objectives as listed below.

1. "Advancing Albania's planning for medium and long-term adaptation through the development of a National Adaptation Planning process" supported by the Green Climate Fund (GCF) and implemented by United Nations Development Programme (UNDP)
2. National Communications (NC1 – 2002, NC2- 2009, NC3- 2016, NC4-2022); the first Biannual Update Report (BURs); Nationally Determined Contributions (NDC-2021), NAP Framework Document – 2019.
3. E.g. United Nations Framework Convention on Climate Change (UNFCCC), NAP Global Network Intergovernmental Panel on Climate Change (IPCC), European Union (EU) Adaptation Strategy and Tools, and lessons learned from other countries' NAPs.

The NAP focuses on several core objectives:

1 OBJECTIVE

Mainstreaming climate adaptation into national and sectoral policies, plans, and budgets, ensuring that all development activities systematically consider climate risks and embed resilience into Albania's growth strategies.

2 OBJECTIVE

Enhancing adaptive capacity at institutional, community, and individual levels, by strengthening the ability to understand, plan for, and manage the impacts of climate change and better prepare for future challenges.

3 OBJECTIVE

Promoting sustainable development through adaptation efforts that contribute to poverty reduction, social equity, and environmental protection—ensuring that adaptation not only reduces vulnerability but also supports an inclusive and sustainable future.

4 OBJECTIVE

Facilitating access to climate finance by mobilizing national, regional, and international financial resources to support the implementation of adaptation measures and translate plans into tangible actions.

5 OBJECTIVE

Strengthening coordination and collaboration among key stakeholders—including government agencies, municipalities, the private sector, civil society, and international partners—to ensure coherence, ownership, and a unified response to climate change.

NAP Contents

To translate these objectives into action, the NAP process has undertaken a wide array of activities, including institutional and sector analyses, capacity gaps, need assessments and stocktakes, vulnerability and risk assessments for five priority sectors[4], and developed climate scenarios at national and local level, identified and prioritized adaptation options, supported data digitization, identified CCA financing options, developed curricula and tools to improve capacity for climate adaptation planning, budgeting and mainstreaming, and performed outreach and training at national level and in municipalities, among other activities.

4. Agriculture and forestry, energy, transport, urban development and tourism

This resulted in a variety of deliverables that feeded this NAP document and process.

The following chapters introduce climate change adaptation and the NAP process globally and nationally; describe the national circumstances, vulnerabilities, risks, adaptation options and assessments for Albania and its key priority sectors and move on to introduce the priority interventions at cross-sectoral and sectoral level. Moreover, the document provides an overview of key considerations necessary for its successful execution including a detail on the necessary implementation arrangements for the measures, for gender mainstreaming throughout the process and for active communication and stakeholder engagement.

All this is backed up with a Financing Strategy providing options for funding the identified needs; as well as a suitable monitoring, evaluation and learning framework to facilitate the monitoring of results. Some of these elements are expanded in dedicated NAP complementary documents: Implementation Plan for Prioritized Adaptation Actions; NAP Financing Strategy; NAP Gender Action Plan (GAP); NAP Communication and Stakeholder Engagement Plan (CSEP); NAP Monitoring, Evaluation and Learning Framework (MEL).

02

Climate change adaptation, the NAP process and achievements

2.1 Need for Adaptation

Climate change poses an unprecedented threat to the life and livelihoods of billions of people **worldwide.** It can increase the incidence of extreme weather and catastrophic events, affect air and water quality, increase the spread of certain diseases, affect coastal areas and communities, threaten the food quality and security, increase food prices, and jeopardize the existence of species, habitats and landscapes. It thereby especially affects the livelihoods, benefits and prospects of future generations for a decent and sustainable life.

Climate Change Adaptation is the process of adjusting systems and managing climate change risks through a process of identifying, planning, developing and implementing policies, programmes and projects, in order to cope with, reduce vulnerability and build resilience towards a changing climate. Due to geographical location or socio-economic condition, some countries or regions are more vulnerable to the impacts of climate change than others. Despite encouraging trends, adaptation progress made to date worldwide does not appear to be on the required scale[5]. There is an urgent need to accelerate adaptation action, with 40% of humankind already living in highly climate-vulnerable areas[6]. The world is on course to experience dangerous climate risk levels before the end of the twenty-first century. Therefore, urgent adaptation is necessary to reduce existing and future climate risks, which if left unchecked will inevitably lead to more climate-related losses and damages, estimated to have already exceeded USD500 billion over the past two decades in the 55 most climate-vulnerable economies alone[7].

Europe is experiencing more extreme heat, drought, wildfires, and flooding in recent years, and climate risks are threatening its energy and food security, ecosystems, infrastructure, water resources, financial stability and people's health. Europe's low-lying coastal regions, including many densely populated cities, face even further risks from flooding, erosion and saltwater intrusion[8]. In 2024, Europe was the fastest-warming continent in the world, with especially south-eastern parts suffering from extreme heat and drought, and the annual sea surface temperature of the Mediterranean Sea being the highest on record[9].

While climate change affects every country, **Albania**, due to its coastal position in Southern Europe, as well as its socio-economic, institutional and regulatory circumstances, faces particularly high climate risks. Albania has one of the highest levels of disaster risk and exposure among European countries, with climate events like floods, wildfires and landslides along with other natural disasters such as earthquakes having affected 95 percent of municipalities in the past two decades. The impacts of climate change in Albania are becoming more frequent and severe, with climate scenarios predicting longer, hotter, drier conditions and continuing sea level rise, affecting the country's water resources, agriculture, tourism, public health, energy sector, and coastal areas.

5. United Nations Environment Programme (2023). Adaptation Gap Report 2023: Underfinanced. Underprepared. Inadequate investment and planning on climate adaptation leaves world exposed. Nairobi
6. The Sixth Assessment Synthesis Report of the Intergovernmental Panel on Climate Change (IPCC, 2023)
7. United Nations Environment Programme (2023). Adaptation Gap Report 2023: Underfinanced. Underprepared. Inadequate investment and planning on climate adaptation leaves world exposed. Nairobi.
8. Press release of the European Environment Agency on the first European Climate Risk Assessment. Published 11 Mar 2024. This included an assessment that identified 36 major climate risks for Europe within five broad clusters: ecosystems, food, health, infrastructure, and economy and finance. https://www.eea.europa.eu/en/newsroom/news/europe-is-not-prepared-for?utm_medium=email&_hsmi=84201387&_hsenc=p2ANqtz--zS8bTN2iJ2Y1WDmIOApxA2NiBMTqcMlYqBA8R0oya5ylZm85S1ynHduz_YL9QUZZQpwFjEdqyowylptFU75f0a1ey_YeReaa3_97qFY7ZzM7Ok&utm_content=84201387&utm_source=hs_email
9. European State of the Climate 2024 (ESOTC 2024) report, released on 15 April 2025

Conservative estimates of climate related economic damages may reach 7% of GDP in the year 2050 alone.[10] These vulnerabilities, risks, and associated losses are further detailed in Chapter 4. Left unaddressed, these climate impacts will continue to undermine progress and erode the resilience of communities in Albania. Adaptation investments are therefore essential with benefits far outweighing costs. Analysis from the region shows that for each EUR invested, return values range from EUR2–10, with benefits including reduced losses, increased economic potential, and social and environmental co-benefits.[11]

2.2 NAP background and Guidance

The NAP process was initiated under the **United Nations Framework Convention on Climate Change (UNFCCC)** to address medium- and long-term climate adaptation needs. The process was further detailed in 2010 under the Cancun Adaptation Framework[12] at the 16th Conference of Parties (COP) to the UNFCCC, and its targets were refined as part of the 2015 Paris Agreement. The NAP process is intended as an iterative, country-owned planning process that allows each country to identify, address and review their evolving adaptation needs, issues, gaps, priorities, and related resource requirements within the context of national adaptation plans. It is also envisioned as an organic continuation of the formulation and implementation of countries' Nationally Determined Contributions (NDC).

The **NAP process** envisages "to fully consider climate change concerns in planning and decision-making processes", and "will develop the knowledge to support decision-making, and required capacity-building to facilitate all actions that are needed for a strategic country-owned adaptation planning process"[13].

The UNFCCC's NAP process normally works towards the following objectives[14]:

1. To reduce vulnerability to the impacts of climate change, by building adaptive capacity and resilience;
2. To facilitate the integration of climate change adaptation into relevant new and existing policies, programmes and activities, in particular development planning processes and strategies, within all relevant sectors and at different levels.

Guidance for developing and implementing the NAP process comes from the UNFCCC and others, including international organizations and donors[15]. The main initial guidance emanates from the "**Technical Guide for the National Adaptation Plan Process**"[16], that introduces the key steps and elements. The guiding principles for the development of a NAP as detailed in this Technical Guide include:

- a participatory process involving local stakeholders (communities, the private sector, non-governmental organizations, and other relevant stakeholders)
- a multidisciplinary and complementary approach, building upon relevant existing plans and programmes,
- the particular consideration of marginalized groups such as women,

10. Albania—Country Climate and Development Report. World Bank. 2024
11. Albania—Country Climate and Development Report. World Bank. 2024
12. See:https://unfccc.int/process/conferences/pastconferences/cancun-climate-change-conference-november-2010/statements-and-resources/Agreements
13. Least Developed Countries Expert Group. 2012. National Adaptation Plans. Technical guidelines for the national adaptation plan process. Bonn: UNFCCC secretariat. Bonn, Germany. December 2012
14. UNFCCC, Decision 5/CP.17, paragraph 1.
15. See also: Global Adaptation Network (https://www.unep.org/gan/); Global Centre on Adaptation (https://gca.org/) ; https://www.adaptation-undp.org/; https://climate-adapt.eea.europa.eu/; etc.
16. Least Developed Countries Expert Group. 2012. National Adaptation Plans. Technical guidelines for the national adaptation plan process. Bonn: UNFCCC secretariat. Bonn, Germany. December 2012

- harnessing sound environmental management,
- cost-effectiveness,
- gender-responsiveness in planning and implementation, and
- the flexibility of procedures based on local circumstances.

Various **other guidance materials** have been produced and used at different spatial and organizational levels, e.g. at national[17] local[18], state/provincial[19], city[20], municipality[21], coastal[22], business[23], etc.

The Paris Agreement, adopted by the Parties to the UNFCCC in 2015, reinforces the international framework for adaptation action. The Parties established "the global goal on adaptation of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change". At the UNFCCC Conference of Parties (COP-28) in Dubai in December 2023, the "Framework for the Global Goal on Adaptation (GGA)" was adopted[24], which "urges parties and invites non-party stakeholders to increase ambition and enhance adaptation action and support, in order to accelerate swift action at scale and at all levels"[25]. This Framework aims to guide the implementation of the GGA and, among other things, aims to establish multi-hazard early warning systems (by 2027), climate information services for risk reduction and systematic observation (by 2027), impact, vulnerability, and risk assessment (by 2030) and country-driven, gender-responsive, participatory, and transparent National Adaptation Plans (by 2030) in all affected countries.

By building resilience to climate change, the NAPs will **contribute to many of the Sustainable Development Goals**, outcomes of Rio +20 and the Sendai Framework for Disaster Risk Reduction 2015-2030, thereby also supporting the national socio-economic and sustainability objectives.

2.3 International NAP experience

Some 80% of the Parties (or countries) to the UNFCCC have established at least one **national adaptation plan, strategy or policy**. Most of these countries have adaptation options that respond to the assessed climate vulnerabilities and risks in priority sectors, such as agriculture, water and health[26]. Findings suggest that there is increasing awareness and understanding of climate change adaptation and its importance, but effective implementation of existing plans remains a bottleneck[27].

The **EU adopted an Adaptation Strategy** in 2021 that outlines a long-term vision for the EU to "become a climate-resilient society, fully adapted

17. E.g. EU Guidelines on Members States' adaptation strategies and plans, 2023
18. E.G. Adapting to climate change: cdp guidance for uk local authorities. 2022
19. E.G. California adaptation planning guide, 2020.
20. E.G. Climate change adaptation and resilience planning. Programme summary and guide for cities. Cdp, 2023.
21. E.G. Planning for adaptation to climate change. Guidelines for municipalities. Eu/act.
22. E.g. Adapting to Climate Change: A Planning Guide for State Coastal Managers. US Climate Resilient Toolkit.
23. E.g. Climate change: risk assessment and adaptation planning in your management system, UK Government, 2023.
24. now named the "UAE Framework for Global Climate Resilience".
25. Decision: FCCC/PA/CMA/2023/L.18. This furthermore demand countries to: "significantly reducing climate-induced water scarcity and enhancing climate resilience to water-related hazards; attaining climate-resilient food and agricultural production and supply and distribution of food; attaining resilience against climate change-related health impacts; reducing climate impacts on ecosystems and biodiversity; increasing the resilience of infrastructure and human settlements; substantially reducing the adverse effects of climate change on poverty eradication and livelihoods; and protecting cultural heritage"
26. United Nations Environment Programme (2023). Adaptation Gap Report 2023: Underfinanced. Underprepared. Inadequate investment and planning on climate adaptation leaves world exposed. Nairobi
27. United Nations Environment Programme (2023). National Adaptation Planning: Emerging Lessons Learned from UNEP Projects. Nairobi

to the unavoidable impacts of climate change by 2050"[28]. This strategy aims to reinforce the adaptive capacity within the EU and minimize vulnerability to the impacts of climate change, by: Improving knowledge of climate impacts and adaptation solutions; Stepping up adaptation planning and climate risk assessments; Accelerating adaptation action; and Strengthen climate resilience globally. Most EU countries have adaptation strategies, some in the form of NAPs, others have Strategies or Programmes, of which some are sector based[29].

2.4 Albania's NAP experience

Albania's first NAP

Climate change adaptation is of great environmental and socio-economic importance to Albania, being a country and in a region that is particularly vulnerable to climate change. Undertaking a NAP process and developing a NAP strategy and implementation plan is an international obligation for Albania under the UNFCCC, to which it has been a Party since 1994, e.g. under Article 7 of the Paris Agreement, ratified by Albania on September 21, 2016. Additionally, a four-yearly review of the NAP is a national legal obligation under the Law 'On Climate Change'[30].

It is also a required step in the frame of the country's endeavours to accede to the EU, with the EU recommending the need to advance the climate change agenda of the country, including the development of a NAP. The 2022 EU Progress Report on accession of Albania reiterated the need for effective implementation of the 1st NAP and adoption of a new national adaptation strategy and national plan.

The **1st NAP was developed in the period 2015-2019** with the support of the German Development Agency (GIZ) and the UNDP and was officially promulgated as "NAP Framework Document" in 2019[31], consisting of 6 major Areas of Intervention[32] and 16 Goals. The Progress Report on the first NAP for the period 2019 to 2023 in Albania[33] noted that out of the 118 planned adaptation measures, only 15% were completed, about 69% of all measures had some advancement and 22% were yet to be initiated. Notable successes included establishment and functioning of the Inter-Ministerial Working Group on Climate Change (IMWGCC), mainstreaming of climate change into some other strategic documents and increased awareness on climate change and the need for adaptation.

Challenges included capacity and knowledge gaps, budgetary constraints and resource limitations, and also the impact of the earthquake of November 2019 and COVID-19 pandemic that slowed implementation. The NAP (2019-2023) Progress Report also noted that available funding on adaptation relied almost exclusively on donors, in contrast to the 99.9% of the state budget for the Nationally Determined Contribution (NDC) that was committed to mitigation. The main lesson learned from implementing climate adaptation actions in Albania over the past decade was that most actions lacked coordination and a multi-sectoral approach to address nationwide climate vulnerabilities[34].

The 2023 Progress Report on the first NAP also gave some priority recommendations for the follow-up second NAP:

28. Communication from the commission to the european parliament, the council, the european economic and social committee and the committee of the regions forging a climate-resilient europe - the new EU strategy on adaptation to climate change (2021)
29. E.g. The Netherlands has a Water based Climate Adaptation Strategy
30. Adopted in 2020
31. Approved by DCM no. 466, dated 3.7.2019, as part of the "Strategic Document and National Plans for the mitigation of the greenhouse Gases and Adaptation to Climate Change'
32. Areas of Intervention: Results of Adaptation; Steering of NAP Implementation; Mainstreaming; Climate Financing; Communication and Outreach; Institutional Set-up and Capacity Development
33. NAP Framework Progress Report. Status of NAP Implementation. Prepared under UNDP NAP Project. Ministry of Environment, 2023.
34. NAP Framework Progress Report. Status of NAP Implementation. Prepared under UNDP NAP Project. Ministry of Environment, 2023.

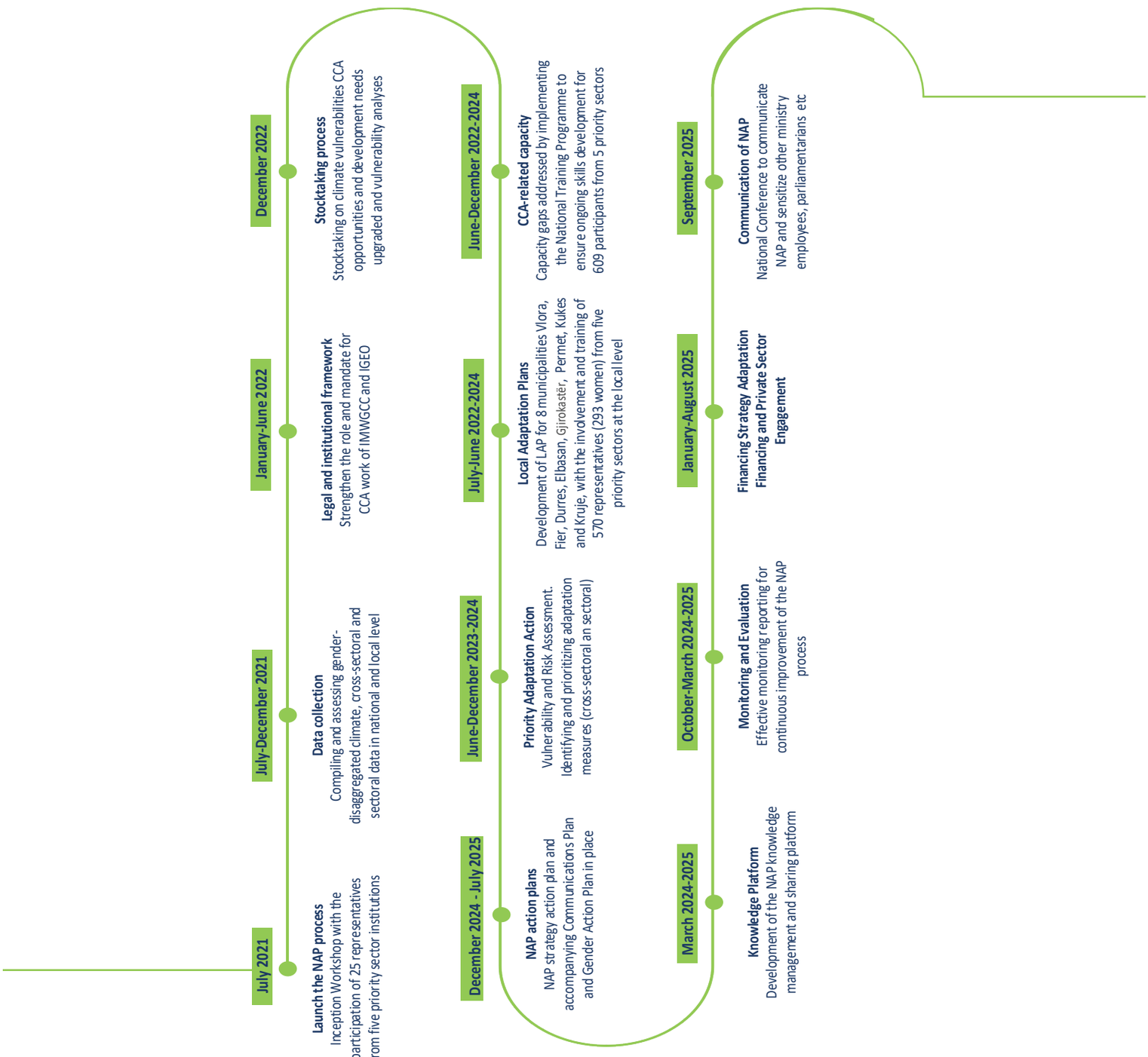
- Establish a well-structured and resourced governance and institutional strengthening for NAP implementation;
- Elaborate and implement an effective plan for financial, human, and technological resource mobilization to underpin the roll-out of the NAP;
- Develop and implement an effective and efficient monitoring and evaluation framework for the new NAP;
- Develop and execute appropriate adaptation education and communication to support NAP implementation;
- Increase support for private sector-led adaptation action.
- These recommendations have been taken into consideration in the second NAP process.

Albania's 2nd NAP

The 2nd National Adaptation Plan (NAP) drafting process in Albania (2021 – 2025) was a country-driven initiative designed to assist national institutions and eight municipalities in identifying, addressing and adapting to the challenges posed by climate change. Through a series of assessments, studies, and capacity-building programs, the process informed the development of the Second NAP which focuses on five sectors: agriculture and forestry, tourism, urban development, energy and transport. Some of the important milestones and documents produced under this NAP process were (see also the Figure 1 to the right):

- **Stocktaking report:** Starting point for the NAP, which analyzed the policy, institutional and legal framework and assessed available information on climate change impacts, vulnerabilities, and adaptation actions, whilst identifying weaknesses and gaps within national and local institutions_
- **Institutional and legal capacity analyses**, e.g. for the Inter-Ministerial Working Group on Climate Change (IMWGCC) and the Institute of Geosciences (IGEO).
- **Legal drafting**, e.g. supporting the draft DCM no.889: "On approval of the regulation for monitoring, reporting of greenhouse gas emissions and other information related to climate change at the national level"; Minister Order "On Reporting Template and Modalities of the Inter Ministerial Working Group on Climate Change"; Minister Order "On the Internal Regulation for Functioning of the Inter Ministerial Working Group on Climate Change".
- **Local Adaptation Plans (LAPs)** for municipalities Durrës, Kukës, Krujë, Vlorë, Elbasan, Fier, Gjirokastër, and Përmet
- **National Training Programme on Climate Change** (under the coordination of IMWGCC).
- **Analysis of current climate and future scenarios** at national and local level.
- **National socio-economic scenarios**, based on the Shared Socioeconomic Pathways (SSPs).
- **Vulnerability and risk assessments** undertaken for the five priority sectors—energy, transport, agriculture, tourism, and urban development.
- **Initial long-list of 150 adaptation measures** established.
- Following a **prioritization process** a final list of **66 priority adaptation interventions** was established.
- **Legal framework and sectorial policy reviews** to ensure effective integration of climate adaptation into policies
- Developing the final **NAP Strategy and the Implementation Plan for Prioritized Adaptation Actions**, including a**Gender Action Plan and the Stakeholder Engagement and Communication Plan**
- **Monitoring and evaluation (M&E) framework** to track progress in implementing the NAP process and the execution of adaptation measures within the NAP
- **NAP Financing Strategy**
- **Private Sector market assessment study to support adaptation efforts** and foster collaboration to leverage private investments and innovations in climate-resilient technologies.

Figure 1. NAP process in Albania July 2021-August 2025.



2.5 Summary of Key Barriers and Lessons Learned from the NAP processes in Albania

Albania's 2nd NAP process (2021-2025) assisted with planning and prioritization of adaptation measures. It highlighted the importance of capacity strengthening, institutional engagement and integration of climate adaptation into all levels of governance.

Barriers and challenges

A summarized list of **barriers/ challenges** during this process, as identified through a number of documents and reports prepared during the NAP process, is listed below:

Mainstreaming

Though mainstreaming of adaptation to climate change is already a legal requirement, adaptation is still insufficiently integrated into national and sectoral strategies. Environmental Impact Assessments (EIAs) and Socio-Economic Impact Assessments (SEIAs) lack a proper Climate Risk Assessment, bringing to minimal adaptation considerations in decision-making. Work on better mainstreaming was undertaken during the NAP process, but will need further strengthening going forward.

Institutional engagement and co-ordination

though the institutional set-up for adaptation to climate change is approved by law, the mandates were not fully elaborated or implemented and inter-institutional coordination remained weak over time. The IMWGCC with its important role in coordination was dormant at the beginning of the 2nd NAP process and took time to be re-activated. Though present throughout the NAP-2 process, participation and engagement lacked stability and continuity of the appointed staff (climate focal points). Furthermore, poor coordination systems inhibited sharing adaptation outcomes and reports across ministries and institutions. Adaptation interests across governance levels were also not always compatible.

Local actors often prioritized context-specific, immediate interventions that respond to tangible, short-term risks, while national institutions typically focus on long-term, strategic objectives aligned with broader development and climate commitments.

Human resources

Overall, institutions lack dedicated staff/structures for climate change adaptation, thus relying on ad-hoc arrangements. Very few specialists in public administration work on climate change. No initial and on-the-job or regular in-house training on climate change is provided. Training has been irregular, often linked only to international projects, and institutional knowledge is frequently lost due to staff turnover. The current staff directly or indirectly involved with climate change is relatively new and had hardly had any training on these issues before the 2nd NAP process. Inadequate human and financial resources have hindered sustainable and hands-on NAP design and implementation, making Albania reliant on international support.

Financing

Adaptation financing at present relies heavily on donor funds, with minimal domestic

contributions and beneficiary ownership often insufficient, especially at the local level. Current domestic financing is reactive, mostly for relief and reconstruction after disasters, rather than proactive adaptation.

Data

Data collection processes are fragmented, limited, and uncoordinated at the national level. Climate knowledge largely depends on international projects, creating dependency and gaps in information. Shortage of reliable, sufficient and continuous data (from climate monitoring, adaptation relevant projects and measures, use of Rio Markers to climate change, costs and finances used on adaptation, etc.) created difficulties with the Climate Risk and Vulnerability Assessment, cost-benefit analysis and monitoring and evaluation of adaptation interventions, which were partially mitigated through discussion with national experts, using templates, GIS, desk review and expert judgement. A lack of system for sharing adaptation projects outcomes and reports with MoE as the climate change coordinator at governmental has weakened MoE's awareness on overall progress with adaptation at the sectoral and local level.

Monitoring and Evaluation

Lack of defined monitoring and evaluation protocols has reduced accountability and made it difficult to assess the actual achievements of the adaptation initiatives implemented to date. Monitoring and evaluation of adaptation projects has not been the rule, rather a case-by-case practice.

Lessons learned

As for the **Lessons Learned** of the NAP-2 process and taking the above barriers and challenges into account, the following can be summarized for implementation of future climate action in Albania:

Mainstreaming

The 2nd NAP implementation measures should be used to mainstream adaptation to climate change into the 5 priority sectors in the after 2030 National Strategy for Development and European Integration. CCA mainstreaming is a qualitative process that does not necessarily require more funding. It means "doing things differently", but not necessarily "doing more". Using Rio Markers on CCA to evaluate the level of mainstreaming into other policies can help the process.

Institutional engagement and co-ordination

Sustainable and effective NAP implementation and its monitoring and review calls for an active and stable IMWGCC. IMWGCC members involvement needs to be backed up by an extension to their current job-description.

Human resources

Capacity building with regular training on adaptation to climate change should be prioritized to reduce reliance on external support. The Albanian School of Public Administration can be engaged for a regular and continuous update with adaptation and project management knowledge. The implementation of the NAP Communication and Stakeholder Engagement Plan (CASEP) is also key.

Financing

Ensuring adequate financing is vital for the implementation of the NAP. More public domestic funding should be available beforehand to face and counter the effects of climate change and to plan adequately, complemented by international and private sector funding. This is further elaborated in the Financing Strategy that should guide the implementation of this NAP.

Data

Implementation of the Decision of the Council of Ministries on monitoring and reporting on climate change and other related data is important for systematic and comprehensive data collection, sharing, and integration into policy design. An online sharing platform between MoE and relevant line ministries for outcomes and reports (including administrative reports) of adaptation projects, covering implementation, monitoring, evaluation, learning and verification results will enhance the overall information for MoE as the national coordinator institution for adaptation issues.

Monitoring and Evaluation

Comprehensive and consistent M&E of the overall relevance of projects/ initiatives/measures to be taken, including their achievements, cost effectiveness and lessons learned, will inform on the efficiency and effectiveness of climate action and need to replicate and/or to scale them up further in Albania. The M&E Framework presented in this NAP is a good start and should be followed for the implementation of this NAP.

03

National socio-economic, institutional and policy context

3.1 Population

Albania is a small mountainous country on the western side of the Balkan peninsula in south-eastern Europe, with a land area of 28,748 km^2, a population of 2,761,785 and a population density of 98 persons/km^2 (2023). Projections show that by 2030 the total population of Albania will decrease slightly to some 2,745,996 inhabitants. The median age of the population has increased from 33.2 years in 2012 to 38.3 years in 2023 and it is expected to reach 42.1 years in 2031[35]. The dependency ratio is expected to rise from about 20.5 elderly people per 100 people of working age in 2019, to about 35.0 elderly people for every 100 people of working-age[36] by 2031, which will put more pressure on those working. This will also have as a consequence the increase of the exposure of the elderly to disease and health issues, including from climate risks such as extreme heat, which can have severe impacts on those with pre-existing conditions and limited mobility, as well as increase per capita health costs.

The urban population has increased from around 1/3 of the total population in the early 1990s to almost two-thirds (62%) in 2020 and is expected to continue to rise to 78.2% by 2050[37]. The rural population, particularly smallholder farmers, are disproportionately affected by climate variability, including droughts, floods and unpredictable weather patterns, which threaten agricultural productivity and livelihoods. As a result of the rural – urban migration, the remaining rural population will belong to older age groups who are more vulnerable to climate change. Rural children and those from marginalized groups and low-income households, may face significant educational disruptions and other challenges due to climate-related disasters, which can affect long-term socio-economic mobility. The coastal population has also increased (to 36% in 2020), placing more people at risk in an area highly susceptible to coastal flooding. But also the growing urban population faces increasing climate risks, especially related to health, as will be further detailed in Chapter 4.
A gender analysis undertaken for this NAP revealed gender disparities related to poverty and social inclusion, including gaps in employment across all sectors, and with women facing disproportionate challenges in accessing resources, ownership, participation in decision-making and building resilience[38]. This will be further elaborated in Chapter 7.

3.2 National Economic Indicators

From one of the poorest countries in Europe, Albania has transformed into an upper-middle-income country with a GDP of 23 billion USD and GDP/capita of 8300 USD in 2023[39]. This economic growth has been associated with a transition from a planned economy based on raw materials, agriculture and industry, into a more diverse economy largely supported by the private sector. Following an expansion of 3.9% in 2023, real GDP growth is projected to average around 3.5% in 2024–2029, driven by domestic consumption, tourism, and construction activity[40]. Over the last three decades social indicators have also improved in Albania. Albania's Human Development Index (HDI) value[41] for 2023 was 0.81 — which put the country in the very high human development category — positioning it at 71 out of 193 countries and territories, though still

35. INSTAT, 2024.
36. INSTAT, 2023.
37. Climate Risk Country Profile, Albania (2021).
38. INSTAT (Institute of Statistics Albania), 2023.
39. Imf: 2024 article iv consultation—press release; staff report; and statement by the executive director for albania, 2025.
40. Ibid.
41. HDI considers life expectancy at birth, education, gross national income per capita, etc.

some 21.7% of Albanians lived below the national poverty line[42]. Unemployment reached a historically low 8.8% in 2024, but unemployment amongst the youth was 19.1%. Climate change threatens to reverse these gains by exacerbating economic shocks, particularly for low-income households that are less equipped to recover from extreme weather events. During the last 33 years the economic loss caused by floods was estimated at USD2.3 billion[43]. The socio-economic progress of Albania has been recently hampered by two shocks. In November 2019 the country was hit by a devastating earthquake, measuring 6.3 on the Richter scale (the strongest in 30 years), that caused 51 fatalities, affected over 200,000 people and led to losses equivalent to an estimated 7.5% of GDP. And in the midst of the reconstruction efforts the COVID-19 crisis took hold, putting even more pressure on the Government's budget and response, as it forced Albania to put key economic sectors in lockdown[44]. Potentially further worsening this situation, currently a tightening in global economic and financial conditions could hamper Albania's access to external market financing, including for climate finance. The economy is vulnerable to continuing unfavourable weather conditions[45], that could particularly affect marginalized and low-income groups who spend a higher proportion of their income on essential goods. This situation could exacerbate food insecurity and deepen existing inequalities for women, elderly populations, and coastal and rural communities. Distinct gender disparities in employment exist between women and men: At the national level with women are employed at a lesser degree than men, 52.8% vs. 67.7% as of 2023[46]. In agriculture**,** more women are employed (40.1% of the total female workforce) than men (28.7% of the total male workforce), as opposed to most other sectors where men dominate the work force, including construction (13.5% men vs. 0.6% women) and energy/utilities (4.3% men vs. 0.9% women)[47].

3.3 Sectoral socio-economic context and outlook

This section presents the current situation, vision, recent progress and challenges for the main economic sectors in Albania, with special reference to the 5 NAP priority sectors[48]. This is based on the sectoral analysis undertaken in the frame of the UNDP NAP Project and compared with the sectoral governmental vision as given in the NSDEI III, 2022-2030. Besides the specific economic challenges, these sectors also face specific climate related risks and challenges, that are further detailed in Chapter 9 for the 5 NAP priority sectors.

Agriculture and forestry

Agriculture, including livestock, remains a vital sector in Albania, employing nearly 34% of the workforce and contributing 16.9% to GDP in 2022[49]. Albania has 696,000 hectares of agricultural land, divided into four Agro-Ecological Zones (AEZ): Lowland, Intermediate Hill, North & Central Mountains, and Southern Highlands. Field crop production is primarily concentrated in the lowlands, with some presence in other agro-ecological zones (AEZs). Livestock distribution varies across regions: bovines and horses are found in all four AEZs while pig and poultry farming is concentrated in the lowlands and intermediate hill zone. The sector is predominantly composed of small, family-run farms (85%), with an average farm size of 1.2 hectares. National

42. Ibid.
43. The Future of Water in Agriculture in Albania: A Broad Sector Rethinking. World Bank. 2014.
44. Report on socio-economic scenarios. Prepared under UNDP NAP Project. 2023-2025.
45. Ibid.
46. World Bank Gender Data Portal, "Albania Economy Profile", 2023
47. Albania's National Adaptation Plan (NAP) Gender Action Plan (GAP). Prepared under UNDP NAP Project, 2023-2025.
48. Agriculture and forestry, tourism, energy, transport, urban development.
49. Albania - GDP distribution across economic sectors 2013-2023| Statista

and international market demand for agricultural, livestock and forestry products will likely continue to grow, provided the important investments in irrigation, drainage and flood protection (rivers and sea) are made and increased water demand has been satisfied.[50] The small size of the farms, land fragmentation and unclear property rights remain the main challenges for the sector. Climate change threatens agricultural productivity through increased frequency of extreme weather events, droughts, and floods, see Chapter 4 , and Chapter 5 for identified adaptation measures.

Forests cover approximately 39% of Albania's land area and are a crucial source of firewood for rural households. However, forest areas have declined from 1.385 million hectares in 1938 to 1.051 million hectares in 2018. The forestry sector faces significant climate-related challenges, including increased frequency of forest fires, shifts in species distribution, and pest and disease outbreaks. Between 2007 and 2019, approximately 337,800 hectares of forest were burned, representing 33% of the national forest area. Illegal logging and inadequate forest management further exacerbate these challenges. Strengthening forest management capacity and enhancing reforestation efforts are essential for mitigating the impact of climate change and ensuring the sustainability of forest resources.

Tourism

Tourism is a key driver of Albania's economy, contributing almost 25% to GDP in 2024 and employing 20% of the total of work force in Albania. The sector has shown remarkable post-pandemic recovery, with tourist numbers growing by 56% in 2023 and an additional 15% in 2024, reaching 11.7 million visitors. Coastal tourism is the main force of the industry, but with nature and rural tourism coming more to the fore. Tourism will be further promoted by the construction of new major tourism infrastructure, mainly in coastal areas. However, tourism is highly sensitive to climate change impacts, including rising sea levels, coastal erosion, and extreme weather events, as further detailed in Chapter 4. Adapting the tourism industry to climate change requires diversifying tourism products (e.g., cultural and eco-tourism) and improving climate-resilient infrastructure, see Chapter 5 for identified and prioritized adaptation measures in tourism.

Energy

Albania is endowed with a wide variety of **energy** resources ranging from oil and gas, coal, hydropower, natural forest biomass and other renewable energy (solar power, wind power, geothermal). In 2023, oil accounted for the largest share of supply of energy at 43%, followed by hydropower (34%) and biofuels and waste (12,9%)[51]. The nation's objective of energy security is to ensure a stable, safe and quality supply of all energy production and supply systems, which means that energy must be available, accessible, affordable and acceptable in relation to the country's development. Climate extremes can affect and threaten this energy security through its supply and distribution, see also Chapter 4 for details, and this will need to be taken further into consideration for future energy policies and strategies.

Transport

Albania's **transport sector** relies heavily on its road networks, with a total length of 18,000 km and with increasing traffic loads for both goods and passengers. The volume of road traffic is projected to exceed the system's capacity in the near future, particularly on heavily travelled routes like the Tirana-Durres corridor and the Adriatic-Ionian highway. Heavy traffic already creates congestion problems in cities such as Tirana, Durres, Fier, Shkoder, etc. In contrast, the railway network remains underutilized, with 200 km of the 416 km main railway line not in operation. Maritime transport is the main mode of transport for goods to and from Albania, with 67.6 % of export

50. National and Sectoral Scenario Development Report. Prepared under UNDP NAP Project. Ministry of Environment, 2023-2025.
51. International Energy Agency. (2025). Albania – Countries & Regions. https://www.iea.org/countries/albania

goods and 51.6 % of import goods carried by sea in 2022[52]. Air transport grew by 212% in the period 2014-2022 (reaching 39,062 flights in 2022), and number of passengers by air increased from around 1.8 million passengers in 2010 to around 5.2 million passengers[53]. Climate change poses significant risks to transport infrastructure, including damage from extreme weather events and rising maintenance costs, see further Chapter 4 for details. Developing climate-resilient transport infrastructure and promoting sustainable transportation modes will be critical to adapting to these impacts, see Chapter 5.

Urban development

Albania is currently divided into four regions, characterised by significant regional, economic, urban-rural, inter and intra-regional disparities. Cities and urban centres play an increasingly important role in the socio-economic environment. The Tirana/Durres Region is the most economically advanced, with other regions being less developed, more rural with fragmented settlements, and a lower quality of human capital. Urbanization is accelerating in Albania, with the urban population projected to reach 78.2% of total population by 2050. The on-going depopulation of rural areas affects certain services, e.g. access to health care, food and other basic supplies in these areas. Urban growth increases the demand for infrastructure and services, placing pressure on urban areas for its development. The General National Spatial Plan (GNP, 2016), represents a coordinated effort to spatial planning, and will shape Albania's future urban development trajectory. Because of its perceived vulnerabilities, substantial investment and efforts are needed for climate change adaptation, with major vital infrastructures in need to be climate-proofed, to increase the country's resilience to climate change impacts. See Chapter 4 for specific climate change risks affecting urban development and Chapter 5 for identified and prioritize adaptation measures.

Water resources are an important source of hydropower, producing around 90% of the country's electricity, provides irrigation for agriculture. Currently, 1 billion cubic meters of water is needed per irrigation season to irrigate 360,000 hectares. Extreme weather events pose risks to water quality and supply infrastructure, including for provision of water and sanitation for the population. Ensuring sustainable water management and improving irrigation efficiency are essential to meeting future water needs and adapting to climate variability[54].

The **industry sector** in Albania has recorded very positive developments during the last decade. Value added from industry (including construction) reached 26% of GDP in 2020. The imports to Albania increased from USD 4.41Billion in 2015 to USD 5.42Billion in 2020, mostly from Italy, China, Greece, Turkey and Germany. The exports from Albania have increased from USD 2.2 Billion in 2015 to USD 2.62 Billion in 2020, with top exports being footwear, clothes, crude petroleum and raw iron bars, mainly exported to Italy, Serbia, Germany, Spain, and Greece. Despite these positive trends, climate change poses several risks to the industrial sector, e.g. extreme weather events such as floods and droughts, can disrupt supply chains, damage infrastructure, and increase production costs. Strengthening climate resilience within the industry sector involves diversifying supply chains, improving energy efficiency, and investing in adaptive infrastructure In 2019, the **services sector** (represented by the subsectors of trade, transport, commercial activities and telecommunication services) constituted about 50% of the GDP of the country. Since the early 2000s, Albania has become a leading destination for ICT services, with its resource availability, increasing attention to services, infrastructure and attractive investment incentives, and with Tirana as the main Information and Communications Technology (ICT) centre of Albania. This sector in Albania has seen steady growth, with, by the end of 2021 about 4,005 active enterprises

52. National Strategy for Development and European Integration (NSDEI III - 2022-2030)
53. NSDEI III (2022-2030)
54. The Fourth National Communication of Albania on Climate Change, 2022

operating in ICT. However, climate change can significantly affect service delivery and infrastructure, e.g. increased heatwaves and extreme weather events may disrupt telecommunication networks, while flooding and storms can damage logistical infrastructure.[55]

3.4 Institutional, policy and legal framework

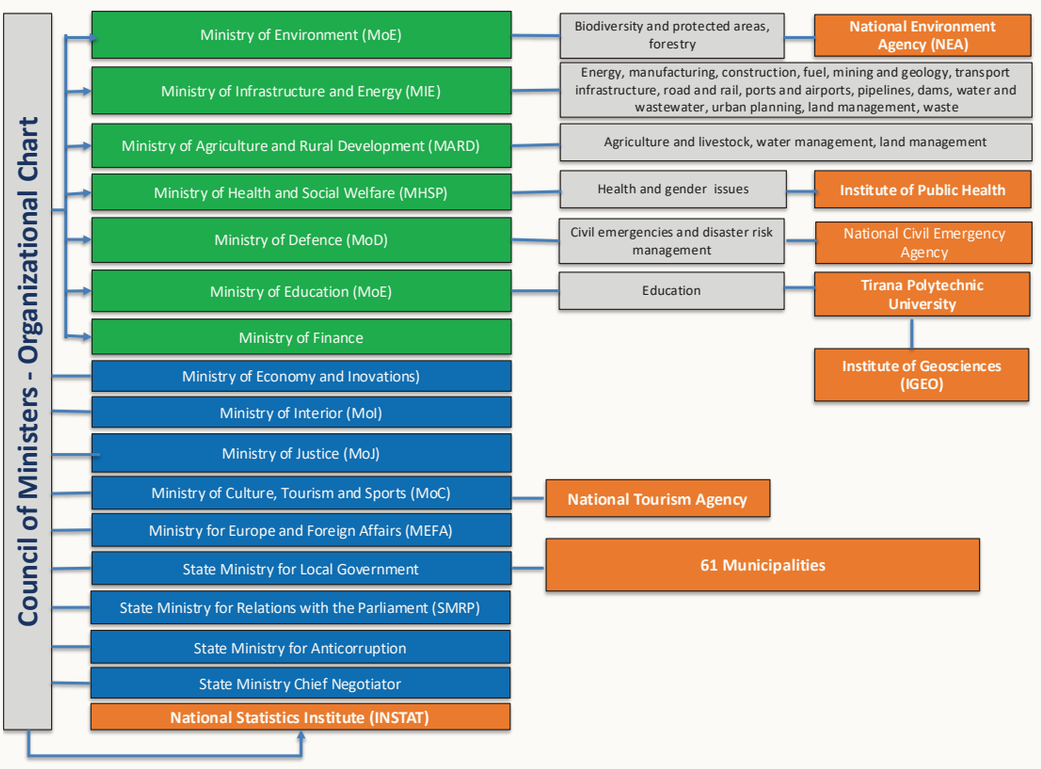
The Republic of Albania is a **constitutional republic** with a President (the Head of State), a democratically elected parliament (the Legislative), the Council of Ministers (the Executive) and the Judiciary. Administratively, Albania is divided into 12 regions (Qark) and 61 municipalities, encompassing both urban and rural areas (bashki and komuna). [56] The figure below presents the organizational structure of the Council of Ministers of Albania, illustrating the main ministries, subordinate agencies and institutions.

Institutions dealing with climate change

As per the Law on Climate Change (2020), responsibilities on climate change are shared between a number of **ministries and institutions**.

- **The Ministry of Environment (MoE)** is the central ministry responsible for environmental

Figure 2. Organizational structure of the Council of Ministers of Albania under the Law on Climate Change 155/2020



Source: UNDP.

55. National Strategy for Development and European Integration 2022-2030 (2023).
56. Support to filling gaps IN Climate Change Adaptation Data and Risk Analysis. National and Sectoral Scenario Development Report. Prepared under UNDP NAP Project. January 2023.

protection and is in charge of climate change policy and legislation, coordination at the government level and is the country's Focal Point to the UNCCCF. This Ministry also houses the National Environmental Agency (NEA), wich implements and monitors these policies, while the Line Ministries and their subordinate Agencies, Authorities and Institutes address climate change issues in their respective sectors.

- **The Ministry of Agriculture and Rural Development (MARD)** is the lead agency for agriculture and rural policy, and plays a critical role in adaptation due to agriculture's high climate vulnerability.
- **The Ministry of Infrastructure and Energy (MIE)** is responsible for territorial and urban planning, housing, public works, territorial development policy, building codes, land-use planning regulations and oversight of major urban infrastructure – all of which are crucial for climate adaptation. MIE also oversees the Energy Department that is responsible for integrating climate adaptation into energy policy and infrastructure planning. MIE is furthermore the lead institution for transport (roads, rail, ports, aviation) and its infrastructure, with the Albanian Road Authority (ARA) responsible for managing the national road network, and the General Maritime Directorate and Civil Aviation Authority integrating adaptation within their mandates. **Other Line Ministries and public institutions**, e.g. Ministry for Europe and Foreign Affairs, Ministry of Finance, Ministry of Education, Institute of Statistics (INSTAT), Prime Minister's Office, etc., have more indirect roles in climate change issues. The National Civil Emergency Agency (NCEA) under the Ministry of Defence deals with civil protection, including from climate change impacts, such as floods, landslides, forest fires, etc. through a number of coordination committees, commissions and working groups at the central and local level. However, climate change management at the sub-national level is still weak, also because of poor institutional, technical and individual capacities at this level[57].
- **Meteorological services:** The development and sharing of climate change information is supported by two meteorological institutes, the Institute of Geo-sciences (IGEO) under the Ministry of Education, and the Military Meteorological Service under the Ministry of Defence[58].
- The **Inter-Ministerial Working Group on Climate Change (IMWGCC)** is composed of expert members from the NEA, NCEA, INSTAT, IGEO, along with representatives from several sectoral ministries[59] and has a coordinating and consultative role in support of the MoE on climate related issues. It was assessed as largely remaining dormant since 2017[60]. In order to revive this forum, a remodelled draft Prime Minister Order "On establishment and functioning of the Inter-Ministerial Working Group on Climate Change" was developed[61], though is still to be approved. The IMWGCC is divided into two sub-groups: The Climate Change Mitigation Working Group (CCMWG) and the Climate Change Adaptation Working Group (CCAGW), and detailed rules are set for the chair and the technical secretariat, as well as operation manuals and a reporting template[62].

Adaptation management capacity can still be enhanced in the country. Some of the **institutional gaps**[63] detected in Albania related to climate change adaptation concern the:

- Lack of clear institutional mandates on climate

57. "Municipalities capacities and training needs assessment on Climate Change Adaptation". Prepared under the UNDP NAP Project. 2023
58. The Institute of Geo-sciences (IGEO) under the Ministry of Education and Science, and the Military Meteorological Service under the Ministry of Defence
59. Ministries of: Finance, Agriculture and Rural Development, Infrastructure and Energy, Education and Sport, Health and Social Welfare, Economy, Culture and Innovation, Europe and Foreign Affairs, etc.)
60. "National capacity and training needs assessment on Climate Change Adaptation" Report. Prepared under UNDP NAP Project. 2023
61. Stocktaking Report for the second NAP process in Albania. Prepared under UNDP NAP Project. December 2022.
62. "National capacity and training needs assessment on Climate Change Adaptation" Report. Prepared under UNDP NAP Project. 2023
Stocktaking Report for the second NAP process in Albania. Prepared under UNDP NAP Project. December 2022.
63. "National capacity and training needs assessment on Climate Change Adaptation" Report. Prepared under UNDP NAP Project. 2023

change by most of the institutions concerned by the Law nr. 155/2020 "On climate change".
- No dedicated structures to deal with climate change at the institutions concerned by climate change.
- No dedicated staff on climate change at the institutions concerned.

Policy and Legal framework

The **National Strategy for Development and European Integration** (NSDEI III, 2022-2030) is the national leading planning document that provides directions and defines the priorities of the sustainable economic and social development of the country on the way to its full EU membership. A rapid "Climate lens"[64] applied to the NSDEI III[65] showed that CCA mainstreaming has improved as compared to the previous NSD II (2015-2020). This is evidenced through the NSDEI III policy goal to increase resilience of the country to climate change impacts through specific adaptation measures, through: Climate change adaptation mainstreaming into national and local strategy documents and public budgeting; building of a national information and climate services platform; implementation of ecosystem-based-approach and nature-based-solutions; strengthening disaster risk management through early warning systems; adaptation in coastal areas. However, climate change has not been equally mainstreamed into all the priority sectors[66]. Other important policy documents that focus on CCA include the **Strategic Document on Climate Change Mitigation and Adaptation**, the revised **Nationally Determined Contributions** (NDC, 2021), the **National Energy and Climate Plan of the Republic of Albania** (NECP, 2024), etc.

With reference to the ongoing negotiations and adoption of the **EU climate acquis**[67] by Albania, the EU Adaptation Strategy (2021) outlines a long-term vision for the EU to "become a climate-resilient society, fully adapted to the unavoidable impacts of climate change by 2050". This strategy aims to reinforce the adaptive capacity of the EU and minimise vulnerability to the impacts of climate change, by: improving knowledge of climate impacts and adaptation solutions; stepping up adaptation planning and climate risk assessments; accelerating adaptation action; and strengthen climate resilience globally[68]. Albania also signed he EU Green Agenda for Western Balkans and other regional agreements that are linked to sustainability and climate action, and that guide its climate adaptation response. **Moreover**, the relevant legal framework for climate change adaptation includes the Law On Climate Change No. 155/2020 and its implementing DCM no. 889, dated from December 2022 on "Approving the regulation on monitoring and reporting of the GHGs and other climate related information at the national level". Three of the five objectives of the Law "On Climate Change" relate to CCA: enhance the CCA capacity at the national and local level; - promote economic development through job openings and competition, including the economic diversity and sustainable management of natural resources; and gradual participation in the implementation of EU climate change policy. Other relevant acts are the: Energy Acts; Civil Protection Law; and the Fiscal Risk Statement[69].

Additional details and a comprehensive list of Albania's climate-related legislation and policies can be found in **Annex I.**

64. An analytical process or tool to examine a policy, plan or programme for integration of climate change elements, following the "Integrating climate change adaptation into development co-operation: policy guidance"(OECD 2009). This could enable a policy maker to decide whether a policy, plan or programme is at risk from climate change and what changes could be made.
65. Guidance Note on how to include adaptation into sector development plan updates and an Assessment of CCA mainstreaming into Albania's national legislation & NSDEI III, 2022-2030 on five priority sectors. Prepared under the UNDP NAP Project.
66. Guidance Note on how to include adaptation into sector development plan updates and an Assessment of CCA mainstreaming into Albania's national legislation & NSDEI III, 2022-2030 on five priority sectors.
67. The European Union (EU) acquis is the collection of common rights and obligations that constitute the body of EU law, and is incorporated into the legal systems of EU Member States
68. EU Adaptation Strategy. Forging a Climate Resilient Europe - A new EU adaptation strategy (2021)
69. Stocktaking Report for the NAP process in ALBANIA. Prepared under UNDP NAP Project. December 2022.

04

Climate trends, scenarios, vulnerabilities and risks

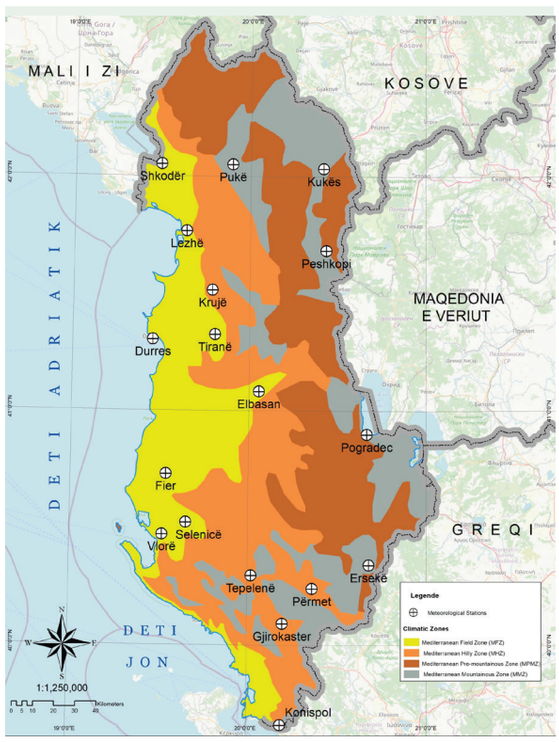
The methodology for assessing the climate change trends and scenarios in Albania was based on a comprehensive, interdisciplinary and participatory approach, which included analyzing the observed climate conditions and expected climate changes, assessing climate risks, and analyzing the vulnerability of the five key sectors and consulting stakeholders.

Building on this methodological foundation, it is essential to understand the current climatic context of Albania as a baseline for assessing future changes. According to the Koeppen climatic classification, Albania has a Mediterranean climate, which includes mild and humid winters, followed by hot and dry summers. Within this typical Mediterranean climate, because of the varied topography, substantial climate variations are observed, ranging from very cold winters in the northern, northeastern and southeastern areas, to very hot and dry summers along the coast.

Considering the spatial variation of the mentioned climatic elements and based on the changes in temperature and precipitation regimes, Albanian climatologists divide Albanian territory into 4 climatic zones (see below): Mediterranean Field Zone (MFZ), Mediterranean Hilly Zone (MHZ), Mediterranean Pre-Mountain Zone (MPMZ) and Mediterranean Mountainous Zone (MMZ) and 13 subzones.

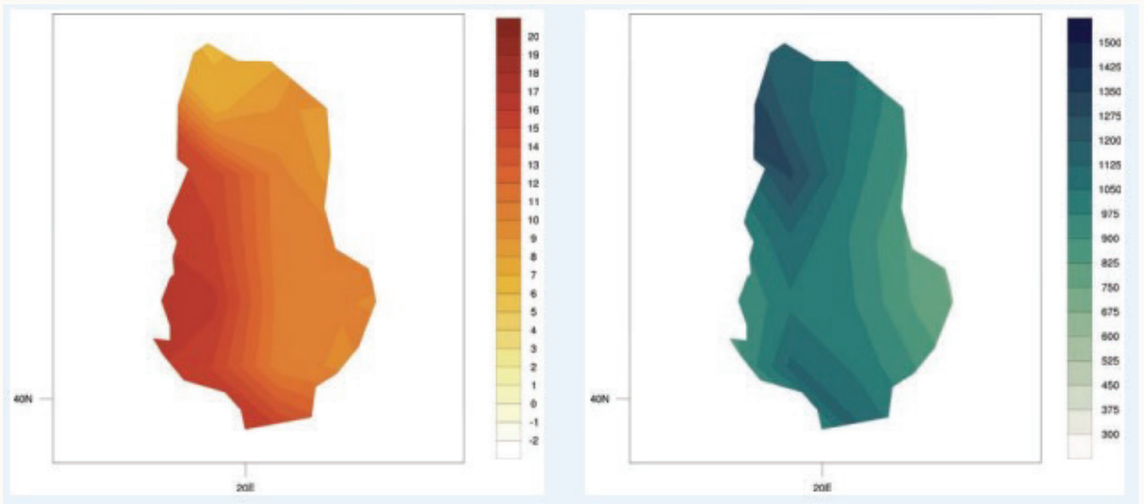
Next figure, presents the spatial distribution of Albania's average annual temperature (°C) and annual precipitation (mm) for the period 1991-2020, illustrating the country's pronounced climatic gradients from coastal to inland and mountainous areas.

Figure 3. The main climatic regions in Albania



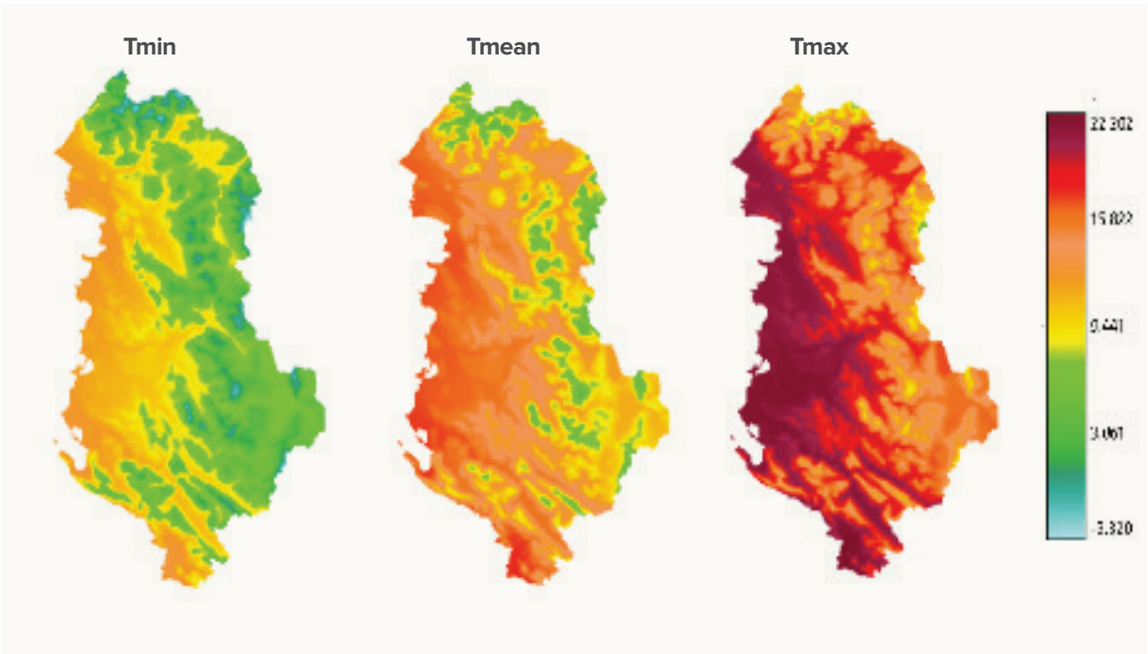
Source: SUPPORT TO FILLING GAPS IN Climate Change Adaptation Data and Risk Analysis. Government of Albania.

Figure 4. Map of average annual temperature (°C): annual precipitaion (mm) (right) of Albania, 1991-2020



Source: World Bank Climate Risk Country Profile 2021.

Figure 5. Annual temperature distributions



Source: Support to filling gaps in Climate Change Adaptation Data and Risk Analysis. Government of Albania.

70. SUPPORT TO FILLING GAPS IN Climate Change Adaptation Data and Risk Analysis. Government of Albania - Inter-Ministerial Working Group on Climate Change (IMWGCC) - Ministry of Environment. National and Sectoral Scenario Development Report. Baastel, January 2023

As a complement, Figure 5 shows the baseline distribution (1995–2015) of minimum, mean, and maximum temperatures, highlighting the range and variability of annual temperature conditions across the territory. This geographical diversity translates into differentiated climate risks and vulnerabilities across the territory. Albania is exposed to considerable climate and disaster-related risks, with varying levels of severity across regions. The primary natural hazards include floods, landslides, wildfires, earthquakes, snow avalanches, and biological threats such as pandemics and waterborne diseases. The country's vulnerability is further exacerbated by socio-economic factors such as population growth, urbanization, resource depletion, poverty, limited institutional capacity, insufficient disaster risk management, and low community participation[71].

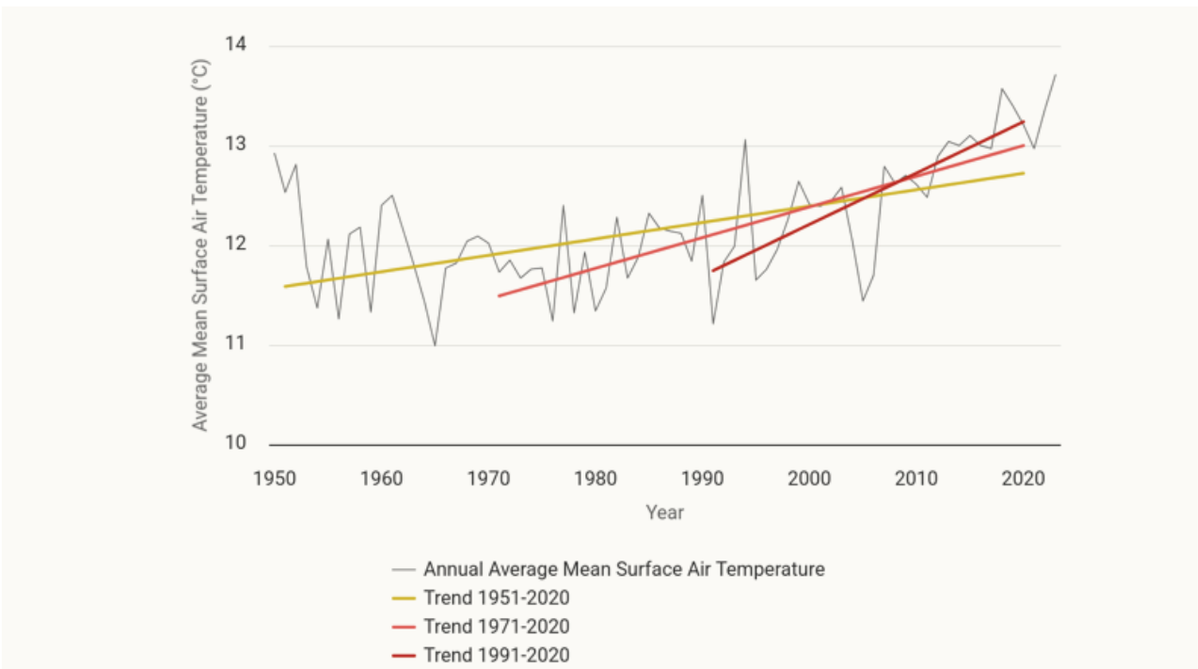
4.1 Climate trends and scenarios

Observed Climate Trends

Temperature observations between 1951 and 2020 in Albania show interannual changes of annual average temperatures (Figure 6). Three distinct periods can be observed, namely an increase in annual average temperature from 1951 until 2020, 1971 until 2020 and 1991 until 2020. Across the country, observations show a clear increase in surface air temperature: temperature trends in 1991-2020 were higher than the temperature trends for in 1951-2020[72].

Precipitation observations do not exhibit a definitive trend (Figure 7). Since the 1950s, a slight decline in the mean annual precipitation has been recorded; however, this decrease is not statistically significant. Conversely, the northern

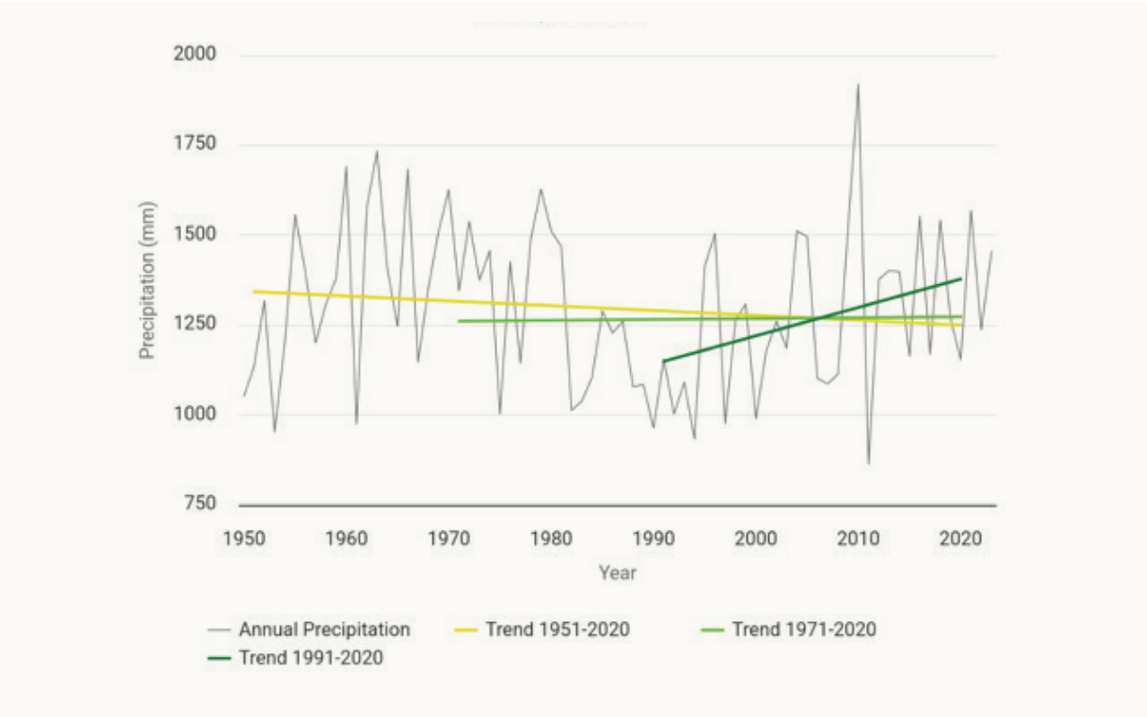
Figure 6. Average mean surface air temperature annual trends with significance of trend per decade (1951-2023)



Source: Climate Change Knowledge Group, 2021.

71. National Civil Protection Agency, 2023
72. Baastel, 2024a

Figure 7. Precipitation annual trends with significance of trend per decade (1951-2023)



Source: Climate Change Knowledge Group, 2021

section of the coastal zone has experienced an increase in the number of rainy days per year[73]. Overall, while seasonal precipitation patterns show no substantial variation, an increase in rainfall intensity has been noted.

Additionally, data from the Emergency Events Database highlight that floods have constituted the most frequent hydrometeorological hazard in Albania over the past two decades, although no discernible trend regarding their frequency has been identified[74].

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Albania has been subject to sea level rise. As illustrated in Figure 8, an upward trend was observed between 1993 and 2004. This was followed by a three-year period during which the sea level rise anomaly showed a decline, before resuming an average increase between 2007 and 2015[75].

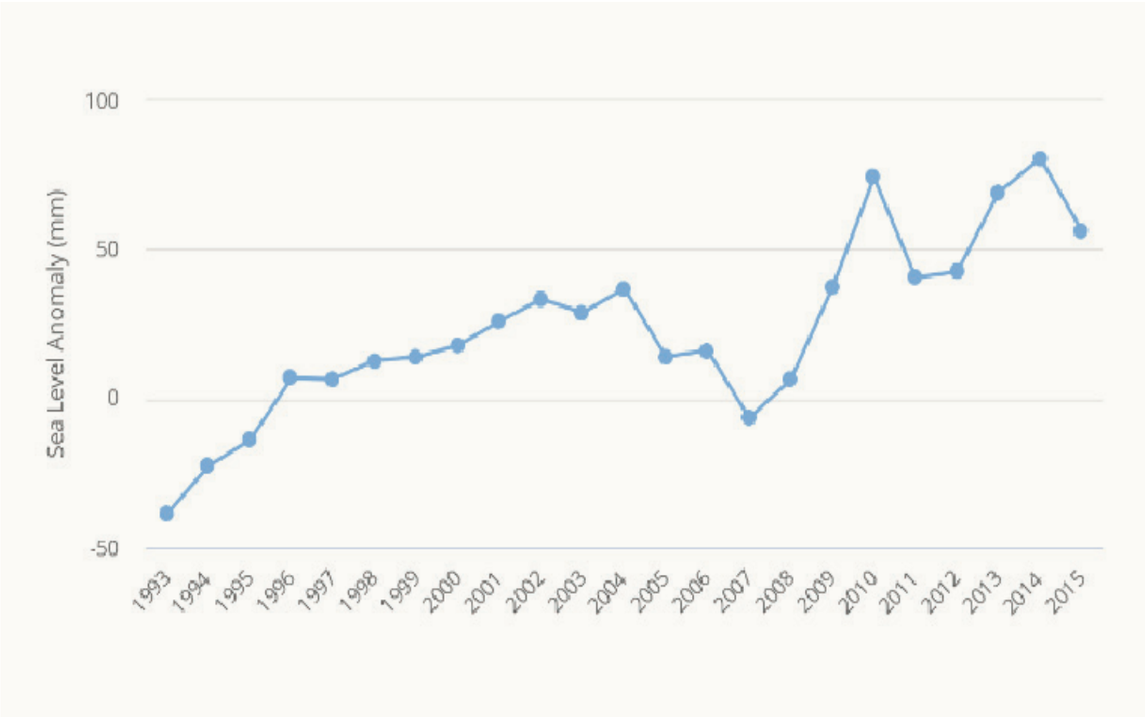
Further detail on municipal-level climate trends and projections is provided in **Annex II**, offering a localized perspective that complements the national-scale analyses presented.

Future Risks: Climate projections

To understand Albania´s climate projections, a brief description of the five Shared Socioeconomic Pathways (SSPs) is presented below[83]:

73. Hodnebrog et al., 2019
74. World Bank Group (WBG), 2021
75. Baastel, 2024a

Figure 8. Albania's sea level rise anomaly (in mm) between 1993 – 2015



Source: Climate Change Knowledge Group, 2021.

- **SSP1: Global commons are being preserved:** the boundaries of natural systems are being upheld, with an emphasis placed on human well-being rather than solely on economic growth. Income disparities, both between and within countries, are being diminished. Consumption patterns are directed towards minimizing the use of material resources and energy.

- **SSP2: development into the future:** Income trajectories across countries are diverging markedly. Although some degree of cooperation exists between states, it remains limited in scope. Global population growth is moderate, stabilizing in the latter half of the century. Environmental systems are experiencing a degree of degradation.

- **SSP3: Regional rivalry:** The resurgence of nationalism and regional conflicts has relegated global concerns to a lower priority. Policy agendas are increasingly centered on national and regional security matters. Concurrently, investments in education and technological advancement are declining, contributing to rising inequality. Several regions are experiencing severe environmental degradation.

- **SSP4: Inequality:** The gap between globally cooperative, developed societies and those remaining at lower stages of development, characterized by low income and limited educational attainment, is widening. While environmental policies prove effective in addressing local challenges in certain regions, they yield limited success in others.

Table 1. Projected rise of global temperature under different scenarios

	Near term, 2021–2040		Mid-term, 2041–2060		Long term, 2081–2100	
Scenario	Best estimate (°C)	Very likely range (°C)	Best estimate (°C)	Very likely range (°C)	Best estimate (°C)	Very likely range (°C)
SSP1-1.9	1.5	1.2 to 1.7	1.6	1.2 to 2.0	1.4	1.0 to 1.8
SSP1-2.6	1.5	1.2 to 1.8	1.7	1.3 to 2.2	1.8	1.3 to 2.4
SSP2-4.5	1.5	1.2 to 1.8	2	1.6 to 2.5	2.7	2.1 to 3.5
SSP3-7.0	1.5	1.2 to 1.8	2.1	1.7 to 2.6	3.6	2.8 to 4.6
SSP5-8.5	1.6	1.3 to 1.9	2.4	1.9 to 3.0	4.4	3.3 to 5.7

Source: IPCC, 2021.

- **SSP5: Fossil-fuelled Development:** Global markets are becoming progressively integrated, fostering innovation and technological advancement. However, social and economic development relies heavily on the intensified exploitation of fossil fuel resources, with coal comprising a significant share, and is characterized by a globally prevalent energy-intensive lifestyle. While the world economy continues to expand, local environmental issues, such as air pollution, are being effectively addressed.

Each scenario has an associated global temperature rise, as shown in table 1 above.

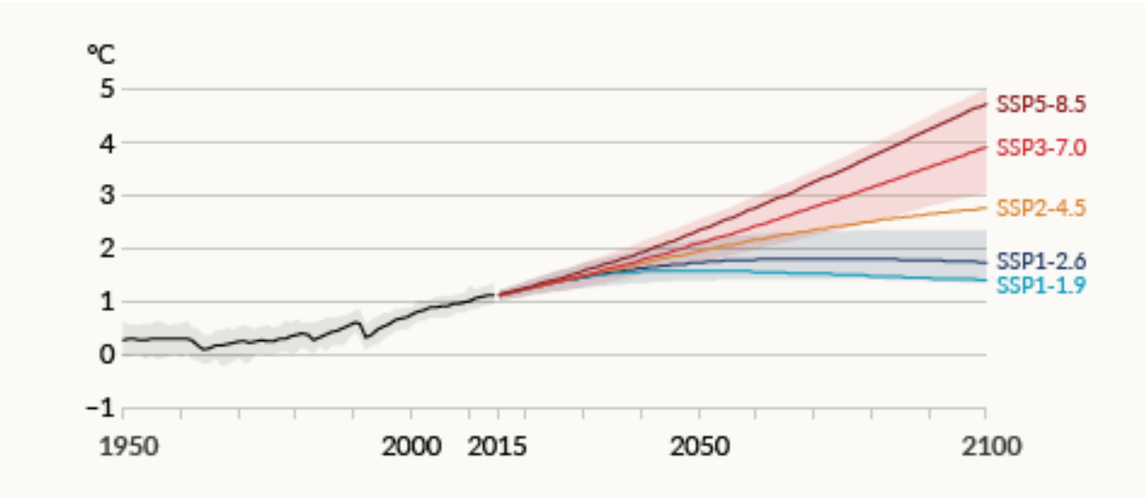
The observed and simulated changes in global surface temperature relative to the 1850–1900 period are shown in , illustrating the steady upward trajectory across all SSPs. Similarly, presents the expected global mean sea level rise, highlighting the acceleration of sea level increase under higher emission scenarios.

At the national level, Albania's socioeconomic context has been analyzed under the same SSP framework to assess potential vulnerabilities, adaptive capacity, and sectoral implications[76]. Albania's fragile economy, natural disaster risks, poverty, and inadequate infrastructure make it highly vulnerable to climate change. Environmental challenges like deforestation, poor watershed management, pollution, and unregulated coastal development, along with low climate awareness, further complicate adaptation efforts.

The country´s economy has shifted from raw materials and industry to a service-led structure, maintaining steady growth annually, driven by private sector performance, exports, and infrastructure investment. Furthermore, Albania's population has declined since the 1960s due to social reforms and high emigration rates. With growth rates stagnant, the population is projected to decline further, reaching an estimated 2.75 million by 2031. The following gives the SSP scenarios for Albania[77]:

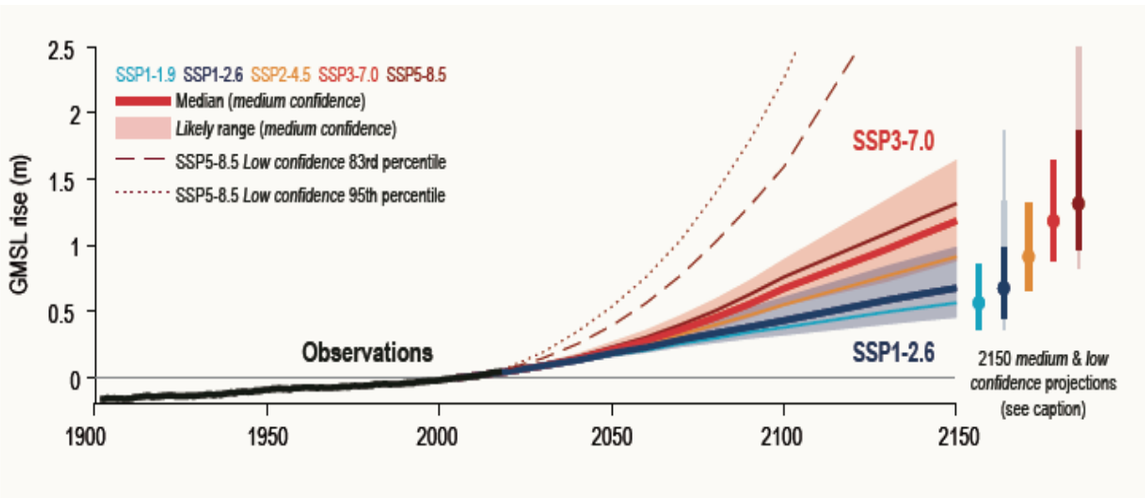
76. National and Sectorial Scenario Development Report. Prepared in the frame of the UNDP NAP Project. January 2023.
77. National and Sectorial Scenario Development Report. Prepared in the frame of the UNDP NAP Project. January 2023.

Figure 9. Global surface temperature change relative to 1850-1900



Source: TS, Climate Change 2021: The Physical Science Basis. Contribution of WGI to the AR6 of the IPCC).

Figure 10. Global mean sea leve rise relative to 1850-1900



Source: TS, Climate Change 2021: The Physical Science Basis. Contribution of WGI to the AR6 of the IPCC).

SSP1	**Sustainability – Taking the Green Road (Low challenges to mitigation and adaptation)** Under this SSP, the sustainable path the world is embracing will affect the dynamics of economic development and environmental quality in every country. International support and integration policies will ensure the implementation of green policies in Albania. Albania will face more education investments, more healthcare supply, moderate to high economic growth, shifted toward human well-being, and less inequality. • Due to a more educated population, the country will face lower population growth. Population in total will decline throughout the century. • Due to a lower level of inequality, more people would be able to travel for leisure, thus affecting tourism sector. • Lower resources intensity and lower population will imply lower demand for water. Management of water resources are also expected to improve. • Stronger regulation on environment will impact also agriculture sector. Agriculture will experience improvements in productivity due to application of best practices in the sector and the improvements in technology. • High sustainability means less food consumption, therefore again affecting agriculture production.
SSP2	**Middle of the Road (Medium challenges to mitigation and adaptation)** As the world follows a path in which trends do not shift markedly from historical patterns, Albania will experience similar social, economic, and technological developments as the ones it experiences today. GDP composition does not change, making the country highly reliant on service sector, and less on agriculture and industry. Albania remains a service economy, with activities mostly concentrated in financial services, hospitality, retail, and less in health, human services, information technology and education. Less efforts in environmental management, will lead to further degradation of environmental systems. Few efforts to achieve sustainability goals will affect management of resources. This path will cause moderate economic growth, higher population growth compared to SSP1, similar inequality levels to the ones experienced today. Population in total will decline throughout the century. The implication in different sectors are expected as follows: • Water demand will increase due to the higher number of population compared to SSP1. • Tourism sector might be affected by the higher population, but on the other hand, the persisting inequality among the population will affect tourism demand. The combined impact of these two driving forces on tourism is uncertain. • Less emphasis and developments in technology will affect agricultural production, lowering agricultural production yield.

SSP3	**Regional Rivalry – A Rocky Road (High challenges to mitigation and adaptation)** Under such scenario, stronger levels of nationalism will lead to strong constrains in international collaboration. For a country like Albania, highly reliant on international support, this will cause a substantial impact on economic development and economic growth. Slow economic development, with low rates of growth, causing even more inequality, are some of the highlights of the future under this scenario. Low investments in education, technology and healthcare and few environmental action will strongly the wellbeing of the population. A less educated population will lead to a higher rates of population growth, compared to other scenarios. Higher needs for food and water, accompanied with more disregard toward the environment, will cause resources exploitation. Less technological development will impact the production levels in agriculture sector, which on the other hand have to comply the needs of a rising population. Low level of economic development on the other hand will affect consumption, by making it lower. Tourism sector will face decline due to the rise of poverty and inequality among regions.
SSP4	**Inequality – A Road Divided (Low challenges to mitigation, high challenges to adaptation)** This scenario see a world with rising inequality. Education and healthcare access are reserved to only one part of the population. This causes high stratification among the country. This will highly affect Albania, a country currently suffering from the increasing stratification of the population. The jeopardized social cohesion might cause high political instability and conflicts. Fragmentation is also observed in the manner of implementation of different policies, for instance in environmental field. Population will decline among the rich and increase among the poor.
SSP5	**Fossil-fueled Development – Taking the Highway (High challenges to mitigation, low challenges to adaptation)** This scenario will see growth in all sectors in Albania, high investment in education and healthcare, causing less inequality, decline of population, high levels of economic growth, and increase in environmental action. The declining population will cause lower demand for water. High technological development will increase production yield in agriculture. Tourism will be negatively affected by the decline in population, but positively affected by the high economic growth rates and lower inequality levels. The overall effect on tourism will result from the combined effects of population decline and economic growth.

See below and for some key descriptions of the above scenarios[78]:

78. SUPPORT TO FILLING GAPS IN Climate Change Adaptation Data and Risk Analysis. Government of Albania - Inter-Ministerial Working Group on Climate Change (IMWGCC) - Ministry of Environment. National and Sectoral Scenario Development Report. Baastel, January 2023

Figure 11. Albania Baseline scenarios for GDP

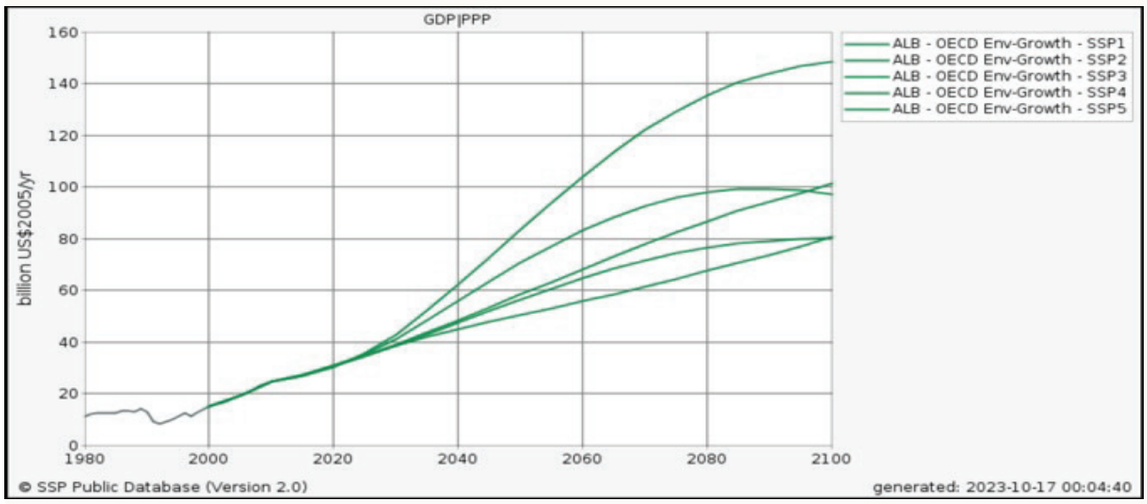
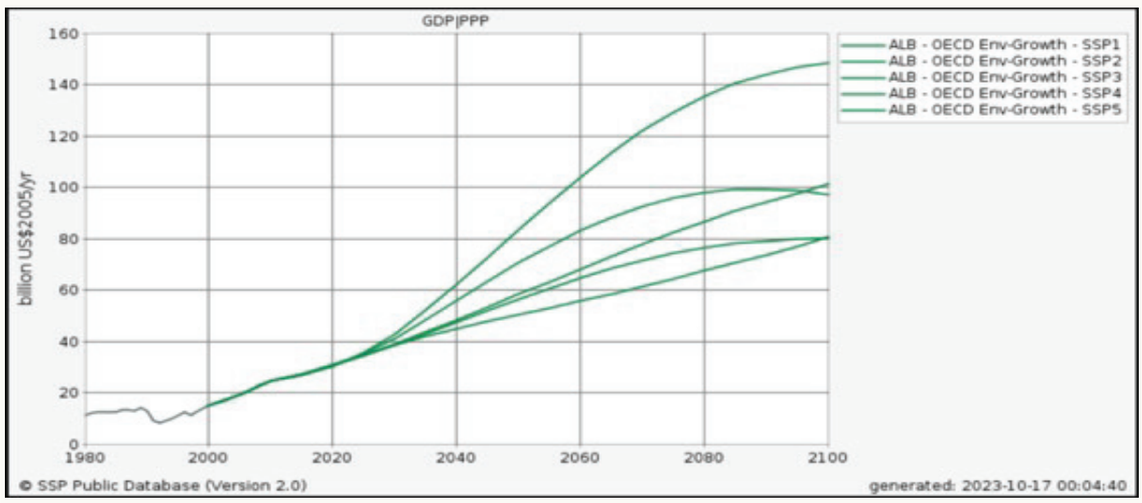


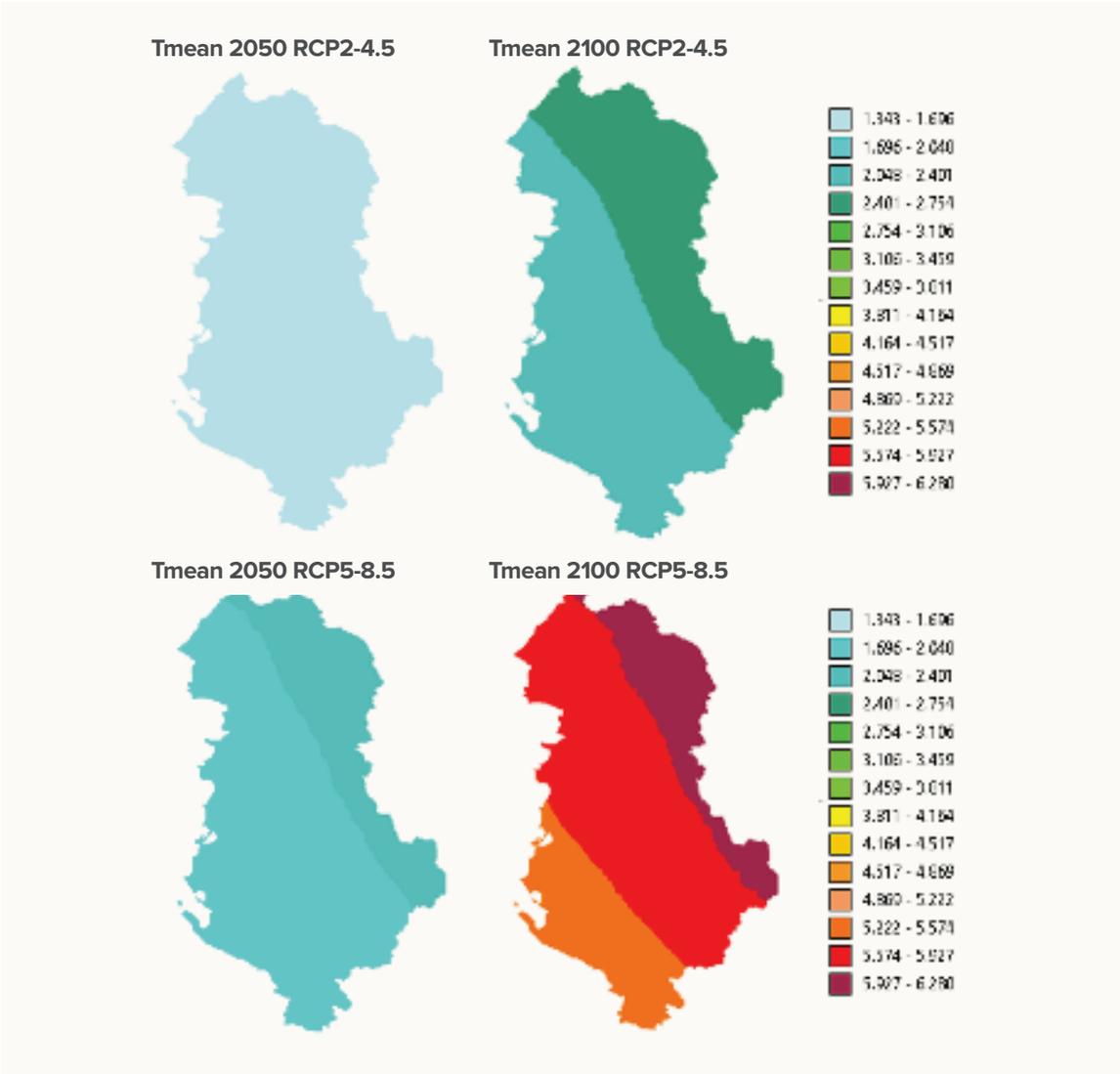
Figure 12. Albania Baseline Scenarios for Population



Temperature

Projected annual changes in mean temperature relative to the reference climatological period (1996–2015) are expected to reach up to 0.8°C (ranging from 0.5°C to 1.1°C) by 2030 and 1.3°C (ranging from 0.8°C to 1.9°C) by 2050. Under the intermediate scenario SSP2-4.5, temperature increases by 2100 are projected to range between 1.4°C and 3.1°C annually, and between 1.9°C and 3.9°C during the summer. The high and very high emission scenarios, SSP3-7.0 and SSP5-8.5, project that annual and summer temperatures could rise by up to 4.6°C (ranging from 3.2°C to 6.8°C) and 6.0°C (ranging from 4.1°C to 8.9°C), respectively, by 2100. All SSPs forecast lower temperature increases in winter and spring relative to summer and autumn, with the most pronounced warming expected during summer under the aggressive scenarios SSP3-7.0 and SSP5-8.5 (Baastel, 2024a).

Figure 13. Mean Annual Temperature changes under SSP2-4.5 and SSP5-8.5 scenarios



To visualize these projections, figure[79] below presents the mean annual temperature changes under the SSP2-4.5 and SSP5-8.5 scenarios, for 2050 and 2100, illustrating the magnitude and spatial distribution of expected warming across Albania.

Seasonal variations in temperature change are also notable. Figure below presents the projected temperature changes for 2050 across different seasons, highlighting the greater warming expected during summer and autumn compared to winter and spring.

79. SSPx-y, x-refers to the Shared Socioeconomic Pathway (respectively SSP1 to SSP5) and y- to the radiative forcing level (respectively 1.9, 2.6, 4.5, 6.0 and 8.5 W/m2) in 2100

Figure 14. Projected temperature changes for 2050 in different seasons

Projected changes in maximum and minimum temperatures exhibit trends consistent with those of mean temperature. Under the intermediate scenario (SSP2-4.5), annual maximum temperatures are expected to increase by approximately 1.6°C (ranging from 1.1°C to 2.7°C) by 2050, and by 2.5°C (ranging from 1.6°C to 4.1°C) by 2100. The most aggressive scenario (SSP5-8.5) anticipates greater increases in maximum temperatures, particularly during summer months, potentially reaching 2.8°C (ranging from 1.8°C to 4.6°C) by 2050.

Additionally, projections indicate that high-percentile temperatures (95th percentile) are likely to rise at a faster rate than mean temperatures, especially in summer. The concurrent rise in minimum temperatures further suggests that the intensity of heat waves will increase, with both the frequency and duration of such events expected to grow, particularly under the SSP5-8.5 scenario. The number of hot days (defined as days with maximum temperatures ≥35°C) is projected to increase, while the number of cold (minimum temperature <0°C) and very cold days (minimum temperature <-5°C) is expected to decline across all climatic zones under all scenarios. These trends are particularly pronounced under the SSP3-7.0 and SSP5-8.5 scenarios, relative to the reference period.

Absolute maximum and minimum temperatures are projected to rise under all SSP scenarios. Consequently, the return periods of extreme maximum temperatures are anticipated to decrease significantly, while the return periods of extreme minimum temperatures are expected to increase markedly across the Albanian territory.

Precipitation[83]

All SSPs indicate a probable decline in both annual and seasonal precipitation relative to the 1995–2015 baseline across all projected time horizons up to 2100. The high-emission scenario SSP5-8.5 forecasts the most significant percentage reductions in precipitation, with annual and summer values projected to decrease by up to -5.8% (ranging from -32.7% to +17%) and -17.6% (ranging from -56.2% to +16.9%) respectively by 2050. In contrast, the lowest reductions in precipitation percentages are projected under SSP1-1.9 and SSP1-2.6, except during the summer months, where declines of up to -8.1% (-25.7% to +7.8%) and -10.2% (-32.5% to +9.5%) are anticipated.

Figure 15. Seasonal differeneces for precipitation

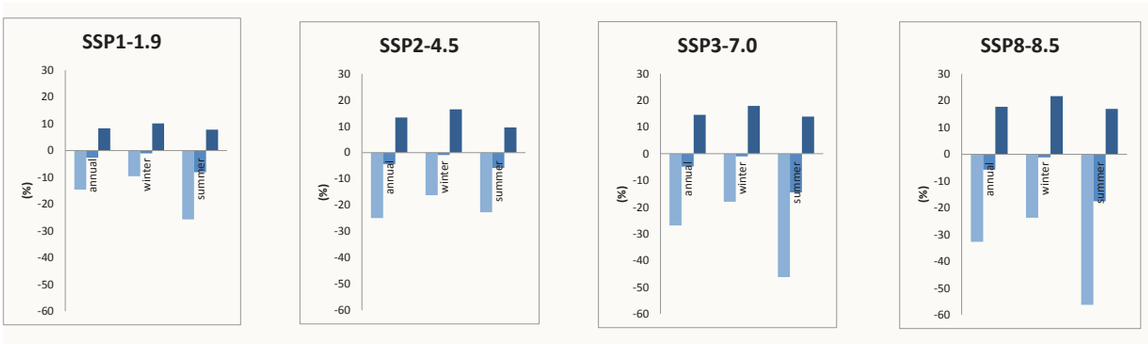
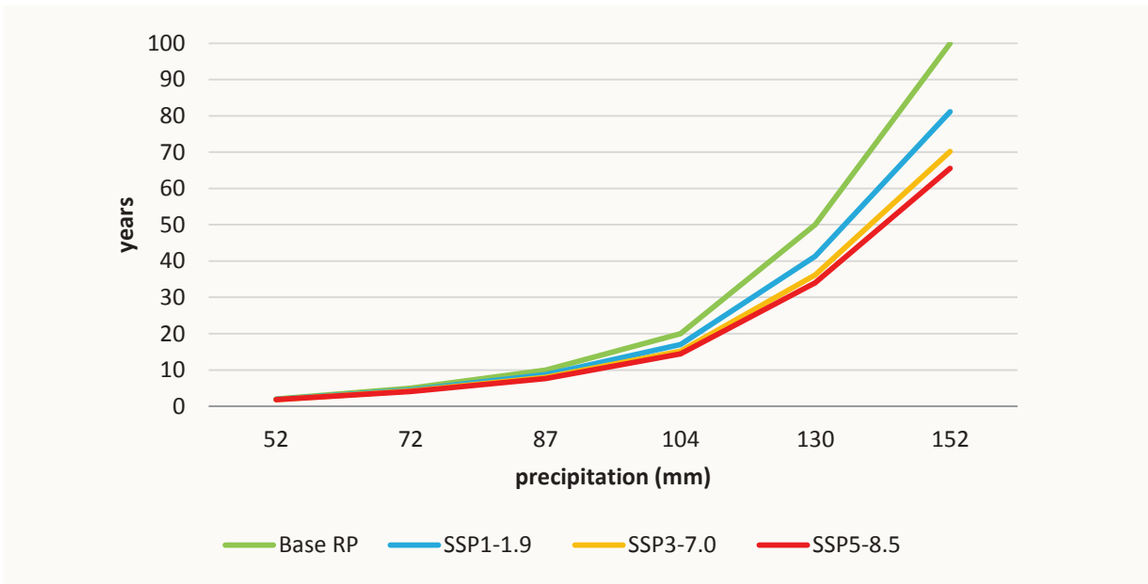


Figure 16. Return periods, maximum precipitation, 1 day



Differences between seasons for precipitation are less distinct. Figure below illustrates these seasonal contrasts, emphasizing the variability and uncertainty of precipitation changes across different regions and time horizons.

The pronounced reduction at the 5th percentile of projected changes suggests a likely increase in drought frequency, while the substantial rise at the 95th percentile indicates a heightened risk of intensified heavy precipitation events. Analyses conducted across various scenarios and time horizons (2030, 2050, 2100), as well as for one to three consecutive days, reveal that the return periods for maximum precipitation levels are expected to shorten throughout Albania. For example, in the Elbasan area, an extreme precipitation event of approximately 145 mm/day, historically occurring once every 100 years, is projected to occur once every 70 years by 2050. This trend is further illustrated in figure below, which presents the projected return periods for one-day maximum precipitation, showing that extreme rainfall events are expected to become more frequent, intense, and of longer duration.

Sea level rise[83]

All SSPs project an increase in sea level. Under the intermediate SSP2-4.5 scenario, sea level rise in the Durrës area is projected to reach approximately 24 cm (ranging from 6 to 30 cm) by 2050, and 65 cm (ranging from 17 to 83 cm) by 2100, relative to the 1995–2015 baseline period.
The projected extent of coastal inundation is shown in figure below, highlighting the zones likely to be affected by a 0.33 m sea level rise, indicated in blue[80].

Other climatic variables[83]

The frequency and duration of cold conditions are projected to decrease, alongside a reduction in the number of heating degree days. Conversely, cooling degree days are expected to increase, reflecting higher energy demand for cooling. These changes are particularly pronounced under the SSP3-7.0 and SSP5-8.5 scenarios.

Overall, there is strong consensus across all scenarios regarding the direction of projected climate changes, despite variations in their magnitude. Specifically, all scenarios indicate an increase in annual temperatures, a reduction in annual precipitation, a rise in sea levels, and a heightened occurrence of extreme events such as intense precipitation, droughts, and heatwaves.

The magnitude of these changes escalates over time, with more significant shifts projected for 2050 compared to 2030, and for 2100 compared to 2050. Moreover, the degree of change is notably greater under more aggressive emissions scenarios.
For hazard severity assessments, it is essential to consider the range of scenarios. The lowest severity ratings are based on the most optimistic scenario (SSP1-1.9) for the year 2030, while the highest severity ratings are derived from the more

Figure 17. Coastal Zones that are likely to be flooded with 0.33m sea level rise

extreme scenarios, typically applying the SSP5-8.5 projections for 2050. This approach highlights both the potential progression of climate hazards and the critical influence of emission pathways on future conditions.

The projected changes align with the observed trends in temperature rise, sea level increase, and the heightened frequency of intense rainfall events.
When comparing observed and projected changes in climate variables in Albania, two primary differences emerge: (i) an intensification of the observed trends in the projections, reflected in higher temperatures, greater sea level rise, and more intense heavy rainfall; and (ii) increased

80. UNDP Prodoc: Advancing Albania's planning for medium and long-term adaptation through the development of a National Adaptation Planning (NAP) process.

Table 2. Summary of observed and projected climate change in Albania[81].

Observed climate trends		Projected climate changes		
Temperature				
Annual temperature: increase but unknown degree	Annual temperature: increase	SSP1-1.9: 2030: 0.8°C 2050: 0.9°C	SSP2-4.5: 2030: 0.8°C 2050: 1.5°C	SSP5-8.5 2030: 1°C 2050: 2°C
Rainfall				
Annual rainfall: no conclusive observations	Annual rainfall: decrease	SSP1-1.9: 2030: 2.4% 2050: 2.7%	SSP2-4.5: 2030: 2.7% 2050: 4.4%	SSP5-8.5 2030: 3.6% 2050: 5.8%
Sea level				
Increase	Increase	SSP1-1.9: 2030: 11cm 2050: 20cm	SSP2-4.5: 2030: 11cm 2050: 24cm	SSP5-8.5 2030: 11cm 2050: 28cm
Extreme weather events				
Frequency and intensity of drought: no information	Frequency and intensity of drought: increase	High reduction at the 5% percentile level (of precipitation).		
Frequency and intensity of heavy rains: no information on frequency, increased intensity	Frequency and intensity of heavy rains: increase	Return periods of days with > 100mm of precipitation:		
		SSP2-4.5: 2050: 16,7		SSP5-8.5 2050: 15,9
Frequency and intensity of heat waves: no information	Frequency and intensity of heat waves: increase	Average number of heat waves/a year:		
		SSP1-1.9: 2030: 3 2050: 3	SSP2-4.5: 2030: 4 2050: 4	SSP5-8.5 2030: 4 2050: 4
Frequency and intensity of very cold days: no information	Frequency and intensity of very cold days: decrease	Number of instances with Tmin < -5°C		
		SSP1-1.9: 2030: 24 2050: 24	SSP2-4.5: 2030: 24 2050: 18	SSP5-8.5 2030: 24 2050: 16

clarity regarding certain variables, particularly annual precipitation, where observations remain inconclusive, but all scenarios consistently project a decline. A third significant distinction lies in the nature of the data: while observations are derived from actual measurements, projections are based on model simulations under specific assumptions, inherently introducing a degree of uncertainty. Nevertheless, it is noteworthy that, for Albania, despite variations in the magnitude of change depending on the scenario, all scenarios generally converge in the direction of the projected changes.[81] To complement the detailed analyses presented above, the following table summarizes Albania's observed and projected climate trends, offering an overview of temperature, precipitation, sea level rise, and extreme events across various scenarios and timeframes.

81. Climate risk assessment of the urban development sector. Albania national adaptation planning: support to filling gaps in climate change adaptation data and risk analysis. Baastel, July 2024.

4.2 Climate vulnerabilities and risks at national level

Albania is exposed to geological hazards (earthquakes, rock falls and landslides), but hydro-meteorological hazards like (flash) floods, droughts, landslides and forest fires are the most frequent hazards, accounting for more than 90% of recorded damages[82]. In 2023, based on its vulnerability and readiness to risks and crises, the ND-GAIN Country Index[83] ranked Albania 80th (between 185 countries assessed)[84]. This compares negatively to other EU countries and also ranked behind the Western Balkan countries[85]. Albania has experienced many flood cases during the last century: According to the Disaster Information Management System (DesInventar), there were 504 registered flood cases in the western lowland during the period 1900-2018[86]. In cases of drought, the 1989-1991 drought stands out, which affected over 3 million people and caused economic losses of about USD24 million; it took almost six years for the Albanian economy to return to pre-drought levels.[87] Droughts also cause severe energy shortages: The 2007 drought decreased production of the Fierza hydroelectric power plant by 33%. All climate induced vulnerabilities will have important consequences for key economic sectors and will present significant obstacles to the country's ongoing development. Conservative estimates of climate related economic damages reach 7% of GDP in the year 2050 alone.[88]

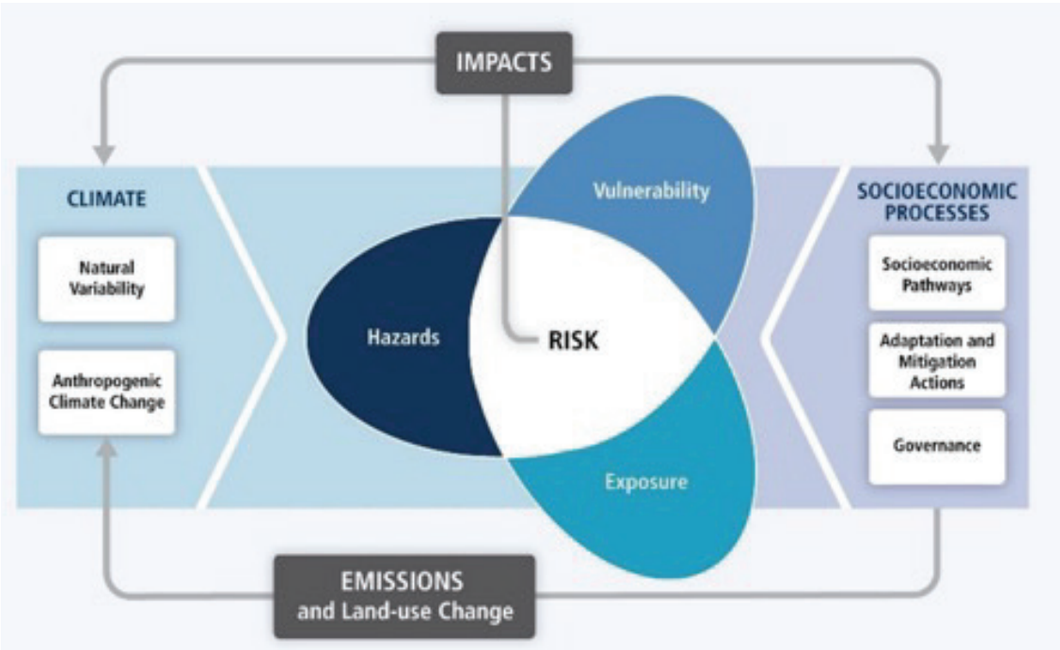
To analyze these vulnerabilities in a systematic manner, the Risk Assessments as undertaken in this NAP used the conceptual framework for climate risk assessments as presented in IPCC's AR6 on Impacts, Adaptation and Vulnerability (2022). This framework considers that risk is the potential for consequences (effects or impacts) on natural and human systems, resulting from the interaction between hazard, exposure, and vulnerability, which in turn is the result of the interaction of the sensitivity or fragility of a system and its capacity to prepare and respond. See below for the conceptual framework and thereafter the definitions. Figure 18 provides a scheme indicating the relationship between climate and socioeconomic processes.

Albania's small size increases the climate risk, in the sense that an extreme event could more easily affect a great proportion of the country than in a larger country. Also, the concentration of its population in the coast (in 2020 around a third of the population lived in coastal areas, which is increasing through domestic migration) increases the climate risk, as a large part of the population and its economic activities along the coast are exposed to flooding and sea level rise. The concentration of its population in one agglomeration (Tirana-Durres, where in 2031 around 35% of Albania's population is expected to live) also increases Albania's climate risk.

Furthermore, the significant economic concentration in some sectors, e.g. the strong reliance on sun-and-sea tourism, road transport for people and maritime transport for goods, and hydropower for electricity generation make the country vulnerable for climate related risks in these important sectors. The vulnerability of the Albanian population to natural disasters is exacerbated by poverty, poor quality infrastructure, unplanned

82. The Fourth National Communication of Albania on Climate Change, 2022
83. The University of Notre Dame - Global Adaptation initiative (GAIN) Country Index summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience.
84. 2023 ND GAIN. Higher number means worse, with higher vulnerability and less readiness.
85. Montenegro 56th, North Macedonia 59th, Serbia 76th and Bosnia and Herzegovina 79th
86. M. Bogdani. "Report on impact of current climate variability and extremes on the water resources (groundwater, water supply) in the DMRD".
87. The Future of Water in Agriculture in Albania: A Broad Sector Rethinking. World Bank. 2014
88. Albania—Country Climate and Development Report. World Bank. 2024

Figure 18. Relationship between climate and socioeconomic processes



construction and a variety of human-influenced environmental factors, from rapid deforestation, poor management of watersheds, increased soil degradation to environmental pollution[89].

Gender dimensions also play a role in climate vulnerability in Albania. Survey findings demonstrated that 39% of respondents acknowledge differences between men's and women's abilities to react to climate change, with 53% asserting that men are more capable of addressing climate challenges[90].

This is compounded by the fact that men predominantly make investment and financial decisions within households, limiting women's ability to implement adaptation measures, especially in rural areas and for women involved in agriculture[91]. Also, women's mobility is often restricted compared to men, which limits their adaptive capacity by constraining their ability to access markets, services and alternative economic opportunities during climate-related disruptions.

Elderly, infants, people with disabilities or illnesses, and poor and marginalized groups are also disproportionately at risk to climate change. These risks include heightened vulnerability to respiratory illnesses, increased susceptibility to infections during post-disaster cleanup efforts, and greater sensitivity to extreme temperatures.

89. National Strategy for Disaster Risk Reduction and action plan 2023–2030. Ministry of Environment, 2023.
90. Fourth National Communication (2022)
91. INSTAT, 2023

Table 3. Risk assessment: concepts and definitions

Concept	Definition
Hazard	The potential occurrence of a natural or human-induced physical event or trend that may cause due loss, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service delivery, ecosystems, and resources.
Exposure	Presence of people, species or ecosystems, environmental functions, services and resources, infrastructure or economic, social, or cultural assets in places and environments that could be negatively affected by changes in climate variables.
Vulnerability	Predisposition to be adversely affected. Vulnerability encompasses sensitivity to harm and adaptive capacity.
Sensitivity	The degree to which a system may be adversely or beneficially affected by a given exposure to climate change. It is determined by natural and/or physical attributes of the system.
Adaptative capacity	Means or lack of means to adapt to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or take advantage of beneficial opportunities. In some natural systems, human intervention may facilitate adaptation to the expected climate and its effects. Adaptive capacity refers to factors related to the availability of information and knowledge, the existence of robust and coordinated institutional structures, the existence of human, technological and infrastructural resources, and the availability of financial resources.
Impact	Consequence of a hazard taking place. Effect on natural and human systems that occurs due to extreme weather and climate events and climate change (e.g., effects on lives, livelihoods, health, ecosystems, economies, societies, cultures, services, and infrastructure).
Risk	The potential for consequences to occur when something of value is at stake and when the outcome is uncertain. The term risk is often used to refer to the potential adverse consequences of a climate-related hazard, or of adaptation or mitigation responses to that hazard, on lives, livelihoods, health and well-being, ecosystems and species, economic, social, and cultural assets, services (including ecosystem services) and infrastructure. Risk is usually represented as the probability of occurrence of hazardous events or trends multiplied by the impacts if these events or trends occur. Risk is the result of the interaction between vulnerability, exposure, and hazard.

4.3 Climate Risks Assessments at Sectoral Level

The NAP Project undertook detailed Climate Risk Assessments (CRA)[92] for 5 identified priority sectors (agriculture, tourism, energy, transport and urban development)[93].Current Risks in all sectors were assessed for Increased Temperature, Rainfall Intensity and Sea Level Rise (SLR). Future Risks focused on: Increased temperature, Decreased Precipitation, SLR and Droughts. This gave the following combined Risk Assessments for the different priority Sectors and their identified subsectors, see below.

Agriculture

Agriculture is one of the key socio-economic sectors of Albanian economy and one of the sectors considered most vulnerable to climate change. Changes in temperature and precipitation patterns could reduce crop yields, while soil degradation and increased water demand for irrigation pose additional challenges. Pastures, forests, genetic resources, species and breed, land and soil fertility, water resources and their productivity are all under the direct impacts of climate change. Rising temperatures, reduced precipitations, change of precipitation regime, seawater intrusion / salinization of coastal aquifers[94], extreme weather events, as well as the related phenomena like forests fires, floods, droughts, and salinization, infestations and new diseases that appear as a result of the changed climate circumstances, all affect agriculture[95]. Current Risks and Future Risks in agriculture as assessed in the CRA for the different considered Agro-Ecological Zones (AEZ) and subsectors were rated as follows[96]:

Table 4. Current and future climate risks in agriculture sector

Agriculture aez's and subsectors	Overall	
	Current Risk	Future risk (best – worst case scenario[97])
AEZ		
Lowland	Very high	Very high
Intermediate Hill	High	High – Very high
North and Central mountains	Low	Low - Moderate
Southern highlands	Moderate	Moderate - High
Subsectors		
Temporary crops	High	Very High
Permanent crops	Moderate	Moderate – Very high
Bovine and horses	Moderate	High – Very high
Pigs and poultry	Low	Low - Moderate
Sheep and goats	Low	Low - Moderate

92. The assessment used the conceptual framework for climate risk assessments as presented in IPCC's AR6 on Impacts, Adaptation and Vulnerability (2022).
93. Climate risk assessment of the agricultural sector; support to filling gaps in climate change adaptation data and risk analysis. Prepared under UNDP NAP Project. 2024
94. Present in 5/12 coastal municipalities: Shkoder, Lezhe, Fier, Vlore, Himare as indicated in the Fourth National Communication of Albania to UNFCCC (2022)
95. The Fourth National Communication of Albania on Climate Change, 2022
96. Climate risk assessment of the agricultural sector; support to filling gaps in climate change adaptation data and risk analysis. Prepared under UNDP NAP Project. 2024
97. Best Case Scenario: SSP1-1.9 projections by 2030; Worst Case Scenario: SSP5-8.5 by 2050.

While concerns on current risks in agriculture can be mixed, future risk is consistently seriously concerning and even alarming in the worst-case future scenario. Lowland is the **AEZ** at very high risk both in the present and the future, with the intermediate hill zone the second AEZ most at risk. The North and Central Mountains is the least at risk AEZ; this AEZ might benefit from a longer growing season for both summer and winter crops which, potentially, can offset the increase in water and heat stress expected during summer months. In the very long run, however, this benefit might again be threatened by the continuous increase of water and heat stress.

By **subsector**, crops are most at risk, both currently and in the projected future, depending on the type of crop, SSP and timeline, with risks becoming very high in the worst scenario. Temporary crops are in general at greatest risk, especially in the short-term. In the livestock subsectors risks are low to very high, with bovine and horses most at risk, with their risk becoming very high under the worst climate scenario. Pigs, poultry, sheep and goats have lower risk ratings, becoming only moderate in the worst scenario.

Tourism

Tourism is a key economic sector and quite vulnerable to climate change. Increased occurrence of river floods due to more frequent and longer heavy rains[98], temperature extremes (especially heat), Sea Level Rise (SLR) and strong winds have already impacted tourism sector in Albania. Coastal tourism, the major touristic attraction in the country, is particularly vulnerable to flooding and beach erosion, and changes in temperature and precipitation patterns may also affect mountain and rural tourism. Other factors that could affect the attractiveness of Albania's tourist offer because of climate change are: Damage to cultural heritage; Destruction of biodiversity and natural landscapes, both marine and coastal[99]. On a potential favourable note, with longer warm periods, the "sun and sea" tourism prevalent in the coastal area may extend beyond the now popular months of July and August, thereby spreading out the season and economic benefits.[100] Current Risks and Future Risks in tourism as assessed in the CRA for the different subsectors of sun-and-sea tourism; ecotourism; city and art tourism; and cultural heritage tourism, were rated as follows[101]:

Table 5. Current and future climate risks in tourism sector

Tourism subsectors	Overall	
	Current risk	Future risk (best – worst scenario)
Sund-and-Sea	Low	High – Very High
Ecotourism	Moderate	Very High – Very High
Cities & Art	Low	Moderate - High
Cultural Heritage	Moderate	Moderate – Very High

98. In 6 out of 12 coastal municipalities (Lezhe, Kurbin, Durres, Rrogozhine, Fier, Vlore)
99. NDC, 2021
100. The Fourth National Communication of Albania on Climate Change, 2022
101. Climate risk assessment of the tourism sector; support to filling gaps in climate change adaptation data and risk analysis. Prepared under UNDP NAP Project. Ministry of Environment, 2023-2025.

Risk ratings for tourism increase in time from the current risk to the future risk, even to alarming in the worst-case scenario. By subsector, ecotourism is most at risk, while in the best-case scenarios the cities and art and cultural heritage segments are the least at risk. However, 'less at risk' does not mean 'not at risk', as, for example the projected sea level rise does have the potential to significantly damage coastal cities (urban tourism) and coastal cultural heritage sites (cultural tourism), but less so other in-land sites. Some differences in risk ratings can also be explained by how the subsectors already benefited from the ongoing development in Albania and are expected to further benefit and increase its resilience from future development.

Energy

Changing precipitation, water availability and evapotranspiration will affect the availability of hydropower which produces 96% of the country's electricity. Climate change-induced variability in river flows can reduce hydropower output, threatening energy security. Rising temperatures also increase energy demand for cooling, placing additional pressure on the energy system. Hydropower infrastructure can be damaged during heavy rainfall events, including the distribution network, that could further aggravate electricity losses.

Current Risks and Future Risks in the energy sector as assessed in the CRA for the different considered subsectors (oil, gas & coal; hydropower; fuelwood; wind and solar; transmission and distribution) were rated as shown in table 6 below.[102]

Risk ratings in energy increase from the current risk to the future risk, up to significantly when considering the worst-case scenario. While concerns on current risks can be Low to Moderate, future risks are alarming especially in the worst-case scenario which is very much linked to decreasing water availability.

The transmission and distribution subsector, fuelwood and hydropower subsectors are most at risk. The wind and solar power subsector is least at risk, though as of now these only represent a very small proportion of energy production (1% in 2023).

Table 6. Current and future climate risks in energy sector

Energy subsectors	Overall	
	Current risk	Future risk (best – worst case scenario)
Oil, gas & coal	Very low	Moderate – Very high
Hydropower	Low	Moderate – Very high
Fuelwood	Low	Moderate – Very high
Wind and solar	Very low	Low - Moderate
Transmission and distribution	Moderate	Moderate – Very high

102. Climate risk assessment of the energy sector; support to filling gaps in climate change adaptation data and risk analysis. Prepared under UNDP NAP Project. Minsitry of Environment, 2024.

Table 7. Current and future climate risks in transport sector

Transport subsectors	Overall	
	Current risk	Future risk (best - worst case scenario)
road transport	Low	Moderate – Very high
Railway transport	Low	Low – Very high
Maritime transport	Very low	Moderate – Very high
Air transport	Very low	Low - Moderate

Transport

Road and rail transport are prone to climate related disasters (e.g. torrential rain, storms and extreme wind, sea surges, flooding, landslides, heatwaves and heat related degradation) that affect in multiple ways their infrastructure, reliability and safety[103]. Current Risks and Future Risks in the transport sector as assessed in the CRA for the different considered subsectors (road, railway, maritime and air) were rated as shown in table 6.[104]

Risk ratings for transport increase from the current risk to the future risk, and significantly when considering the worst-case scenario risk ratings, and even with some risks as alarming. An important factor which led to very high-risk ratings in the worst-case scenario is the projected increase in intensive precipitation and the damages it can bring to the transport subsectors (especially road and railway) through erosion, floods and landslides. In addition to intensive precipitation, annual average temperature and extreme heat is assessed to affect mostly the railway and maritime transport subsectors, while the projected sea level rise affects mostly the maritime transport subsector. By subsector, the road, railway and maritime subsector are most at risk, while the air transport subsector is the least at risk. The railway transport subsector, however, only represents a very small proportion of overall transport.

Urban development

Extreme weather events, including heat waves, prolonged droughts, heavy precipitation and flooding, pose significant challenges to urban infrastructure, water supply, and waste management systems. Impacts of climate change on urban areas are disproportionally high due to a concentration of population and assets – especially in high-risk prone areas – in combination with hazard-amplifying conditions (e.g., increased runoff resulting from soil sealing, sea level rise and intrusion, urban heat island effects, etc.)[105]. On a number of occasions, heavy precipitation and floods in Tirana have made transport, electricity, water supply infrastructure and small scale industry highly vulnerable [106]. This may cause economic hardship, but also increase of diseases and public health challenges[107] to an increasing share of urban population in Albania

103. Stocktaking Report for the NAP process in ALBANIA. Prepared under UNDP NAP Project. December 2022.
104. Climate risk assessment of the transport sector; support to filling gaps in climate change adaptation data and risk analysis. Prepared under UNDP NAP Project. Ministry of Environment, 2024.
105. First Mediterranean Assessment Report (MAR1)
106. City of Tirana, Adapting our City to a Changing Climate: Vulnerability Assessment and Adaptation Action Plan for Tirana, 2015.
107. First Mediterranean Assessment Report (MAR1)

Table 8 . Current and future climate risks in urban development sector

Urban climatic zones and subsectors	Overall	
	Current risk	Future risk (best - worst case scenario)
Climatic zones[108]		
MFZ	Low	Very High - Very High
MHZ	Low	Very High - Very High
MPMZ	Low	High - Very High
MMZ	Low	High - Very High
Subsectors		
Residential	High	Very High - Very High
Social	High	Very High - Very High
Productive	Low	Very High - Very High
Supply Network	Low	Very High - Very High

(projected at 78.2% by 2050). Current Risks and Future Risks in the urban development Sector[109] as assessed in the CRA for the different considered climatic zones and subsectors (residential, social, productive, supply network) were rated as shown in table 8.

In the four urban climatic zones the current risk increases in the future, with mostly "Very High", under both the best-case and worst-case scenarios. Especially the most populated cities (Tirana, Durres, Vlore, Fier, Shkoder, Elbasan) and the most urbanized area of the country (the coastal belt) have "Very High" future risk ratings. Other cities have a "High" future risk, under the best-case scenario, and "Very High", under the worst-case scenario. For all urban subsectors (Residential, Social, Productive and Supply) there is an increase to "Very High Risks" in the future.

Cross-sectoral

This cross-sectoral assessment assesses the national, cross-sectoral risks of the country, and uses the summary risk rating tables of the sectoral reports[110].

In summary, the assessments show that national climate risks increase in Albania with time and the pessimism of the scenario. The **urban, agriculture and tourism are the sectors with the highest risk ratings**, with energy and transport having lower risk ratings (applying both to current and future risks). The main reason for this is the sensitivity of agriculture and tourism to changes in climate variables, while in the case of the urban sector the key reason is its sensitivity to increased temperatures and heat waves given the urban heat island effect, as well as the significant concentration of the urban sector on the coast.

108. MFZ: Mediterranean Field Zone; MHZ: Mediterranean Hilly Zone; MPMZ: Mediterranean Pre-mountainous Zone; MMZ: Mediterranean Mountainous Zone

109. Climate risk assessment of urban development; support to filling gaps in climate change adaptation data and risk analysis. Prepared under UNDP NAP Project. Ministry of Environment, 2023-2025.

110. Cross-Sectoral Risk Assessment. Prepared under UNDP NAP Project. Ministry of Environment, 2023-2025.

Table 9. Current and future cross-sectoral climate risks

Subsector	Current risk	Future risk (best – worst case scenario)
agriculture		
Temporary crops	High	Very High - Very high
Permanent crops	Moderate	Moderate – Very high
Bovine and horses	Moderate	High – Very high
Pigs and poultry	Low	Low - Moderate
Sheep and goats	Low	Low - Moderate
Tourism		
Sun-and-sea	Low	High - Very high
Ecotourism	Moderate	Very high – Very high
Cities & art	Low	Moderate - High
Cultural heritage	Moderate	Moderate – Very High
Energy		
Oil, gas & coal	Very low	Moderate – Very high
Hydropower	Low	Moderate – Very high
Fuelwood	Low	Moderate – Very high
Wind and solar	Very low	Low - Moderate
Trans. and distr.	Moderate	Moderate – Very high
Transport		
Road transport	Low	Moderate – Very high
Railway transport	Low	Low – Very high
Maritime transport	Very low	Moderate – Very high
Air transport	Very low	Low - Moderate
Urban		
Residential	High	Very High - Very High
Social	High	Very High - Very High
Productive	Low	Very High - Very High
Supply Network	Low	Very High - Very High

Regarding future risks: temporary crops, ecotourism and urban development related subsectors are the most at risk. The subsectors least at risk are pigs and poultry, sheep and goats, wind and solar energy, and air transport, all with a moderate risk.

This assessment needs to be combined with an assessment of the relative importance of the sectors in Albania. **Climate risks to urban development** are key since, after a strong urbanization process, almost two-thirds (62%) of the country's population lived in urban areas in 2020, and this is projected to increase. Moreover, cities are economic hubs, concentrating the most important economic activities of the country, including services and industry. Climate risks to the **tourism sector**, and particularly the sun-and-sea tourism subsector, are also of particular economic importance for Albania. The high risk of **agriculture** also constitutes a concern from the employment and food security points of view and especially in large rural areas of the country.

Risks related to different climate hazards interact and the combination of these risks, or **compound or complex risks**, might be more severe than when they occur alone. Also, sectors and subsectors are interconnected; risks in one sector imply risk for other sectors, e.g. urban development and transport.

Albania is also exposed to **transboundary climate risks**, i.e. risks related to climate change impacting networks and resources shared with other countries, in particular tourism, transport, energy. If compound and transboundary risks are considered, Albania's climate risk can only be considered high or very high.

Several factors increase Albania's overall climate risk. Its small size, concentration of its population in the coastal area and main agglomerations, the strong reliance on sun-and-sea tourism, road transport and hydropower make the country particularly vulnerable. Some population groups are especially at risk due to their age, medical condition, dependency, location, economic situation, gender, or a combination of these factors. People living in marginalized neighbourhoods, often in flood-prone areas along riverbanks, are especially at risk both regarding heat waves and heavy rains. And women tend to be more vulnerable to climate hazards than men. Without social protection systems integrating climate change adaptation and safety nets, climate risks can trigger tipping points in these vulnerable communities. Inadequate environmental management, including deforestation, poor management of watersheds, and inadequate waste management, also increases climate risks across sectors. Shortcomings in climate legislation, human capacities, data and equipment may further aggravate the climate risk of the country and its adaptation and disaster management efforts.

Some factors may on the other hand reduce Albania's climate risk. The significant diversity of its ecosystems and the hilly nature of the Ionic coast contribute to its resilience. Moreover, a projected increase in GDP and GDP per capita will increase the country's adaptive capacity. Implementation of European regulations, strategies and plans contribute to better mainstreaming of climate change adaptation, increase the country's adaptive capacity and reduce its climate risks[111].

4.4 Climate Vulnerabilities and Risks at Local Level

The majority of Albania's coastline is along the Adriatic Sea, characterized by a flat and low-lying **coastal area**, which represents 11.78% of the

111. Cross-Sectoral Risk Assessment. Prepared under UNDP NAP Project. Ministry of Environment, 2023-2025.

overall surface of Albania, and is inhabited by 1/3 of the total population of the country. This makes the coastal systems, including human settlements, particularly susceptible to climate change and vulnerable to sea-level rise and changes in intensity and frequency of flooding.

The NAP Project undertook the development of **"Local Adaptation Plans"** (LAPs) in 8 municipalities[112] from 2022-2024. The LAPs were developed under the guidance of the municipal technical staff through data collection, capacity building, identification of priority adaptation measures, and development of the adaptation plan to address the negative impacts of extreme weather events and ensure long-term investments. Key risks and vulnerabilities by municipality include[113]:

- **Durrës:** Hotter, drier summers, wetter winters, and extreme weather threaten biodiversity, soil health, and landscapes, with potential degradation of soil carbon storage.

- **Elbasan:** Increased temperatures, intense rainstorms, and risks to biodiversity and water resources threaten tourism, agriculture, and natural assets, with erosion, landslides, and water shortages being significant concerns.

- **Fier:** The municipality is vulnerable to rising temperatures and frequent intense storms, with flooding posing the greatest risk across all sectors, projected to worsen over time.

- **Gjirokastër:** Hotter summers, wetter winters, and extreme weather threaten municipal operations, natural resources, and assets critical to tourism and local industries.

- **Krujë:** Few opportunities identified, with vulnerabilities tied to rising temperatures, intense rainstorms, and threats to biodiversity, soil health.

- **Kukës:** Primarily at risk from flooding and intense rainfall, with rising temperatures leading to drier summers and wetter winters affecting all sectors.

- **Përmet:** Pressing issues include flooding, heatwaves, and reduced snowfall, impacting infrastructure, wildlife, and public health, with worsening risks due to intense rainfall.

- **Vlora:** Vulnerable to rising temperatures, intense rainstorms, and flooding, which threaten all sectors and require, among other adaptations enhanced infrastructure and air conditioning.

- A GIS-based assessment of climate hazards, exposure and socioeconomic vulnerability in Albania used flood scenario data to reproduce risk maps combining flood probability with impact intensity. The assessment´s results revealed that 60 out of a total of 61 municipalities are impacted by 100-year river floods, while 17 municipalities are exposed to sea level rise scenarios of 33 cm, 90 cm, and 100 cm.

112. In the localities of: Durres, Elbasan, Fier, Gjirokaster, Kruje, Kukes, Permet, Vlora.

113. Cross-sectorial evidence-based criteria for prioritization framework identified; prioritization process in place and applied to adaptation options. Prepared under UNDP NAP Project. Ministry of Environment, 2023-2025.

05

Adaptation measures, assessments and priority actions in Albania

5.1 Adaptation measures at sectoral level

A collection of 151 "Adaptation Measures" for the five priority sectors and including cross-sectoral measures was identified under the NAP process[114]. These were based on adaptation measures or actions already identified in Albania's relevant policy framework[115], or some internationally, and these were further discussed and analyzed with sector experts.

The identified adaptation measures in the **agriculture Sector** are divided into nine subsections which are (i) General (4 specific adaptation measures), (ii) Management of pastures (5), (iii) Fire management (2), (iv) Conservation of local crop and livestock genetic resources, species and breeds (6), (v) Promotion of heat, drought and salt resistant/tolerant species/ varieties (2), (vi) Management of invasive species for agriculture (2), (vii) Protection of agricultural land from flooding, both from rivers and sea level rise (4), (viii) Management of best and climate smart agriculture practices (7) and (ix) Assessment of water used in the agriculture sector and water efficiency measures (9). This makes a total of 41 identified adaptation measures in agriculture

For **forestry**, a total of 30 adaptation measures are identified in the following sub-sections: (i) General (6 measures), (ii) Management of forests (5), (iii) Monitoring of Forest's health (5), (iv) Reforestation, afforestation and technological measures (14).For the **tourism Sector** the total of 24 identified measures are divided into the following sub-sections: (i) General (6 measures), (ii) Climate-proofing existing buildings and infrastructures (4), (iii) Reestablishing a green belt along the coast to protect land from erosion and for recreation purposes (5), (iv) Management of waste generated by tourism (5) and (v) Measures including mountain areas (4).

For the **energy sector** the 22 identified measures are: (i) General (4 specific measures), (ii) Resource mobilization to implement the energy efficiency plan (8), (iii) Composting including energy recovery from agricultural residues – biomass (3), (iv) Assessment of the production and consumption of energy (6) and (v) Other (1).

For the **transport sector** the 10 identified measures are divided into: (i) General (4 specific measures), (ii) Diversification of transport sector (5) and (iii) Other (1).

For the **urban development sector**, the 13 identified measures are divided into: (i) General (4), (ii) Climate-proofing existing buildings and infrastructures (4) and (iii) Promote nature-based solutions in urban environments (5).

Three general key **cross-sectoral areas** for adaptation measures are identified, being: (i) enhanced coordination on climate change (with 10 specific adaptation measures), (ii) improvement of data and information systems (integrated in sectoral measures), and (iii) ecosystem-based adaptation and nature-based solutions (integrated in sectoral measures).

5.2 Adaptation measures at local level

Separately, and as required by the Climate Law, the following adaptation measures were identified in the development of Local Adaptation Plans in 8 Municipalities[116], and listed below as outlined per municipality[117] and type of adaptation actions:

114. Identification of adaptation measures. Albania national adaptation planning: support to filling gaps in climate change adaptation data and risk analysis. Prepared under UNDP NAP Project. Ministry of Environment, 2023-2025.

115. E.g. NDC; NCCS 2020-2030; Strategy on agriculture, Rural Development and Fisheries 2021–2027; National Strategy for Sustainable Tourism Development; Integrated cross-sectorial plan for the coastal belt; Adaptation action plan for Tirana; Draft National Energy and Climate Plan; Strategy of transport & Action Plan (2016 – 2020), etc.

116. Local Adaptation Plans for 8 municipalities. Prepared under UNDP NAP Project. Ministry of Environment, 2023-2025. They described the local circumstances and climate risks, and identified adaptation measures, that were subsequently assessed and prioritized.

117. Durres, Elbasan, Kukes, Fier, Gjirokaster, Vlora, Kruje, Permet

Table 10. Identified adaptation measures in 8 municipalities

Municipality / Type of adaptation measures	Durres	Elbasan	Fier	Gjirokaster	Kruje	Kukes	Permet	Vlora	Total
Policy and governance	32	26	15	17	15	15	18	21	159
Scientific, technical and societal capacity	21	17	11	10	10	16	10	12	107
Climate change delivery	31	14	12	12	8	18	14	13	122
Adapting the supporting natural environment	31	10	7	10	7	16	16	16	113
Strengthening disaster risk management	17	11	10	11	10	3	12	11	85
Governance, monitoring and evaluation	14	15	4	13	13	13	13	12	97
TOTAL OF ADAPTATION MEASURES	146	93	59	73	63	81	83	85	683
TOTAL OF PRIORITY ADAPTATION MEASURES[118]	43	45	47	45	44	41	40	51	356

On average some 85 adaptation measures and 45 "priority measures" were identified per municipality.

- Common adaptation measures mentioned for all municipalities were:
- Strengthening the legal and institutional framework.
- Increasing financing for climate adaptation.
- Establish a Steering Group with appropriate staff representatives from all key departments to ensure the successful implementation of the actions of the Local Action Plan.
- Enhancing scientific, technical, and social capacity aimed at generating scientific evidence

118. As indicated in the Local Adaptation Plans of the municipalities, prepared under UNDP NAP Project. 2024

to support decision-making, identifying high-risk areas and raising awareness.
- Undertake awareness campaigns and develop capacities around the need for climate change adaptation, including the role of the natural environment.
- Additionally, in different municipalities the following were also mentioned:
- Update or undertake new vulnerability and risk assessments
- Protecting housing infrastructure, municipal assets, and properties from damage and further degradation due to climatic factors.
- Developing "bioengineering" or "Nature Based Solutions" to protect environments from erosion.
- Infrastructure works to combat erosion and protect vulnerable environments.
- Strengthening local disaster risk management
- Revision of or developing specific plans, e.g. Forest Management Plan in Kukës, surface water management plan in Përmet, etc.

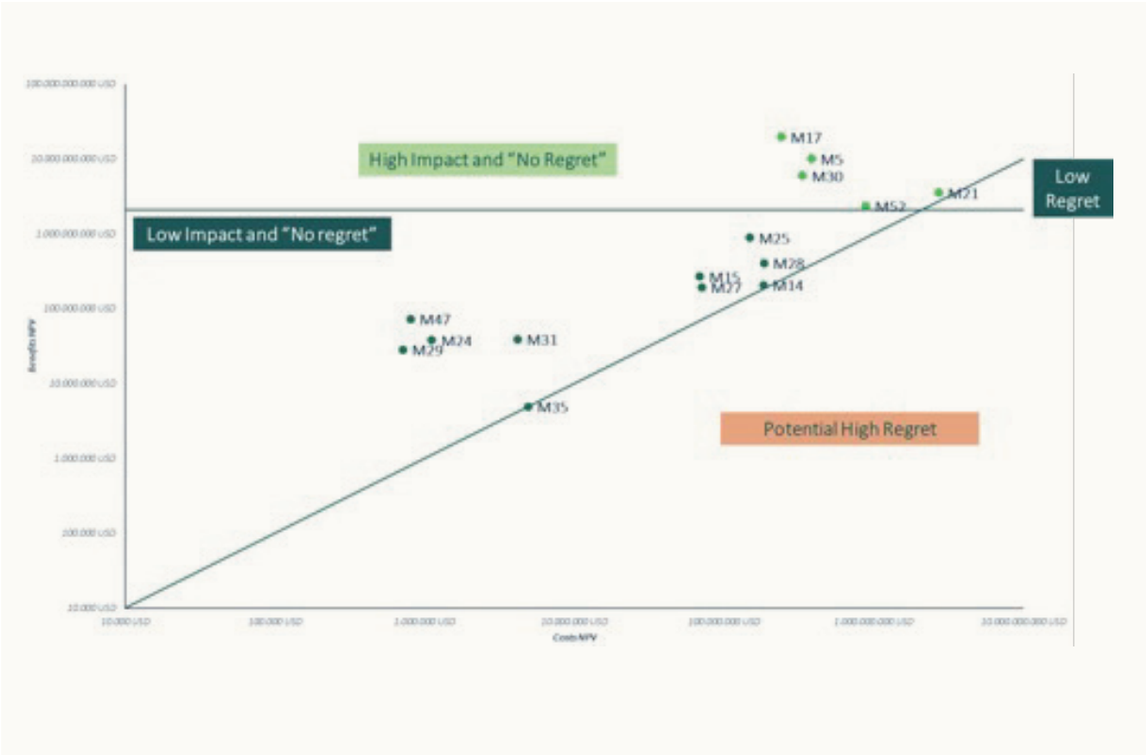
5.3 Adaptation assessment and priority adaptation actions in Albania

A further prioritization of the initially identified adaptation measures was undertaken[119]. A prioritization process through Multi Criteria Analysis (MCA) was applied, that included criteria for Feasibility (financial, technical, institutional), Social co-benefits (social acceptability, gender equality and benefits for vulnerable groups) and Strategic Alignment (alignment with national strategies, vulnerability reduction potential, environmental sustainability and mitigation co-benefits). A total of 66 priority measures were subsequently identified in the different sectors (agriculture and forestry: 21; tourism: 11; energy: 8; transport: 7; urban development: 9; cross-sectoral: 10). Out of these 66 measures, 21 that were considered "Green"[120] and "Grey"[121] investment measures, were subjected to a Cost Benefit Analysis (CBA)[122] for the period 2026-2036[123], that assessed the economic efficiency of each measure through the calculation of cost-benefit ratios (CBR[124]) and Net Present Value (NPV[125]). This did not include the "soft"[126] capacity development measures for which a CBA is difficult to establish (especially the Benefits). This CBA process included:

- Stakeholder consultations to gather detailed costing information and geographic targeting.
- GIS analysis and reference to national strategies to estimate the scope and scale of interventions when data were incomplete.
- Benefit and cost transfers from similar national or regional interventions, in the absence of primary data.
- A sensitivity analysis using varied discount rates to account for uncertainty.

119. Cross-sectorial evidence-based criteria for prioritization framework identified; prioritization process in place and applied to adaptation options. Prepared under UNDP NAP Project. Ministry of Environment, 2023-2025.
120. "Green" measures rely on nature-based solutions, such as ecosystem restoration, reforestation, or sustainable land management, that enhance climate resilience while providing co-benefits like biodiversity protection and ecosystem service delivery
121. "Grey" measures involve engineered or technological solutions, such as resilient infrastructure, drainage systems, or early warning systems, designed to reduce physical exposure to climate risks
122. Cross-sectorial evidence-based criteria for prioritization framework identified; prioritization process in place and applied to adaptation options. Prepared under UNDP NAP Project. Ministry of Environment, 2023-2025.
123. Also included some longer time horizons until 2050
124. CBR dividing the total discounted benefits by the total discounted costs to assess the economic viability.
125. NPV: difference between the present value of benefits and the present value of costs over the period, i.e. by taking the annual social costs and benefits of the measure and updating them financially by using discount rates
126. For further detail about the definition of "soft", "green" and "grey" measures see section 6 below: NAP Implementation Plan.

Figure 19. Prioritization of Adaptation Measures by Impact and Regret Potential



Overall, the analysis demonstrated that the portfolio of proposed measures tends to generate positive economic returns, with most interventions showing positive NPVs and strong Cost-Benefit Ratios. Some measures fall into the **"high impact and no regrets"** category.

These measures offer significant net benefits that clearly outweigh their costs and are considered strategically optimal for implementation due to their strong cost-benefit ratios and robustness under uncertainty. Other measures are classified as **"low impact and no regrets"**, indicating that their implementation remains advantageous even in the absence of severe climate impacts, see also Figure 19 below, and Implementation Plan Table 10 in the next chapter for details on the adaptation measures.

The CBA analysis highlighted several limitations that must be considered and weighed for its interpretation:

- Data Gaps and Analytical Constraints: A number of measures could not be fully assessed due to missing data.
- Low or Negative Economic Performance: These results raise concerns about its economic viability under current assumptions.
- Sensitivity to Key Parameters: Some measures show vulnerability to fluctuations in input parameters, which should be further reviewed

Some of the **recommendations** ensuing from the CBA are:

- Short term: Prioritize the implementation of high-performing, low-risk measures with well-substantiated CBAs

- Medium term**:** Refine cost and benefit estimations, particularly for those measures currently considered inconclusive or negative.

- Long term**:** Institutionalize the integration of economic analysis in the design and appraisal of adaptation interventions, including the development of national guidelines and tools.

- This comprehensive prioritization exercise, including MCA and CBA, led to final prioritized and costed adaptation measures in the Implementation Plan, see the next chapter.

06

NAP implementation plan

The implementation of the priority adaptation measures requires a well-considered implementation approach, with clearly defined activities, timelines, budgets, roles and responsibilities and suitable monitoring indicators among other aspects. For this purpose, as part of the NAP process, a NAP Implementation Plan was prepared and validated to establish a coherent and actionable framework to guide the delivery of priority climate change adaptation measures in Albania across the key sectors: agriculture and forestry, energy, tourism, urban development, transport, and cross-sectoral domains.[127]

The Implementation Plan is designed to transform sectoral adaptation priorities into concrete interventions that are technically feasible, financially viable, and socially inclusive. The Plan contributes to the reduction of climate-related vulnerabilities (both sectoral and territorial) while enhancing the country's institutional capacity, inter-institutional coordination, and long-term adaptive resilience. It fosters a collaborative environment that enables all relevant actors (governmental, municipal, non-governmental, private sector) to engage effectively in the implementation process, ensuring that adaptation measures respond to both national priorities and local needs.

To achieve this purpose, the plan is structured to:

1. Establish the institutional and operational conditions for effective implementation, by defining roles and responsibilities at national and local levels.
2. Strengthen multi-level and cross-sectoral collaboration and coordination among ministries, public agencies, municipalities and other key stakeholders to ensure alignment, coherence, and ownership in the implementation of adaptation measures.

This ensures that adaptation measures are delivered effectively, coherently and sustainably across all sectors and levels of governance.

6.1 Priority measures under the NAP

To facilitate the characterization of the 66 adaptation measures, these were split into three categories based on the approach they employ for climate change adaptation**:**

- **Soft measures** refer to non-structural interventions such as research and risk assessments, capacity building, communication and awareness activities, governance and coordination mechanisms, planning and regulatory instruments, and financial or incentive-based tools. These measures aim to strengthen institutional frameworks, capacities and create enabling conditions for adaptation ("adaptive capacity"). Soft interventions account for **the largest number of measures** (45 out of 66 measures); this underscores the critical role of governance, capacities and knowledge-based systems in effective adaptation.

- **Green measures** leverage the restoration, conservation or sustainable management of ecosystems to reduce climate risks and deliver multiple co-benefits, including biodiversity enhancement and ecosystem service provision. Examples include ecosystem restoration, reforestation, agroecological tech-

127. Implementation Plan for prioritized and costed adaptation actions. Prepared under UNDP NAP Project. Ministry of Environment, 2023-2025.

niques, and bioengineering solutions, sometimes classified as nature-based solutions or ecosystem-based adaptation. Green interventions represent a total of **15 interventions.**

- **Grey measures** involve engineered or technological solutions designed to reduce physical exposure to climate hazards. These include resilient infrastructure, drainage and water retention systems, seawalls, physical early warning systems, etc. Priority grey interventions are fewer in number with **6 interventions** in the Implementation Plan, as these are capital-intensive but essential for safeguarding infrastructure and critical services against extreme climate events.

- In paralell, the 66 priority adaptation measures are split per sector to address specific vulnerabilities. These are complemented with a category of "cross-sectoral measures" that covers interventions yielding adaptation benefits for all sectors, and/or facilitating the overall coordination and execution of the NAP. A summary of the key interventions per sector is as follows:

- The **cross-sectoral adaptation measures** (10 in total) benefit multiple sectors. These are often enabling actions such as strengthening regional climate resilience coordination (e.g. a Western Balkans Adaptation Roadmap for transboundary risks), improving climate data systems (upgrading the hydro-meteorological network and data sharing), and piloting innovative finance mechanisms. These cross-cutting actions play an important role in the overall adaptation effort, ensuring coherence and leveraging synergies among sectoral actions.

- The **agriculture** adaptation measures (8 in total) include improving water management and infrastructure for climate resilience (e.g. rehabilitating irrigation and drainage systems, and promoting rainwater harvesting in drought-prone areas), implementing nature-based solutions on farmlands (such as floodplain restoration and riverbank protection to reduce flood risk on agricultural land), providing financial protection for farmers (crop insurance or compensation funds for climate disaster losses), and enhancing agricultural services (developing an Action Plan for invasive species under changing climate conditions, and boosting climate monitoring capacity for coastal and agricultural zones).

- In the **forestry** sector the 13 priority measures focus on ecosystem restoration and reforestation at scale. The plan's most ambitious adaptation measure is a nationwide afforestation and agro-forestry program to restore degraded lands and improve watershed resilience. Other sectoral measures include establishing regional forest nurseries for drought-resistant species, and programmes to assist migration of rare/endemic species to suitable habitats as the climate shifts. Other priority interventions aim to protect against floods and erosion by restoring coastal and riverine green belts, implementing integrated erosion control, and enhancing the resilience of protected areas. Capacity-building measures, like strengthening wildfire prevention and response and introducing Payment for Ecosystem Services (PES) schemes to fund forest conservation, are also prioritized.

- In the **tourism** sector there are 11 priority interventions, largely "soft" measures, given the tourism sector's needs for planning and capacity. These include climate-informed spatial planning for tourism development (to avoid high-risk zones like floodplains or eroding coastlines), updating building standards and incentive programs for climate-proofing tourism facilities, and policy and regulatory reforms to integrate climate risk management

in tourism operations. An important ecosystem-based measure in tourism is Protecting Vlora Bay's Underwater Heritage initiative. Other measures focus on capacity building, e.g. training tourism operators in adaptive practices, creating digital knowledge hubs for climate-resilient tourism, and enforcing regulations to protect natural assets.

- There are 9 measures for strengthening urban resilience in **urban development**. Several measures involve integrating climate change into urban and territorial planning: e.g. updating city master plans to account for sea-level rise and flood risk, and redirecting new development away from high-risk areas. Another key area of intervention is enhancing the resilience of buildings and improving urban infrastructure through measures such as conducting city-level climate risk assessments and vulnerability maps to guide investments, developing flood emergency response plans for municipalities, and assessing options for sustainable urban drainage. Specific "Green" measures include urban greening and reforestation initiatives to create green corridors and mitigate heat islands.

- The 8 adaptation measures in the **energy sector** address both the supply side and demand side. On the supply/infrastructure side, a major "grey" measure aims to protect energy infrastructure from extreme weather. Another measure is focused on building resilience in hydropower generation, which includes optimizing reservoir operations for new climate realities and reinforcing dams and related structures. On the demand side, measures include promoting efficient cooling technologies for heatwave events, as well as enhancing the regulatory framework through new approaches like introducing energy performance standards for buildings. There are also exploratory measures like demand-side management and energy storage studies to improve energy system flexibility under climate variability.

- In the **transport sector** the 7 priority measures are mostly strategic or planning-focused, reflecting the need to systematically climate-proof the transport network, e.g. conducting regular climate vulnerability and risk assessments for road infrastructure. Other measures prioritize bio-engineering solutions for road stabilization and geological studies to guide road design in erosion-prone areas. A very significant green measure is the integration of nature-based solutions into transport infrastructure. On the policy side, measures include updating transport design standards and maintenance regimes to account for climate risks (climate-resilient road design guidelines) and developing innovative financing partnerships to fund resilient transport projects.

A map with the locations of the measures on forestry, agriculture and NbS is given in **Annex IV** below offers a summary of the 66 adaptation measures including sector, type of measure, estimated costs and implementing period:

Table 11. NAP Implementation Plan[128].

No.	Sector	Adaptation Measure	Intervention Type*	Cost (USD)	Period**
1	Cross-sectoral	Strengthening Regional Resilience: Supporting the Western Balkans Adaptation Roadmap	Soft	315.000	ST
2	Cross-sectoral	Optimizing Climate Coordination: Strengthening the IMWGCC Framework	Soft	420.000	ST
3	Cross-sectoral	Enhancing Capacities for Adaptation: Support for the Climate Change Technical Group and create and capacitate a Steering Group	Soft	745.000	ST
4	Cross-sectoral	Enhancing climate resilience through improved data systems	Soft	1.500.000	ST
5	Cross-sectoral	Nature-based solutions and Biodiversity Net Gain Developer Schemes	Green	242.793.396	MT
6	Cross-sectoral	Fostering Climate Resilience Awareness Raising and Training for Adaptation and Mitigation	Soft	1.500.000	ST
7	Cross-sectoral	Innovative Climate Finance Mechanisms: Piloting Sustainable Financing Strategies	Soft	6.080.000	ST
8	Cross-sectoral	Piloting risk management Assessments for Climate-Resilient Businesses	Soft	200.000	ST
9	Cross-sectoral	Promoting Gender-Sensitive Climate Adaptation: Training Stakeholders and Developing Inclusive Tools	Soft	143.000	MT
10	Cross-sectoral	Educating Communities: Adaptation and disaster awareness-raising	Soft	3.025.000	ST
11	Agriculture	Empowering farmers: financial support for climate-resilient infrastructure	Soft	29.600.000	ST
12	Agriculture	Safeguarding farmers: Compensation and assistance programs for disaster recovery	Soft	102.250.000	MT

128. Implementation Plan for prioritized adaptation actions. Prepared under UNDP NAP Project. 2023-2025. Here depicted without Activities and Indicators

No.	Sector	Adaptation Measure	Intervention Type*	Cost (USD)	Period**
13	Agriculture	Action Plan for Invasive Species Under Changing Climate Conditions	Soft	160.000	MT
14	Agriculture	Strengthening Flood Protection: Riverbank Restoration and Floodplain Expansion Across Key Albanian Rivers	Grey	179.022.000	ST
15	Agriculture	Implementing Habitat Creation and Nature-Based Solutions to Combat Soil Erosion	Green	41.787.500	ST
16	Agriculture	Enhancing IGEO's (Institute of Geosciences) Capacity for Coastal Monitoring and Data Provision on Environmental Changes and risks	Soft	322.200	ST
17	Agriculture	Expanding and Modernizing Irrigation Systems for Enhanced Agricultural Resilience	Grey	249.123.998	ST
18	Agriculture	Sustainable Water Security through Rainwater Harvesting Infrastructure	Grey	75.849.163	ST
19	Forestry	Enhancing Forestry Efficiency through EU Regulatory Compliance	Soft	17.600.000	ST
20	Forestry	Advancing Sustainable Forestry: Afforestation Fund and Green Procurement Initiatives	Soft	8.540.000	ST
21	Forestry	Revitalizing Damaged Lands: Integrating NbS and EBA with Agroforestry Practices	Green	1.494.738.115	ST
22	Forestry	Strengthening Forest and Pasture Protection: Investments in Human Capacity and Firefighting Resources	Soft	475.000	ST
23	Forestry	Advancing Afforestation: Establishing Regional Nurseries for Drought-Resistant Species	Green	2.249.360	ST
24	Forestry	Supporting Migration of Rare and Endemic Forest Species to higher altitudes	Green	894.780	ST
25	Forestry	Restoring Vital Ecosystems: Protecting and Regenerating Coastal and Riverine Green Belts and Protective Ecosystems	Green	145.561.688	ST
26	Forestry	Sustainable Financing Through Payment for Ecosystem Services (PES)	Soft	16.000.000	LT

No.	Sector	Adaptation Measure	Intervention Type*	Cost (USD)	Period**
27	Forestry	Integrated Ecosystem Restoration and Resilience: Addressing Soil Erosion in Key Albanian Regions	Green	62.573.351	LT
28	Forestry	Combating Erosion and Flooding: Strategic Habitat Restoration and Reforestation in Key Albanian Regions	Green	124.943.176	ST
29	Forestry	Sustainable Landscape Management: Enhancing Water Quality and Biodiversity at Viroi Lake in Gjirokastër	Green	479.334	LT
30	Forestry	Enhancing Climate Resilience in National Parks and Protected Areas	Green	257.461.805	MT
31	Forestry	Restoration of forest layers to protect crops in Vlora	Green	3.282.947	MT
32	Tourism	Strategic Spatial Planning for tourism: Redirecting Development from High-Risk Areas	Soft	600.000	ST
33	Tourism	Climate-proofing tourism infrastructure: Incentive packages for climate-proofing the tourism sector infrastructure	Soft	800.000	MT
34	Tourism	Strategic Planning for Coastal Resilience: Buffer Zones and Sea Gate Adaptations	Soft	504.000	MT
35	Tourism	Protecting Vlora Bay: Preserving Posidonia Habitats and Underwater Cultural Heritage Against Climate Impacts	Green	3.606.119	LT
36	Tourism	Strengthening the policy and regulatory framework for Sustainable Tourism: Policy Review and Regulatory Enhancement	Soft	120.500	ST
37	Tourism	Integrating Climate Data for Sustainable Tourism: Guidelines for resilient business management and National Reporting	Soft	290.000	ST
38	Tourism	Climate-proofing Tourism Infrastructure: Adaptive Designs for Climate Risk Mitigation	Grey	TBC	ST
39	Tourism	Protecting Coastal Zones: Integrated Regulations, Planning and Management for Climate Resilience and Sustainable Development	Soft	657.000	MT
40	Tourism	Building Climate Resilience Capacity: Training Tourism Operators in Sustainable Practices and Adaptation Strategies	Soft	430.000	ST

No.	Sector	Adaptation Measure	Intervention Type*	Cost (USD)	Period**
41	Tourism	Digital Hubs for Climate-Resilient Tourism: Sharing Knowledge and Best Practices	Soft	34.000	ST
42	Tourism	Protecting Tourism Assets: Enforcing Regulations and Restoring Ecosystems for Sustainable Development	Soft	1.450.000	ST
43	Urban development	Maritime and Territorial Planning for Climate Resilience: Preparing for Rising Seas and Changing Environments	Soft	290.000	MT
44	Urban development	Strategic Spatial Planning for Risk Reduction: Redirecting Developments and Managing Surface Water Flood Risks	Soft	3.027.000	ST
45	Urban development	Incentive schemes to increase extreme temperature resilience of the building stock	Soft	2.715.000.000	LT
46	Urban development	Integrating Green Spaces into Public Infrastructure Development through Green Public Procurement	Soft	380.000	MT
47	Urban development	Restoring Green Corridors: Reforestation and Urban Greening Initiatives	Green	568.544	MT
48	Urban development	Climate Risk Assessment for Durrës, Elbasan, Fier, and Beyond: Developing a Comprehensive Vulnerability Map	Soft	196.000	ST
49	Urban development	Flood event emergency plans	Soft	2.500.000	ST
50	Urban development	Enhancing Urban Resilience: Assessing Greenspaces and Sustainable Drainage Solutions	Green	TBC	ST
51	Urban development	Sustainable Urban Design: Conservation and Restoration of Permeable and Infiltration Areas	Soft	1.200.000	LT
52	Energy	Protecting Energy Infrastructure against strong winds: Rehabilitating Substations and Transmission Lines	Grey	986.298.000	MT
53	Energy	Enhancing Building Efficiency: Energy Performance Certificates and Resilient Standards	Soft	3.500.000	MT
54	Energy	Exploring the Energy sector Potential: Demand-Side Management and Energy Storage Studies	Soft	2.900.000	MT

No.	Sector	Adaptation Measure	Intervention Type*	Cost (USD)	Period**
55	Energy	Protecting the energy infrastructure: Monitoring Emergency and Risk Areas	Soft	875.000	ST
56	Energy	Enhancing Heatwave resilience through Efficient Air Conditioning Technology Deployment and Climate Refuges	Soft	38.200.000	LT
57	Energy	Optimizing Renewable Energy for Resilient Systems: Grid Innovation and Storage Investments	Soft	176.850.000	LT
58	Energy	Advancing Gender Equity in Energy: Training and Support for Women in Renewable Energy Projects	Soft	4.900.000	ST
59	Energy	Building Resilience in Hydropower: Optimized Operations and Strengthened Infrastructure	Grey	747.050.000	ST
60	Transport	Regular Vulnerability and Risk Analysis and Definition of Resilience-Building Measures for Road Infrastructure	Soft	457.000	ST
61	Transport	Geological Studies for Sustainable Roads: Bio-Engineering Solutions to reduce Erosion and Flood risks	Soft	2.900.000	MT
62	Transport	Advancing Sustainable and Climate Resilient Urban Mobility: Developing and Reviewing Urban Mobility Plans	Soft	1.200.000	ST
63	Transport	Adapting Critical Transport Infrastructure: Advanced Risk Assessment and Resilient Design Solutions	Soft	2.700.000	ST
64	Transport	Integrating Nature-Based Solutions and environmental based adaptation for Transport sector resilience: Enhancing Infrastructure with Nature-Based and Ecosystem-Based Adaptation	Green	2.029.460.000	MT
65	Transport	Climate Resilience Transport Policies: Embedding Climate Adaptation in Regulatory Frameworks	Soft	218.000	ST
66	Transport	Innovative Partnerships for Sustainable Transport: Funding Climate-Resilient Transport Infrastructure	Soft	1.900.000	LT
GRAND TOTAL NAP				**9.800.696.976**	

**Type: Soft, Grey, Green. **Expected period of initiation of measures: ST: Short-Term: 2026-2028; MT: Medium-Term: 2029-2031; LT: Long-Term: 2032-2036. More detail on the timeline is provided below .*

Each of the 66 adaptation measures presented above were broken-down into a series of between two and ten specific subactivities per measure, which are the specific steps or activities necessaries for the overall attainment of each measures' goal. These activities are presented in **Annex III** and also in the separate Implementaiton Plan that provides a more extensive level of detail.

To support the effective implementation of the adaptation measures and constituting activities, a set of summary fact sheets for each measure was prepared, which are available within the full Implementation Plan document. These fact sheets serve as a practical tool to consolidate key information for each proposed intervention, offering a standardized overview that facilitates decision-making, coordination among actors, the mobilization of resources and eventual implementation. Also, brief Concept Notes for most measures were produced to attract further resource mobilization (presented in a separate document).

6.2 Governance and Responsibilities for implementation of the nap

Within the institutional framework of Albania, climate change governance is coordinated through a multi-level system, as already referred to in Chapter 3 (3.4). At the national level, the Ministry of Environment (MoE) is the lead authority for environmental and climate policy and implementation oversight, and hosts the Climate Change Unit, which acts as the national focal point to the UNFCCC.

The Ministry also leads the IMWGCC, that plays a pivotal role in ensuring cross-sectoral coordination, institutional alignment, mainstreaming and decision-making of climate action. The Climate Change Adaptation Working Group (CCAWG) under the IMWGCC reviews the NAP implementation.

In practice, adaptation to climate change is implemented by the relevant sectoral ministries and agencies, often in close coordination with municipal authorities. The following sector Ministries, Institutions and Authorities have a key role to play in the implementation of the NAP and this Implementation Plan (c.f. Chapter 3; 3.4): MoE, MARD, Ministry of Infrastructure and Energy (MIE), Ministry of Finance (MoF), Ministry of Economy, Culture and Innovations (MECI), and the Ministry of Tourism, Culture and Sport, including their subordinate Institutions and Agencies.

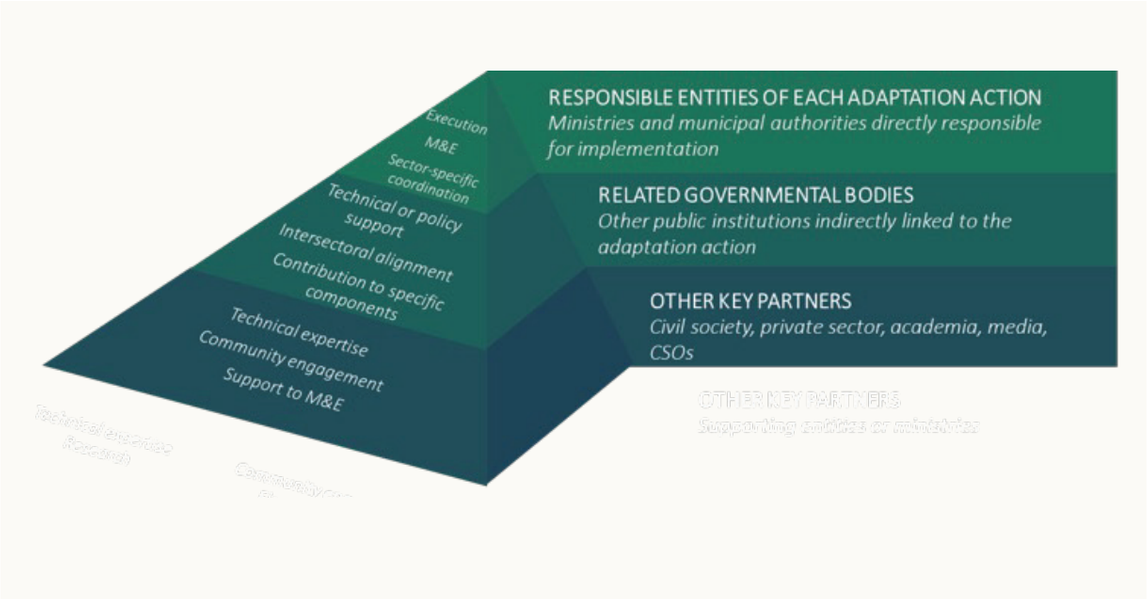
The NAP priority measures must be implemented in close collaboration with the country's 61 municipalities, who have a critical role in adaptation planning and implementation, as they manage key responsibilities such as local infrastructure (roads, drainage systems, water supply), land-use regulation, environmental protection, and public service delivery.

To operationalize this multi-level governance system and ensure clarity in the distribution of responsibilities for climate action, the Implementation Plan adopts a structured and hierarchical approach, see also Figure 20 below:

- **Responsible entities for adaptation actions**: These include the governmental ministries, agencies, and, where applicable, municipal authorities responsible for leading the implementation of sector-specific adaptation measures and activities. These entities are tasked with the execution and monitoring of actions within their respective areas of competence, ensuring an integrated, multi-sectoral, and coherent approach to climate adaptation. For certain locally driven actions, municipalities will act as lead implementing entities in coordination with national counterparts.

- **Related governmental bodies**: These are institutions whose mandates intersect with the adaptation measure/activity and which sup-

Figure 20. Institutional Arrangements for the Implementation Plan[129].



port its implementation by providing technical input, policy alignment, or operational resources. These may include other ministries, national agencies, or public institutions that contribute to the delivery of specific components of the adaptation measure or help ensure inter-sectoral consistency.

- **Other Key Partners**: This category comprises non-governmental actors such as the private sector, civil society organizations, academia, community-based organizations (CBOs), media and local constituencies. These stakeholders contribute through technical expertise, research, outreach, and community mobilization. They also play a vital role in generating and sharing data for the monitoring and evaluation of adaptation progress. Their participation ensures that adaptation strategies are inclusive, science-informed, and grounded in local realities.

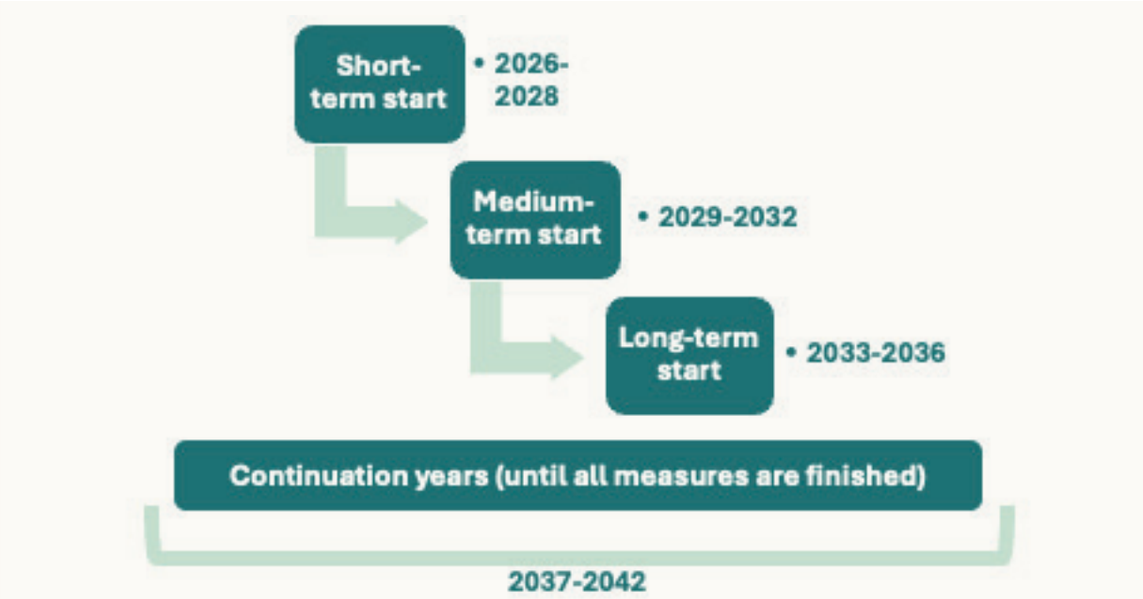
See further Table 11 below for the main responsible institutions for the adaptation measures, with further information on the lead and supporting institutions assigned to each adaptation action can be found in the **detailed adaptation factsheets provided in a separate document**.

6.3 Timeline for implementation

The proposed **timeline** for the Implementation Plan covers the period between 2026 and 2036 to ensure a comprehensive and strategic approach to the climate adaptation measures aimed at enhancing resilience. This extended horizon provides adequate time for capacity building, infrastructure development, policy integration and

129. Implementation Plan for prioritized and costed adaptation actions. Prepared under UNDP NAP Project. Ministry of Environment, 2023-2025.

Figure 21. Implementation periods.



continuous M&E to assess progress and make necessary adjustments.

The **starting year of implementation** for each adaptation measure was determined based on analysis and expert judgment, taking into account the country's institutional, operational capacities and already on-going sectoral policies, strategies and actions. This was complemented by the determined level of priority, and the sector-specific ordering of priorities. This combined approach ensured a staggered timeline that enhances feasibility, sustainability and coordination, as defined through the proposed start years for each measure distributed as follows:

- **Short-term measures** would **start** at some point **between 2026 and 2028** given their urgency or necessary longer periods for implementation.
- **Medium-term measures** would **commence execution between 2029 and 2032.**
- **Long-term measures** would **begin between 2033 and 2036** given their complexity, larger amount of funds necessary or requirement for previous studies before implementation can commence.

The duration of the **implementation period for the adaptation measures varies** as it depends on the specific activities of the adaptation measure, ranging **from 1 year to 10 years**. **Continuation years cover the period 2037-2042** and these are the years **until the execution of all measures is expected to end**, however no new measures will start in this period.

The Implementation Plan will be reviewed at mid-term for possible adjustments, and evaluated towards the end to define a new Implementation Plan with continuing and/or new adaptation measures.

Table 12. Implementation Plan timing and responsibilities.

No.	Adaptation Measure	Responsibilities	Implementation Years																
			Short-term start period			Medium-term start period			Long-term start period					Continuation years					
			'26	'27	'28	'29	'30	'31	'32	'33	'34	'35	'36	'37	'38	'39	'40	'41	'42
1	Strengthening Regional Resilience: Supporting the Western Balkans Adaptation Roadmap	MoE, Municipalities			■	■	■												
2	Optimizing Climate Coordination: Strengthening the IMWGCC Framework	MoE, Municipalities		■	■														
3	Enhancing Capacities for Adaptation: Support for the Climate Change Technical Group and create and capacitate a Steering Group	MoE, Municipalities		■	■	■													
4	Enhancing climate resilience through improved data systems	MoE			■	■	■												
5	Nature-based solutions and Biodiversity Net Gain Developer Schemes	MoE, Municipalities				■	■	■	■	■	■								
6	Fostering Climate Resilience Awareness Raising and Training for Adaptation and Mitigation	MES, ASPA		■	■	■	■												
7	Innovative Climate Finance Mechanisms: Piloting Sustainable Financing Strategies	MOF, Municipalities			■	■	■	■											
8	Piloting risk management Assessments for Climate-Resilient Businesses	MECI			■	■	■												
9	Promoting Gender-Sensitive Climate Adaptation: Training Stakeholders and Developing Inclusive Tools	MHSP, ASPA					■	■											
10	Educating Communities: Adaptation and disaster awareness-raising	MES					■	■	■	■									
11	Empowering farmers: financial support for climate-resilient infrastructure	MARD			■	■	■	■	■	■	■	■	■	■					
12	Safeguarding farmers: Compensation and assistance programs for disaster recovery	MARD				■	■	■	■	■	■	■	■	■	■				
13	Action Plan for Invasive Species Under Changing Climate Conditions	MARD					■	■	■										
14	Strengthening Flood Protection: Riverbank Restoration and Floodplain Expansion Across Key Albanian Rivers	MARD, Municipalities	■	■	■	■	■	■											

No.	Adaptation Measure	Responsibilities	Implementation Years																
			Short-term start period			Medium-term start period				Long-term start period				Continuation years					
			'26	'27	'28	'29	'30	'31	'32	'33	'34	'35	'36	'37	'38	'39	'40	'41	'42
15	Implementing Habitat Creation and Nature-Based Solutions to Combat Soil Erosion	MARD, Municipalities			■	■	■	■	■	■									
16	Enhancing IGEO's Capacity for Coastal Monitoring and Data Provision on Environmental Changes and risks	MARD			■	■													
17	Expanding and Modernizing Irrigation Systems for Enhanced Agricultural Resilience	MARD, Municipalities		■	■	■	■	■	■										
18	Sustainable Water Security through Rainwater Harvesting Infrastructure	MARD, Municipalities		■	■	■	■	■	■										
19	Enhancing Forestry Efficiency through EU Regulatory Compliance	MoTE	■	■	■	■	■	■											
20	Advancing Sustainable Forestry: Afforestation Fund and Green Procurement Initiatives	MoTE			■	■	■	■											
21	Revitalizing Damaged Lands: Integrating NbS and EBA with Agroforestry Practices	MoE, Municipalities	■	■	■	■	■	■											
22	Strengthening Forest and Pasture Protection: Investments in Human Capacity and Firefighting Resources	MoE, Municipalities			■	■	■	■											
23	Advancing Afforestation: Establishing Regional Nurseries for Drought-Resistant Species	MoE, Municipalities	■	■	■	■	■	■	■	■	■								
24	Supporting Migration of Rare and Endemic Forest Species to higher altitudes	MoE, Municipalities			■	■	■	■	■	■									
25	Restoring Vital Ecosystems: Protecting and Regenerating Coastal and Riverine Green Belts and Protective Ecosystems	MoE, Municipalities	■	■	■	■	■	■											
26	Sustainable Financing Through Payment for Ecosystem Services (PES)	MARD								■	■	■	■	■	■				
27	Integrated Ecosystem Restoration and Resilience: Addressing Soil Erosion in Key Regions	MoE, Municipalities								■	■	■	■	■	■	■	■	■	■
28	Combating Erosion and Flooding: Strategic Habitat Restoration and Reforestation in Key Albanian Regions	MoE, Municipalities	■	■	■	■	■	■	■	■									

No.	Adaptation Measure	Responsibilities	Implementation Years																
			Short-term start period			Medium-term start period				Long-term start period				Continuation years					
			'26	'27	'28	'29	'30	'31	'32	'33	'34	'35	'36	'37	'38	'39	'40	'41	'42
29	Sustainable Landscape Management: Enhancing Water Quality and Biodiversity at Viroi Lake in Gjirokastër	MoE, Municipalities								■	■	■							
30	Enhancing Climate Resilience in National Parks and Protected Areas	NAPA, Municipalities							■	■	■	■	■	■	■	■			
31	Restoration of forest layers to protect crops in Vlora	MARD, Municipalities				■	■	■	■	■	■	■							
32	Strategic Spatial Planning for tourism: Redirecting Development from High-Risk Areas	MoE, MoTCS	■	■															
33	Climate-proofing tourism infrastructure: Incentive packages for climate-proofing the tourism sector infrastructure	MoE, MoTCS					■	■	■										
34	Strategic Planning for Coastal Resilience: Buffer Zones and Sea Gate Adaptations	MoE, MoTCS, Municipalities				■	■	■											
35	Protecting Vlora Bay: Preserving Posidonia Habitats and Underwater Cultural Heritage Against Climate Impacts	MoTE, MoTCS, Municipalities									■	■	■	■					
36	Strengthening the policy and regulatory framework for Sustainable tourism: Policy Review and Regulatory Enhancement	MoE, MoTCS			■	■	■	■											
37	Integrating Climate Data for Sustainable tourism: Guidelines for resilient business management and National Reporting	MoE, MoTCS	■	■	■														
38	Climate-proofing tourism Infrastructure: Adaptive Designs for Climate Risk Mitigation	MoE, MoTCS		■	■	■	■	■	■	■	■	■	■						
39	Protecting Coastal Zones: Integrated Regulations, Planning and Management for Climate Resilience and Sustainable Development	MoE, MoTCS				■	■	■	■	■									
40	Building Climate Resilience Capacity: Training tourism Operators in Sustainable Practices and Adaptation Strategies	MoE, MoTCS		■	■														
41	Digital Hubs for Climate-Resilient tourism: Sharing Knowledge and Best Practices	MoE, MoTCS		■	■														

No.	Adaptation Measure	Responsibilities	Implementation Years																	
			Short-term start period			Medium-term start period				Long-term start period					Continuation years					
			'26	'27	'28	'29	'30	'31	'32	'33	'34	'35	'36	'37	'38	'39	'40	'41	'42	
42	Protecting tourism Assets: Enforcing Regulations and Restoring Ecosystems for Sustainable Development	MoE, MoTCS			■	■	■	■												
43	Maritime and Territorial Planning for Climate Resilience: Preparing for Rising Seas and Changing Environments	MIE						■	■	■										
44	Strategic Spatial Planning for Risk Reduction: Redirecting Developments and Managing Surface Water Flood Risks	MIE			■	■	■	■	■	■										
45	Incentive schemes to increase extreme temperature resilience of the building stock	MIE								■	■	■	■	■	■	■	■	■	■	■
46	Integrating Green Spaces into Public Infrastructure Development through GPP	MIE					■	■	■											
47	Restoring Green Corridors: Reforestation and Urban Greening Initiatives	MoE, Municipalities				■	■	■	■	■	■									
48	Climate Risk Assessment for Durrës, Elbasan, Fier, and Beyond: Developing a Comprehensive Vulnerability Map	MIE, Municipalities			■	■	■	■												
49	Flood event emergency plans	MIE, Municipalities		■	■	■	■													
50	Enhancing Urban Resilience: Assessing Greenspaces and Sustainable Drainage Solutions	MIE, Municipalities	■	■	■	■	■	■	■	■										
51	Sustainable Urban Design: Conservation and Restoration of Permeable and Infiltration Areas	MIE, Municipalities										■	■	■	■	■				
52	Protecting Energy Infrastructure against strong winds: Rehabilitating Substations and Transmission Lines	Albanian System Transmission Operator						■	■	■	■	■	■							
53	Enhancing Building Efficiency: Energy Performance Certificates and Resilient Standards	MIE						■	■	■	■	■								
54	Exploring the Energy sector Potential: Demand-Side Management and Energy Storage Studies	MIE				■	■	■												
55	Protecting the energy infrastructure: Monitoring Emergency and Risk Areas	MIE			■	■	■	■												

No.	Adaptation Measure	Responsibilities	Implementation Years																	
			Short-term start period			Medium-term start period				Long-term start period				Continuation years						
			'26	'27	'28	'29	'30	'31	'32	'33	'34	'35	'36	'37	'38	'39	'40	'41	'42	
56	Enhancing Heatwave resilience through Efficient Air Conditioning Technology Deployment and Climate Refuges	MIE, Municipalities																		
57	Optimizing Renewable Energy for Resilient Systems: Grid Innovation and Storage Investments	MIE																		
58	Advancing Gender Equity in Energy: Training and Support for Women in RE Projects	MIE																		
59	Building Resilience in Hydropower: Optimized Operations and Strengthened Infrastructure	MIE																		
60	Regular Vulnerability and Risk Analysis and Definition of Resilience-Building Measures for Road Infrastructure	MIE –Transport Infrastructure, Municipalities																		
61	Geological Studies for Sustainable Roads: Bio-Engineering Solutions to reduce Erosion and Flood risks	MIE –Transport Infrastructure, Municipalities																		
62	Advancing Sustainable and Climate Resilient Urban Mobility: Developing and Reviewing Urban Mobility Plans	MIE –Transport Infrastructure, Municipalities																		
63	Adapting Critical Transport Infrastructure: Advanced Risk Assessment and Resilient Design Solutions	MIE –Transport Infrastructure, Municipalities																		
64	Integrating Nature-Based Solutions and environmental based adaptation for Transport sector resilience: Enhancing Infrastructure with Nature-Based and Ecosystem-Based Adaptation	MIE –Transport Infrastructure, Municipalities																		
65	Climate Resilience Transport Policies: Embedding Climate Adaptation in Regulatory Frameworks	MIE –Transport Infrastructure, Municipalities																		
66	Innovative Partnerships for Sustainable Transport: Funding Climate-Resilient Transport Infrastructure	MIE –Transport Infrastructure																		

6.4 Estimated Cost of Implementation Plan

In total, the implementation of 66 adaptation interventions will require approximately USD9.8 billion, as determined through detailed cost analysis (see Table 10 above for the estimated cost per measure). These costs have been distributed between cross-sector and sectorial measures planned in this NAP Implementation Plan as presented in the table below in a decreasing order of cost.

From the Table 13 we can see that urban development has the highest estimated cost (with 9 measures), followed by forestry (13 measures) and transport (7 measures), and tourism has the lowest estimated cost from 11 measures.

When assessing this estimated total cost per type of intervention (see Table 14), it can be observed that "green" interventions take the majority of the NAP costs (45%) with 15 measures. This higlihgths the importance given to nature-based solutions approaches to address vulnerabilities in the country. However, "grey" intervention measures

Table 13. Totals of Measures and Costs per Sector

Sector	No. Measures	% Measures	Cost (USD)	% Cost
Urban development	9	13%	2,723,161,544	28%
Forestry	13	20%	2,134,799,556	21%
Transport	7	11%	2,038,835,000	21%
Energy	8	12%	1,960,573,000	20%
Agriculture	9	13%	678,114,861	7%
Cross-sectoral	10	15%	256,721,396	2%
Tourism	11	16%	8,491,619	1%
Total	**66**	**100**	**9,800,696,976**	**100**

Table 14. Estimated budget needs by type of intervention.

Type of intervention	Estimated Costs (USD)	Estimated Costs (%)	No. Adaptation measures	Adaptation measures (%)
Green intervention	4,410,400,115	45%	15	23%
Soft intervention	3,152,953,700	32%	45	68%
Grey intervention	2,237,343,161	23%	6	9%
Total estimated	**9,800,696,976**	**100%**	**66**	**100%**

Table 15. Estimated budget by timeline

Timeline	Budget planning/commitments		Budget annualization proposal (disbursements)	
	Budget Estimated per measure start date (USD)	Number of measures	Disbursements Estimated (USD)	% of the total budget
Long-term (2033-2036)	3,017, 008,804	10	6,649,179,967 (disbursements end in 2042)	68%
Medium-term (2029-2032)	3,637,373,692	18	2,609,730,508	27%
Short-term (2026-2028)	3,146,314,481	38	541,786,502	6%
Total estimated	**9,800,696,977**	**66**	**9,800,696,977**	**100%**

are most cost-intensive as only 6 measures require already 23% of the total NAP budget, and are focused specially on the energy (climate proofing infrastructure) and agriculture sectors (reinforcing agriculture and drainage infrastructure)[130]. Finally, "soft" interventions required about 32% of the total costs, but show the highest number of measures: 45, which indicates that normally this kind of interventions are less resource-intensive focused on actions such as reinforcing capacities, establishing a strong policy and regulatory framework, or establishing new coordination mechanisms, among others.

In terms of timing, i.e. the time of starting the implementation of the adaptation measure, the budget commitments and the actual budget disbursements look as shown in the table 14 above.

Table 15 presents the estimated budget allocations and actual disbursements for the 2026–2036 period. Although the budget commitments are evenly distributed across the Plan's ten-year period, most short-term actions (2026–2028) begin early because they involve "soft measures"—interventions that are easier to prepare, less costly, and help quickly reduce vulnerabilities across sectors.

In contrast, **"green" and "grey" infrastructure projects generally start later** (medium- and long-term) due to their longer preparation and higher resource needs.

The table also accounts for the timing of budget disbursements, which may extend beyond the Plan's official period since many measures last between 2 and 10 years.

130. It is noteworthy that some of the tourism and urban development sectors' grey infrastructure costs remain yet to be confirmed as the target infrastructure to be addressed is to be defined.

For example, a project starting in 2028 and lasting ten years would have funding committed in the short-term but disbursements spread across short-, medium-, and long-term periods, up to 2042, when the final projects are expected to conclude. No new measures begin after 2036, the end of the planning cycle.

In terms of total **disbursements**, they are spread over time as follows:

- **Long-term period: 68% of total funds (≈ USD 6.65 billion**), covering projects either initiated or continuing into this phase.
- **Medium-term period: 27% of total funds (≈ USD 2.61 billion**), supporting the scaling-up of adaptation efforts.
- **Short-term period: 6% of total funds (≈ USD 541.79 million**), reflecting a phased start focused on quick, foundational actions.

Overall, the budget strategy follows a phased and gradual approach, prioritizing immediate soft measures while ensuring sustained investment in larger, long-term adaptation initiatives.

The Chapter 9 provides more detail into the corresponding fincanign needs and suitable funding approaches. Further informatino on the costing analysis is available in the separate Implementation Plan document.

07

Gender mainstreaming

Gender responsiveness is a core principle of NAP processes, as also emphasized by the UNFCCC. The Paris Agreement explicitly recognizes that adaptation action should be gender-responsive, while the Framework for the Global Goal on Adaptation (GGA) mandates country-driven, gender-responsive, participatory and transparent National Adaptation Plans by 2030.

Gender mainstreaming in NAPs is crucial as women and men experience climate impacts differently due to existing social, economic, and cultural inequalities. The IPCC acknowledges that differences in adaptive capacities between men and women are rooted in complex social, environmental, economic, and cultural inequalities. This understanding is crucial for developing and implementing climate adaptation actions that are truly effective and inclusive. Actions that fail to account for these gender dimensions run the risk of being ineffective and may exacerbate existing inequalities. **In essence, adopting a gender-responsive approach to climate adaptation is not just a matter of equity and social justice but also essential for achieving sustainable and resilient outcomes in the face of a changing climate.**

The NAP process in Albania adopted a phased and structured approach to gender mainstreaming. A Gender Action Plan (GAP)[131] was developed through consultation with experts, ensuring that women's needs and perspectives would be integrated throughout the process. The GAP addresses the gender dimensions of climate change across the five priority sectors and provides a comprehensive framework for integrating gender considerations into climate adaptation efforts, recognizing that climate change impacts affect women and men differently. The analysis made revealed significant gender gaps across all sectors, with women facing disproportionate challenges in accessing resources, participating in decision-making processes, and building resilience to climate impacts.

The objectives of the GAP for the NAP are:

1. To promote gender equality and women's empowerment within the context of climate change adaptation across five priority sectors.
2. To provide a comprehensive framework for gender-responsive planning, implementation, and monitoring of adaptation initiatives.
3. To identify and address sector-specific gender inequalities and differential vulnerabilities in climate change adaptation.
4. To align Albania's climate adaptation efforts with international best practices for gender mainstreaming.

Implementation of the GAP as part of the NAP in Albania will create more inclusive, effective, and equitable climate adaptation strategies that address the specific needs and vulnerabilities of both women and men. This approach not only enhances the country's resilience to climate change but also contributes to broader goals of gender equality and sustainable development.

The GAP aligns with and supports the implementation of several key national strategies and international commitments, including the National Strategy on Gender Equality (NSGE,

131. NAP Gender Action Plan. Prepared under UNDP NAP Project. Ministry of Environment, 2023-2025.

2021-2030), sector-specific strategies, the Paris Agreement, and the Sustainable Development Goals. The GAP is designed to be a living document, subject to regular review and updates as the NAP itself evolves. It includes recommendations for gender-specific targets and indicators to facilitate monitoring and evaluation of the gender-responsiveness of NAP implementation.

7.1 Gender equality challenges across the NAP sectors

The analysis performed reveals significant gender gaps across all sectors, with women facing disproportionate challenges in accessing resources, participating in decision-making processes, and building resilience to climate impacts.

In **agriculture**, which contributes 18.6% to Albania's GDP, the sector employs 440,872 people (33.9% of total employment), with women comprising 54.4% (239,775 workers) compared to men at 45.6% (201,097 workers). The sector faces specific climate vulnerabilities including fl oods, droughts, irregular rainfall patterns, declining crop productivity, and increased pest outbreaks. Women are especially affected due to their involvement in climate-sensitive tasks like small-scale farming and post-harvest processing. Women face systemic challenges including limited access to land titles, restricted access to agricultural credit due to lack of collateral, exclusion from agricultural extension services (only 8%), and low participation in agricultural vocational education (16%). Despite constituting the majority of agricultural workers, women's contributions remain largely unrecognized and undervalued, with only 10.8% of officially registered farmers being women (approximately 25,896 women farmers out of the total registered). The declining effectiveness of national support schemes in reaching women (from 22% in 2018 to 16% in 2023, representing a decrease from approximately 52,750 to 38,364 women beneficiaries) further compounds these issues.

The **tourism sector** employs 42,698 people according to the National Tourism Strategy 2024-2030. While tourism-specific gender data is not available in the strategy, INSTAT data for 2022 shows that the broader category of "Trade, Transportation, Accommodation and Food, and Business and Administrative Services", employs 22.5% of the total national female workforce and 30.9% of the total male workforce. Women are more heavily impacted by climate change in the sector because their work concentrated in the most climate-vulnerable positions - seasonal work, informal employment, and service-oriented roles. When extreme weather events or changes in tourism patterns occur, women workers are often the first to lose income or employment due to their precarious employment status and limited access to alternative economic opportunities. Specific challenges faced include predominance in seasonal and informal employment without job security, underrepresentation in management and decision-making roles where adaptation strategies are formulated, limited access to managerial positions, fewer opportunities for professional development, traditional family care responsibilities, barriers to entrepreneurship in sustainable tourism, and absence of gender-specific tourism sector data for effective policy-making.

Urban development shows significant gender disparities, with the construction employing 98,179 workers - men comprising 96.3% (94,593 workers) compared to women at only 3.7% (3,586 workers). The sector faces specific challenges including deteriorating air quality from agricultural and industrial emissions, nitrogen fertilizer pollution affecting both water and air quality, and impacts of slash-and-burn techniques. Women face disproportionate challenges including poor

infrastructure particularly in peri-urban areas where 63% women report inadequate sanitation, limited voice in urban planning processes, safety concerns in public spaces, increased care responsibilities (rising from 75% to 79% during crises, affecting an estimated additional 23,908 women), underrepresentation in decision-making roles, and limited access to resources in informal urban economies.

The **energy sector**, employs 35,508 workers, with a significant gender disparity where men comprise 84.9% (30,129 workers) compared to women at 15.1% (5,379 workers). Women face disproportionate impacts due to their primary role in household energy management despite limited influence over energy policy. Energy poverty particularly affects women-headed households, with utility costs consuming up to 17% of their expenditures. The sector's structural challenges include: an 8.2% gender wage gap, absence of gender-disaggregated data from the Albanian Energy Regulatory Authority (ERE), and women's underrepresentation in technical and leadership positions. The sector's 98% dependence on hydropower amplifies climate vulnerability, particularly affecting energy access and affordability for women-headed and single-parent households. This intersection of energy poverty, climate vulnerability, and gender inequality creates compound challenges for adaptation capacity.

The **transport sector** demonstrates pronounced gender disparities with men representing 91.9% and women 8.1% of the workforce. Women's vulnerability to climate impacts is heightened by their predominant use of public transport (60%). Gender-specific challenges include restricted rural transport options affecting access to essential services, and increased vulnerability to extreme weather events due to public transport dependency. Women's underrepresentation in decision-making positions compounds these vulnerabilities by limiting gender-responsive infrastructure development and adaptation planning. The sector's climate resilience strategies require particular attention to women's mobility patterns and safety requirements, especially during extreme weather events.

7.2 Gender actions

For each sector, the Gender Action Plan complements the list of 66 adaptation measures prioritized for the NAP, including specific recommendations and considerations to mainstream gender elements within the NAP design and execution. This approach ensures that:

- Gender considerations are mainstreamed into Albania's primary climate adaptation framework.
- Implementation remains aligned with overall national adaptation priorities.
- Resources are used efficiently by building upon existing planned actions.
- The gender-responsive action to complement the NAP's adaptation measures aim to:
- Increase women's participation in decision-making processes related to climate adaptation.
- Improve women's access to resources, technologies, and information necessary for climate resilience.
- Address gender-specific vulnerabilities to climate impacts.
- Promote women's leadership in climate-resilient initiatives.
- Ensure that adaptation benefits are equitably distributed.

The GAP outlines **cross-cutting** gender measures that extend across all areas of adaptation. These measures create the enabling conditions for effective and inclusive implementation, ensuring that gender equality is consistently embedded

in governance, capacity-building, data collection, finance, and disaster risk management. The following priorities reflect this cross-cutting approach:

- **Inclusive governance:** Guarantee **balanced representation of women and men** in the Inter-Ministerial Working Group on Climate Change (IMWGCC) and all sectoral Technical Working Groups (TWGs). Assign **gender focal points** in key ministries and agencies to advise on and monitor gender equality in adaptation actions.

- **Capacity development:** Provide **gender and climate training** for policy makers, planners, and implementers at national and local levels. Strengthen the ability of institutions to apply **gender analysis, gender-responsive budgeting, and inclusive project design**.

- **Gender-responsive planning and MEL:** Systematically apply **gender analysis** in all adaptation planning and project cycles. Use **sex-disaggregated indicators** in the Monitoring, Evaluation and Learning (MEL) system, track women's and men's participation and benefits, and ensure **gender-responsive budgeting**.

- **Equitable access to finance and resources:** Design **adaptation finance mechanisms** (grants, guarantees, low-interest credit) to reach **women-led MSMEs, women farmers, and women's organisations**. Promote women's access to land titles, productive assets, and advisory services to enable their active role in adaptation.

- **Meaningful participation of civil society:** Involve **women's organisations, youth groups, and local CSOs** in consultations, project design, and monitoring. Facilitate **community-led adaptation initiatives** where both women and men can lead and benefit.

- **Gender-sensitive disaster risk management:** Embed **early warning systems that reach women and men equally**, ensure **safe evacuation and shelter facilities**, and integrate **protection from gender-based violence (GBV)** into disaster preparedness and response.

- **Knowledge and data:** Mandate the **collection, analysis, and publication of sex- and age-disaggregated data** in climate risk assessments, monitoring reports, and policy evaluations. Support research on the **gender dimensions of climate vulnerability and resilience**.

In addition, sector-specific measures are included to translate gender considerations into concrete interventions across Albania's priority adaptation areas.

Cross-sector

No.	Gender Action	Challenge addressed	Description	Beneficiaries	Indicators	Specific contribution to NAP measures
1	Institutionalize gender in NAP governance & reporting (IMWGCC and sector Technical Working Groups)	Under-representation of women in decision-making bodies; weak gender and sex-disaggregated data flows	Update ToR; require sex/age/vulnerability disaggregation in sector reports; annual gender review	Women in institutions, municipal staff, national gender focal points, women-led CSOs	# IMWGCC/TWG meetings with gender agenda; % sector reports with sex-disaggregated data; share of measures reporting gendered results	M2 – Optimizing Climate Coordination (Strengthening IMWGCC Framework)
2	National gender-responsive adaptation M&E protocol	Fragmented indicators; inconsistent gender disaggregation	Develop protocol and indicator reference sheets; integrate QA/QC and verification	Women in institutions, gender focal points, national CSOs	# indicators with sex/age disaggregation; # Indicator Reference Sheets completed; % sector measures with gender-responsive indicators	M9 – Promoting Gender-Sensitive Climate Adaptation Monitoring and Training
3	Gender-responsive climate finance access window	Limited access to adaptation finance for women-led MSMEs and CSOs	Small grants/guarantees for adaptation pilots	Women-owned MSMEs, women entrepreneurs, rural women groups, vulnerable households, women-led CSOs	# women-led organisations financed; % portfolio going to women-led projects; % projects sustained beyond 24 months	M7 – Innovative Climate Finance Mechanisms
4	Gender-sensitive DRM & emergency protocols	Disproportionate impacts on women in disasters; GBV and safety risks	Standardize risk communications, safe shelters, complaint and referral systems	Women-headed households, women informal workers, vulnerable women and girls, local women's groups	# municipalities adopting the protocol; # shelters meeting gender standards; % women reporting safe access during emergencies	M10 – Educating Communities and Strengthening Disaster Risk Management Awareness

Agriculture and forestry

No.	Action	Challenge addressed	Description	Beneficiaries	Indicators	Specific contribution to NAP measures
1	Equal access to land, credit and extension services	Limited land ownership and agricultural credit; low extension service reach for women	Legal aid for titling; gender-tailored agri-finance; 40% women target in extension	Women farmers and rural women; women-owned agri-MSMEs	# women with land titles; # women accessing tailored agri-credit; % women in extension services; % adopting CSA practices	M11 & M12 – Farmer Support and Disaster Recovery; M17 – Expanding and Modernizing Irrigation; M15 – Implementing Habitat Creation and NbS to Combat Soil Erosion

No.	Action	Challenge addressed	Description	Beneficiaries	Indicators	Specific contribution to NAP measures
2	Scholarships & safe TVET for climate-smart agriculture ensuring women participation	Under-representation of girls and young women in agricultural training	Scholarships; safe learning environments; climate-smart curricula	Girls and young women in agricultural TVET and universities	# scholarships awarded to girls; % female graduates in CSA programs; % graduates employed in climate-smart jobs	M17 – Expanding and Modernizing Irrigation (capacity building element)
3	Women-led producer groups and cooperatives for NbS	Exclusion from leadership and markets	Support women-led cooperatives; link to irrigation, drought-resistant seeds and hydromet services	Women farmers, women agri-entrepreneurs, women in local CSOs	# women-led cooperatives; % women in leadership positions; yield change on women-managed plots	M14 – Flood Protection (riverbanks/ floodplains); M15 – Nature-Based Solutions Against Erosion
4	Gender-targeted jobs in forest nurseries and afforestation	Low participation of women in forestry value chains	Set quotas and flexible schedules for women in nurseries; leadership training	Rural women, women-owned MSMEs, women working in forestry	# women trained/ employed; % women in nursery management; seedling survival rates 12–24m	M23–M31 – Forestry Measures (Regional Nurseries for Drought-Resistant Native Tree Species, Assisted Species Migration, Buffers and Restoration)

Tourism

No.	Action	Challenge addressed	Description	Beneficiaries	Indicators	Specific contribution to NAP measures
1	Climate-risk spatial planning with gender lens	Women concentrated in high-risk coastal/ seasonal jobs; under-representation in planning	Integrate hazard and gender data; redirect new assets from risk zones; require women's participation	Women tourism workers, women entrepreneurs, local female planners and CSOs	# municipal plans using gendered siting; # permits with adaptation & safety clauses; % women reporting safer access	M32 – Strategic Spatial Planning for Tourism
2	Dedicated incentives to climate-proof women-led MSMEs	Finance and data gaps for women tourism businesses	Grants/credits for shade, drainage, water efficiency; gender access criteria	Women-owned tourism MSMEs; women seasonal workers	# women-led MSMEs upgraded; % facilities meeting climate-proofing checklist; revenue continuity after climate events	M33 – Climate-Proofing Incentives; M36 – Strengthening Policy & Regulatory Framework for Sustainable Tourism

No.	Action	Challenge addressed	Description	Beneficiaries	Indicators	Specific contribution to NAP measures
3	Data-to-action: training & digital hubs for women	Low women in management; limited climate data/mentoring access	Practical guidelines, e-learning and mentoring networks for women	Women entrepreneurs, female tourism staff, women managers	# women trained/ mentored; % women in managerial roles; tourism climate data module functional	M37 – Integrating Climate Data; M40 – Building Climate Resilience Capacity of Operators

Urban development

No.	Action	Challenge addressed	Description	Beneficiaries	Indicators	Specific contribution to NAP measures
1	Heat-safe and gender-sensitive public spaces	Heat stress; safety concerns; heavy care roles	Trees/shade, cooling rooms, safe lighting/ sanitation	Women-headed and vulnerable households; municipal women focal points	# spaces adapted; % women reporting improved comfort/ safety; heat-related incident reduction	M46- Integrating green spaces into public infrastructure development through green public procurement M47-Restoring green corridors: reforestation and urban greening initiatives M50-Enhancing urban resilience: assessing greenspaces and sustainable drainage solutions
2	Inclusive community flood risk management	Female-headed households highly exposed	Women-led groups for preparedness, drills, wetland/riverbank care	Women-headed and vulnerable households; local women's associations	# communities reached; % women in drills; evacuation time reduction (gendered)	M49- Flood event emergency plans M50-Enhancing urban resilience: assessing greenspaces and sustainable drainage solutions M51-Sustainable urban design: conservation and restoration of permeable and infiltration areas

No.	Action	Challenge addressed	Description	Beneficiaries	Indicators	Specific contribution to NAP measures
3	Women in city adaptation planning	Under-representation in local planning	Reserved seats and mentoring for women & CSOs	Women municipal staff; women-led CSOs	Quota policy adopted; % planning meetings with ≥40% women; # plans reflecting women's needs	Cross-cutting
4	Resilient housing support for women	Vulnerability of female-headed low-income households	Grants/vouchers for insulation, ventilation, flood-proofing	Female-headed and low-income households	# female-headed households supported; % reduction in losses; improved energy/flood resilience	M45- Incentive schemes to increase extreme temperature resilience of the building stock M48- Climate Risk Assessment for Durrës, Elbasan, Fier, and Beyond: Developing a Comprehensive Vulnerability Map

Energy

No.	Action	Challenge addressed	Description	Beneficiaries	Indicators	Specific contribution to NAP measures
1	Targeted energy poverty relief for women	Energy poverty in female-headed households	Tariff relief and efficient appliances	Female-headed and low-income households	# households supported; % reduction in energy burden	Cross-cutting
2	Train & hire women in renewable O&M	Low participation of women in technical energy jobs	Short courses and internships with utilities/RES	Girls and young women in STEM/TVET; women professionals	# women trained; % women in O&M jobs; retention ≥12 months	Cross-cutting
3	Rooftop PV & EE finance for women MSMEs	Limited capital for women-led energy investments	Grants/credit & TA for PV and EE	Women-owned MSMEs	# women-led MSMEs adopting PV/EE; % energy cost reduction; continuity during shocks	M56- Enhancing Heatwave resilience through Efficient Air Conditioning Technology Deployment and Climate Refuges M58-Optimizing Renewable Energy for Resilient Systems: Grid Innovation and Storage Investments

No.	Action	Challenge addressed	Description	Beneficiaries	Indicators	Specific contribution to NAP measures
4	Mandatory sex-disaggregated energy data	Lack of gendered energy data	Require utilities and ERE to publish gender data	Women in institutions, gender analysts, CSOs	Reporting mandate issued; # datasets published; # policies informed	Cross-cutting

Transport

No.	Action	Challenge addressed	Description	Beneficiaries	Indicators	Specific contribution to NAP measures
1	Climate-safe public transport for women	Safety concerns, heat/ flood exposure	Shade, lighting, emergency buttons; contingency routes	Women workers relying on public transport; vulnerable female commuters	# transport hubs retrofitted; % women reporting safer access; travel-time reduction during hazards	Cross-cutting
2	Women in transport planning & operations	Under-representation in sector boards	Quotas and mentoring for women in planning and ops	Women planners, municipal staff, CSOs	# women in committees; % plans with gender mobility analysis	Cross-cutting
3	Rural women mobility & access pilots	Limited rural transport options	Demand-responsive services, safe walking/ cycling to services and markets	Rural women, vulnerable women and girls	# pilots launched; # essential trips for women; time saved	Cross-cutting
4	Gender-responsive climate finance for transport	Funding gaps for resilient PT benefiting women	PPP/finance instruments to upgrade assets with equity lens	Women users, vulnerable commuters, women entrepreneurs	# instruments designed; private capital mobilized; % projects using low-impact tech	M66 – Innovative Partnerships for Sustainable Transport

08

Communication and stakeholder engagement

Pro-active engagement of stakeholders in climate change adaptation is essential to make adaptation a national priority, to ensure buy-in and to drive decisions and collective action to achieve long-term resilience. In this regard, engagement with key stakeholders and the communication of the right messages about climate change adaptation plays a key role for successfully implementing the NAP.

For this purpose, as part of the NAP process, a Communication and Stakeholder Engagement Plan (CSEP) was carefully designed to strengthen stakeholder capacities with sector-specific toolkits, community guides for local leaders, and educational resources to build climate literacy among youth. Through targeted and inclusive communication, it aims to transform climate adaptation from a policy framework into a movement embraced by stakeholders across all levels of society — policymakers, government institutions, private sector, local communities. academia, media, civil society organizations (CSOs) and international partners.

Recognizing the importance of inclusivity, **the CSEP emphasizes engaging vulnerable groups, women and youth as active participants in climate adaptation processes.** It also integrates initiatives to empower schoolchildren, such as student-led campaigns, workshops, and interactive projects that encourage climate-smart practices like tree planting, energy saving, and recycling. By fostering youth engagement, the strategy hopes to build a new generation who will drive adaptation efforts forward. Interactive tools like virtual workshops, storytelling platforms, and online surveys will deepen engagement and gather feedback.

8.1 Key communication and engagement objectives

There is a key goal for the Communication Stakeholder Engagement Plan, which is:

To position climate adaptation as a national priority in Albania by leveraging strategic communication as a tool to engage stakeholders, foster collective action, and build long-term resilience across all key economic sectors.

This materializes into five objectives that shall guide all NAP communicaton and stakeholder engagement activities:

OBJECTIVE 1

Raise Climate Awareness

This objective emphasizes increasing national awareness of climate risks and adaptation measures through targeted messaging, digital campaigns and community-based outreach. Activities will highlight climate risks, showcase successful adaptation practices, and counter misinformation, ensuring that broad audiences understand the importance of adaptation for Albania's climate-resilient development.

OBJECTIVE 2

Strengthen Institutional Coordination

This objective focuses on building partnerships and coordination across institutions and sectors to ensure that ministries, municipalities and technical agencies have the necessary knowledge and resources to integrate adaptation into decision making. Activities will include workshops, training sessions, and expert consultations, ensuring that decision-makers and stakeholders have access to credible knowledge and collaborate effectively on adaptation priorities.

OBJECTIVE 3

Mainstream Climate into Policy Narratives

This objective ensures that policymakers are supported with communication tools (such as policy briefs, dialogues, and targeted advocacy tools) that mainstream adaptation into national and local development plans. By linking adaptation with economic and social benefits, the CSEP will foster stronger political commitment and integration of climate priorities into policies and plans.

OBJECTIVE 4

Empower Vulnerable Voices

This objective promotes inclusivity by creating opportunities for vulnerable groups to engage in adaptation planning and decision making. Activities will involve targeted workshops, tailored educational materials, and school-based initiatives, enabling women, youth, and marginalized communities to shape Albania's climate resilience agenda.

OBJECTIVE 5

Sustain Commitment and Dialogue

This objective highlights the importance of maintaining engagement over time. Activities will focus on showcasing adaptation achievements, building interactive platforms for knowledge sharing and ongoing feedback, and promoting collaboration with the private sector to secure resources and drive continuous action.

Guiding Principles

All communication and engagement activities in the NAP shall be ruled by the following guiding principles:

Science-Based Messaging: Ensuring that adaptation communication is rooted in climate data, risk assessments, and sectoral studies, as outlined in the NAP.

Multi-Stakeholder Engagement: Strengthening collaboration between government, private sector, civil society, and international partners to accelerate adaptation.

Localization of Strategies: Ensuring that LAPs are effectively communicated and implemented at the municipal level.

Inclusivity and Equity: Prioritizing gender-responsive approaches and participatory decision-making to amplify the voices of women, youth, and marginalized communities.

Transparency and Accountability: Establishing clear monitoring mechanisms to track NAP progress, public engagement, and communication impact.

8.2 Key audicences

The audience target groups for the CSEP are split as follows:

- **Government institutions** lead Albania's NAP implementation by integrating adaptation into sectoral policies and ensuring coherence between national and local actions. The Ministry of Environment, with key line ministries and municipalities, coordinates planning and financing while local governments tailor measures to regional risks. A communication strategy supports this through policy briefs, capacity-building, and progress reports.

- **The private sector** plays a vital role by investing in climate-smart technologies and PPPs, guided by awareness campaigns, forums, and investment roadmaps that highlight the economic benefits of adaptation.

- **Civil society** ensures inclusion and community engagement, supported by toolkits, participatory platforms, and media partnerships.

- **Academia** provides data and research to inform evidence-based decisions, with efforts to make findings more accessible through knowledge-sharing and policy dialogues.

- **The media** sustains public awareness and accountability via training, storytelling, and campaigns on climate resilience.

- **International partners**, including GCF, UNDP, and bilateral donors, supply finance and tech-

nical support, with continued collaboration maintained through progress reporting and high-level dialogue.

Moreover, climate adaptation in Albania must prioritize vulnerable and marginalized groups—such as women, rural populations, and low-income communities—who face the greatest climate risks. Their active inclusion ensures that adaptation efforts are equitable, locally relevant, and sustainable, while drawing on valuable community knowledge.

The NAP emphasizes inclusive communication through accessible formats like local languages, visuals, and community radio to foster participation, especially in rural areas. Participatory methods—such as workshops and focus groups—create space for these groups to shape adaptation decisions. Addressing barriers like transportation and accessibility, and promoting gender-sensitive, culturally appropriate engagement, further empowers communities to take part in building climate resilience.

8.3 Key communication messages for the NAP

The objectives, guiding principles and target audiences informed the design of the key messages that are to be conveyed to duly communicate the NAP. These are summarized in the tables below, first offering the key messages for the NAP overall, and then the key messages for the key priority adaptation sectors. Both tables include also a mention to the target audiences for each message, and how they relate to each of the five key communication and engagement objectives:

Table 16. NAP Communication Objectives

Communication Objective	Communication Focus Area	Key Messages	Target Audiences
Objective 1: Raise Climate Awareness	Climate Adaptation as a Driver of Resilient Economic Growth	*-Climate adaptation is key to protecting Albania's livelihoods, economic stability natural heritage.* *-Investing in adaptation today secures a sustainable future for generations to come.* *-Every sector and community has a role to play local actions build national resilience.* *- Stronger adaptation policies across the five priority sectors enhance competitiveness, attracts climate finance, and creates green jobs.* *Making adaptation a national priority ensures Albania delivers on its Paris Agreement and SDG commitments.*	General public, local communities, and youth, businesses and civil society organizations.

Objective 2: Strengthen Institutional Coordination	Collaborative Action for a Climate-Resilient Future	*-Adaptation succeeds when all institutions, the private sector, academia and communities work together.* *- Partnerships across agriculture, energy, tourism, transport, and urban planning ensure that adaptation action are sustainable and effective.* *- Public-private partnerships (PPPs) leverage innovation and financing for adaptation solutions.* *- Climate-smart agriculture increases food security and creates job stability, particularly for women in rural areas.* *-Resilient energy, transport and tourism infrastructure ensures long-term growth and stability.* *-Diversifying into renewable energy enhances long-term energy security while reducing Albania's carbon footprint.* *-Collaboration and knowledge exchange align resources and innovation for a climate-smart Albania.* *-The private sector plays a crucial role in financing adaptation solutions.*	National and local policymakers, municipal authorities private sector leaders, academia.
Objective 3: Mainstream Climate into Policy Narratives	Embedding Climate Adaptation into Governance and Policy Frameworks	*-Integrating adaptation into national and municipal policies ensures sustainable development.* *-Climate adaptation is an investment, not a cost—ensuring Albania's economic security.* *-Climate risks should be factored into all planning and financing decisions.* *- Policy decisions today shape Albania's resilience tomorrow.* *- Policymakers play a crucial role in securing climate financing and international cooperation.* *- Strong leadership and transparent decisions drive resilient policies and attract international financing.* *-Adaptation is an investment in economic security—prioritize it in your decisions.* *-Strong leadership drives resilient policies. Be the voice that champions Albania's climate future.*	National and local policymakers, influential community leaders, and donors. Journalists and media outlets.

Communication Objective	Communication Focus Area	Key Messages	Target Audiences
Objective 4: Empower Vulnerable Voices	Inclusive Climate Action: No One Left Behind	*-Climate change affects us all, but vulnerable groups bear the greatest burden. Adaptation must ensure no one is left behind.* *- Locally driven community-based solutions make adaptation effective and sustainable* *- Investing in adaptation improves livelihoods, protects vulnerable populations, and builds social resilience.* *-Women, youth and marginalized communities must be active part of climate decision-making.* *-Inclusive adaptation ensures equity, participation and shared benefits for all.*	Women, youth, rural populations, and marginalized communities. Civil society organizations working on social inclusion.
Objective 5: Sustain Commitment and Dialogue	Climate Adaptation as a Collective and Ongoing Effort	*- Adaptation is a continuous process requiring sustained leadership and collaboration.* *- Success stories from LAPs demonstrate the impact of adaptation efforts and inspire replication.* *-Albania is building a resilient future—our success stories show the way forward.* *-Collaboration and knowledge sharing platforms and communication tools sustain engagement over time.* *-Showcasing progress inspires others—together, we can scale these successes for greater impact.* *-Private sector involvement is vital to scale and finance resilient solutions*	National and municipal governments, and private sector actors. Media and educational institutions to sustain public awareness.

Table 17. NAP Communication messages.

Sector	NAP Adaptation Priorities	Key Messages	Benefits	Alignment with Commitments	Target Audiences
Agriculture and forestry	Climate-smart agriculture and efficient irrigation	• Climate-smart farming protects supplies and farmers' incomes. -Adaptation reduces the risks of droughts and floods, ensuring stable harvests for Albanian families. • Efficient irrigation and soil conservation protect Albania's agricultural economy. • Water-efficient irrigation builds resilience for farmers. • Investing in climate-resilient crops strengthens rural livelihoods and long-term resilience. • Empowering women and smallholder farmers in adaptation secures community well-being.	- Protects food security and rural economies. - Reduces risks from droughts and extreme weather. - Supports smallholder farmers, particularly women.	- SDG 2 (Zero Hunger). - Albania's commitments under the Paris Agreement. - National Strategy for Agriculture and Rural Development.	Farmers, rural cooperatives, agribusinesses, agricultural policymakers research institutions.
Energy	Diversification of energy sources and efficiency improvements	• Hydropower alone cannot sustain Albania's future energy needs - diversification is essential. • Renewable energy drives sustainable growth and green jobs. • Solar and wind investments reduce emissions and enhance energy security. • Energy efficiency strengthens resilience: small actions today ensure stability tomorrow. • Diversification reduces vulnerability to drought and climate shocks.	- Ensures long-term energy security. - Reduces reliance on hydropower and vulnerability to droughts. - Creates green jobs and supports low-carbon growth.	- SDG 7 (Affordable and Clean Energy). - National renewable energy Strategy. -UNFCCC and EU accession climate targets.	Energy policymakers, utility companies, renewable energy investors, businesses, financial institutions

Tourism	Climate-resilient infrastructure and sustainable eco-tourism initiatives	• Adaptation safeguards Albania's ecosystems and tourism assets. • Coastal restoration and reforestation protect Albania's top destinations. • Eco-tourism preserves natural heritage while creating jobs. • Climate-smart tourism enhances Albania's global reputation as a sustainable destination. • Sustainable tourism ensures long-term community growth and competitiveness. • Climate-smart tourism enhances Albania's global reputation as a leading eco-tourism destination.	- Protects coastal and mountain areas. - Strengthens local economies and jobs. - Enhances Albania's sustainable tourism profile.	- SDG 8 (Decent Work and Economic Growth). - National Sustainable Tourism Strategy. - Regional climate-friendly tourism commitments.	Tourism operators, hotel owners, local governments, international tourism agencies
Transport	Climate-proofing critical transport infrastructure and promoting sustainable urban mobility	• Resilient transport keeps Albania connected and reduces disruptions. • Flood and heat-resistant roads, and bridges, protect lives and trade. • Durable infrastructure lowers long term repair costs. • Sustainable urban transport reduces emissions and improves mobility for all citizens. • Climate-smart investments in transport systems support economic growth and EU integration.	- Ensures reliable access to goods, services and markets. - Reduces repair costs over time. - Enhances connectivity and safety.	- SDG 9 (Industry, Innovation, and Infrastructure). - Supports Albania's long-term adaptation goals.	Transport planners, municipal engineers, infrastructure developers, policymakers
Urban development	Green infrastructure, flood risk management, and climate-smart urban planning	• Green cities improve air quality, resilience and quality of life. • Climate-smart planning reduces flood and heat risks. • Community-led adaptation fosters inclusive growth and preparedness. • Urban flood management safeguards homes, businesses, and critical infrastructure.	- Reduces urban heat islands and climate risks. - Protects housing and infrastructure. - Enhances community resilience and disaster preparedness.	- SDG 11 (Sustainable Cities and Communities). - National Climate Change Strategy. - EU Urban Resilience Guidelines.	Urban planners, architects, municipal leaders, housing policymakers, private developers.

8.4 Communication and stakeholder engagement action plan

The messages are embedded in the NAP CSEP which is summarized in Table 17:

Table 18. Communication and Stakeholder Engagement Plan.

Activities	Indicators	Targets	Timeline	Responsible parties	Indicative Budget (USD)[132]	Communication Impact Potential
Objective 1: Raise Climate Awareness						
Develop sector-specific multimedia campaigns (TV, radio, and social media) focusing on climate adaptation in five development areas	Number of campaigns Number of audiences reached	6 campaigns (5 for each sector and one general) 1,000,000 views/ listeners	Jan 2026-Dec 2028	NAP Team and Communication Experts and media companies	500,000	Nationwide awareness, tailored to sector-specific challenges and opportunities, fostering engagement across Albania
Create visual tools (e.g., infographics, posters, videos) demonstrating local success stories in climate adaptation in all five key sectors, targeting younger audiences	Number of materials created and distributed for each key sector	5,000 materials distributed	May 2027	All key stakeholders	70,000	Enhanced understanding of successful adaptation practices, fostering replication and support

132. Communication activities of the CSEP are included in the total NAP budget described in the Implementation Plan (above) and NAP Financing (below) sections.

Facilitate field visits with journalists to the most climate-affected regions, enabling them to witness the impact of climate change firsthand and connect it to broader adaptation policies.	Number of field visits Number of participating journalists	3 field visits 30 journalists engaged	Jun 2026-Dec 2027	Journalists Media Associations; Climate Experts.	80,000	Strengthened climate reporting, with increased investigative stories on adaptation challenges and responses.
Develop fact-based media content that directly challenges misinformation with scientific evidence, incorporating fact-checking initiatives into media campaigns.	Number of debunking articles and fact-checking initiatives Number of media outlets engaged	10 in-depth fact-checking pieces published 5 major media outlets involved	Jan 2026-Dec 2028	Investigative Journalists; Communication Team; Scientific Institutions.	90,000	Reduced climate misinformation, increased credibility of climate-related news.
Encourage investigative climate journalism, where reporters actively question policymakers and demand accountability on adaptation commitments.	Number of investigative stories published Number of training sessions for journalists	8 investigative reports published 4 training sessions	June 2026-Dec 2028	Journalists Training Institutions.	150,000	Strengthened media independence in climate reporting, leading to more informed public discourse.

Objective 2: Strengthen Institutional Coordination						
Conduct multi-sectoral workshops, training, meetings with stakeholders in agriculture, energy, transport, and tourism to define their roles in adaptation strategies.	Number of workshops, training etc., as per sector Number of participants	25 workshops, training meetings etc. 600 participants	June 2026-June 2028	Sectoral Ministries; Private Sector Partners	200,000	Clearer understanding of roles, leading to more cohesive, inclusive adaptation strategies.
Establish a dedicated pool of climate experts, ensuring journalists and policymakers have direct access to credible information for evidence-based reporting and decision-making.	Number of expert profiles available Number of expert consultations	1 expert pool created 50 consultations provided	Jan 2026-Dec 2027	Scientific Institutions UNDP Journalists	75,000	Improved quality of climate discourse in media and policymaking.
Ensure greater collaboration between journalists and climate scientists, making complex data more accessible to the public.	Number of collaborations Number of simplified climate reports published	5 expert-journalist workshops 10 climate reports published	Apr 2026-Dec 2028	Climate Research Institutions Journalists UNDP	100,000	Increased scientific accuracy in climate news and public awareness materials.

Organize journalist training programs with climate experts to provide specialized knowledge on adaptation strategies, policy frameworks, and data interpretation.	Number of training programs Number of journalists trained	4 programs 80 journalists trained	Jan 2026-Dec 2028	Journalist UNDP Training Institutions; Climate Experts.	180,000	Strengthened capacity for high-quality climate journalism.
Publish toolkits on climate-smart practices for agriculture and tourism, and green infrastructure for urban development.	Number of toolkits distributed/ downloaded	5,000 copies 3,000 downloads	Feb 2027	Sector Experts; Communication Team	100,000	Practical guidance for stakeholders, fostering adoption of adaptation measures.
Objective 3: Mainstream Climate into Policy Narratives						
Develop policy briefs emphasizing economic benefits of renewable energy, resilient transport systems, and green urban spaces.	Number of policy briefs shared Policymaker feedback	5 briefs shared with 150 policymakers	Feb 2027-Dec 2027	Ministry of Finance; Sectoral Ministries	150,000	Stronger political commitment to adaptation integration into national policies.

Organize high-level policy dialogues with key stakeholders in agriculture, energy, and transport sectors.	Number of dialogues held Policy outcomes	5 dialogues Policy recommendations adopted	Sept 2027	Sector Ministries; Advocacy Specialists	100,000	Accelerated policy alignment with adaptation priorities.
Objective 4: Empower Vulnerable Voices						
Facilitate targeted workshops, meeting, training etc. for women and youth on climate-smart agriculture, energy efficiency, and sustainable tourism.	Number of workshops Number of participants	15 workshops, meetings, events 300 participants	Jan 2027-Dec 2027	Women's Groups; Community Leaders	75,000	Empowered participation in adaptation processes by vulnerable groups.
Create and distribute educational materials tailored for rural communities and schools, focusing on youth engagement in adaptation.	Number of materials distributed School and community engagement rates	10,000 copies 200 schools	Nov 2027	Ministry of Education; NGOs	100,000	Youth-driven engagement ensures long-term behavioral shifts in climate resilience.

Strengthen literacy programs, particularly in schools, to help younger generations critically assess climate information.	Number of schools engaged Number of awareness sessions	100 schools 20 awareness sessions	Sept 2026-Dec 2028	Ministry of Education; NGOs	100,000	Improved youth resilience to climate disinformation.
Objective 5: Sustain Commitment and Dialogue						
Highlight adaptation achievements through blogs, videos, and newsletters showcasing efforts across all five sectors.	Number of success stories shared Engagement metrics	15 success stories 1,000,000 views	Jan 2028-Dec 2028	Communication Team; Local Project Leaders	100,000	Sustained momentum and increased investment in successful adaptation practices.
Launch a digital platform to monitor adaptation progress and engage stakeholders with updates and feedback loops.	Platform launch Active users Feedback submissions	1 platform 5,000 active users	Oct 2027-Mar 2028	IT Team; Communication Team	60,000	Continuous engagement fosters transparency and collaborative adaptation planning.

09

Financing of the NAP

The total costs for the NAP 2026-2036 planning amount to USD 9,8 billion as introduced already in Implementation Plan for prioritized action133, which includes the costing of the adaptation actions and of the mainstreamed gender and communication actions within.

Funding this substantial amount requires thorough planning and identification of suitable internal and external funding sources and instruments. To address this, a **Financing Strategy** has been drafted for which a detailed financing needs and gaps analysis was conducted, identifying strategic approaches to mobilize finance while considering the national budget planning cycles and options.[133] This NAP Financing Strategy will ensure that sufficient and sustainable financial resources are mobilized and effectively allocated to implement Albania's adaptation priorities for which it provides:

1. An analysis of funding gaps, comparing the total expected costs and foreseen disbursement needs against the available budgets, showing that currently there is a total gap of about 93% of the funding needs, which the gap varying per sector.

2. An identificaton of key barriers for reaching the budget target such as economic barriers and fragmented donor engagement, low private sector participatin in adaptation financing or the need for certain policy reforms; togethre with enabling mechanisms to address those.

3. An strategic approach to mobilize domestic, international, public, private and blended climate finance.

4. A proposed approach to prioritize the investments and a phased roll-out throughout the next decade.

5. A funding plan to mobilize and manage the financing resources required aligning the identified needs with the most appropriate sources of finance.

These key elements of the Financing Strategy are summarized below and are shown in more detail in the separate document: NAP Financing Strategy.

9.1 Adaptation Financing Needs

Overall, Albania's adaptation needs are substantial, with an estimated USD9.8 billion required to finance the 66 priority adaptation measures under the NAP Implementation Plan 2026–2036, hence the need for a Financing Strategy that ensures that sufficient and sustainable financial resources are mobilized and effectively allocated to implement Albania's adaptation priorities.

Adaptation funding needs are largest in the urban development and infrastructure sector (~USD2.7 billion), **followed by forestry** (~USD2.1 billion), **transport** (~USD2.03 billion), **and energy** (~USD1.96 billion). The agriculture sector's adaptation needs are more moderate (~USD0.6–0.7 billion), while tourism and cross sectoral budgets account for a small share of the total NAP cost (~USD0.8 billion and ~USD0.3 Billion respectively). When these allocations are annualized and compared to Albania's current GDP (estimated at USD 28.37 billion in 2025),

133. Albania's Implementation Plan for prioritized adaptation actions. Prepared under UNDP NAP Project. Ministry of Environment, 2023-2025.

Table 19. Projected investment for the period 2026-2042.

Period	Annual Projected Disbursement (mln USD)	Total (mln USD)	% of GDP (in 2025)
2026–2028	180.6	542	0.6
2029–2032	652.4	2610	2.3
2033–2042	664.9	6649	2.3
Average/Total	**576.5**	**9800**	

the short-term expenditure (2026–2028) would correspond to an average of approximately USD 180.6 million per year, representing about 0.6% of GDP (Table 18). For the medium term (2029–2032), the average annual investment of USD 652.4 million corresponds to roughly 2.3% of GDP. Over the long-term period (2033–2042), the average annual investment would reach approximately USD 664.9 million, equating to around 2.3% of 2025 GDP. However, if Albania's economy grows at a steady rate of 3.5% annually, GDP would increase to approximately USD 39.5 billion by 2036 and reach nearly USD 48.9 billion by 2042. In this scenario, the annualized adaptation disbursement of USD 576.5 million per year over 17 years (2026–2042) would represent around 1.18% of projected 2042 GDP, demonstrating that GDP growth is likely to help easing the relative annual fiscal burden[134].

While substantial, this investment level is considered fiscally feasible, particularly if supported by concessional finance, phased budget allocations and full integration into national public investment frameworks. Even when these sums are daunting, **the cost of inaction would likely be higher, as severe climate damages could erase years of development progress. Investing in resilience is fundamentally an investment in safeguarding economic stability and growth and will yield a substantial return across the priority sectors where the most investment should take place**, i.e. agriculture, energy, transport and urban development, through avoided losses (estimated at over USD17 billion with no action), accelerated economic potential (USD5.3 billion) and amplified social and environmental co-benefits (USD2.5 billion). This equates to a total impact of nearly USD24.8 billion[135] on a USD9.8 billion outlay, i.e. a benefit–cost ratio of approximately 2.5.

9.2 Existing Commitments and Funding Gap

Despite recent efforts to foster adaptation finance, existing funding falls far short of the indicated adaptation financing needs. The Government of Albania has earmarked roughly USD310 million for adaptation actions across sectors in its 2025–2027 Medium-Term Budget Program (MTBP) and national sectorial strategies, with the largest shares going to forestry (USD194 million), and agriculture (USD80 million). International partners – including the EU, World Bank, Green Climate Fund (GCF), and others – are supporting adaptation through grants and loans,

134. Albania's Climate Adaptation Financing Strategy. Prepared under UNDP NAP Project. Ministry of Environment, 2023-2025.
135. Data drawn from Market study report and the Implementation plan report. Prepared under UNDP NAP Project. Ministry of Environment, 2023-2025.

Table 20. Estimated Adaptation Financing Needs, Current Funding and Gap by Sector.[136]

Sector	Estimated Cost (USD)	Committed National Public Funding[137]	International Funding[138]	Current committed Funding	USD Gap over total period	% Gap over total period
Agriculture	678,114,861	~USD80 mln	~USD 68 mln	~148 mln	529 mln	78
Forestry	2,134,799,556	~USD193 mln	~USD7 mln	~200 mln	1.933 mln	91
Urban development	2,723,161,544	~USD4 mln	~USD23.5 mln	~27.5 mln	2.695 mln	99
Tourism	8,491,619	~USD1 mln	~USD13 mln	~14 mln	0	0
Energy	1,960,573,000	~USD22 mln	~USD275 mln	~297 mln	1.663 mln	85
Transport	2,038,835,000	~USD1 mln	~USD2,5 mln	~3.5 mln	2.035 mln	100
Cross Sectoral	256,721,396	USD2.7 mln	USD4 mln	~6.7 mln	249 mln	97
Total	**9'800'696'976**	**USD306 mln**	**USD393 mln**	**USD699 mln**	**USD9'107 mln**	**93**

but not at the required scale.

Table 19 summarizes the adaptation investment needs by sector, the total financing already committed or allocated from public funding (2025–2027), as well as financing from international sources. It also highlights the remaining funding gaps that need to be addressed.

The above illustrates that Albania faces substantial financing gaps in most sectors, with a critical 93% overall gap. Only 7% of the required funding has been committed through the Medium-Term Budget Program (MTBP) 2025–2027. Except for tourism which shows no gap, the financing gaps are high across all other sectors, with forestry, urban development and cross sectoral showing gap levels above 90% and even near 100% (transport). These shortfalls show that significant funding will have to be mobilized to support the adaptation financing needs in this NAP.

9.3 Barriers to overcome the Adaptation Financing Gap

Albania's adaptation financing landscape faces a range of barriers that hinder large-scale adaptation finance deployment:

1. Economic Barriers and Fragmented Donor Engagement

- High upfront costs of key measures (e.g., irrigation, coastal protection) amid underdeveloped capital markets and no green bond issuance.
- Limited access to risk mitigation instruments, with a reinforced insurance market being much needed, especially for rural communities.
- Fragmented donor landscape causes duplication and gaps, with tourism adaptation particularly underfunded.
- Weak feasibility data and unclear returns make adaptation projects less attractive for concessional or MDB financing.

136. Albania's Climate Adaptation Financing Strategy. Prepared under UNDP NAP Project. Ministry of Environment, 2023-2025.
137. Including the budget of MTBP 2025–2027
138. Secured and pipeline

2. Sector-Specific Challenges

- Energy: Heavy hydropower dependence and lack of storage expose sector to drought; unclear regulation deters private investment.
- Transport: Frequent flood damage and missing resilience standards in tenders hinder climate-proofing.
- Agriculture and forestry: Small farms lack credit and insurance, limiting uptake of climate-smart practices; also new incentives for maintaining and reforesting forest areas are needed to fund adaptation in the sector.
- Tourism: Highly exposed to erosion and weather shifts; few financial tools or PPPs for resilient tourism.
- Urban: Rapid urbanization and poor enforcement of codes delay green and resilient infrastructure.

3. Project Preparation and Coordination Gaps

- Few "bankable" projects with full feasibility studies restrict access to major funds.
- Lack of an institutional coordination body or secretariat under IMWGCC causes donor overlap.
- No unified climate finance tracking system to monitor, report, or align adaptation spending.

4. Low Private Sector Participation

- Minimal private investment in adaptation (accounts for 5% of national adaptation finance) due to missing de-risking tools, fiscal incentives, and regulatory clarity.
- Green finance ecosystem is still in early stages: There are no climate bonds or insurance products and there is limited ESG lending pilots led only by a few banks.
- Early steps include proposed VAT exemptions, blended finance under road programs, and PPP pilots.

5. Institutional, Regulatory, Market, and Capacity Constraints

- Delayed secondary legislation and misaligned tariffs discourage PPPs in water and infrastructure.
- No National Climate Fund or effective budget tagging system to channel finance.
- Limited equity focus-mountain regions like Kukës and Dibër remain underfunded despite high vulnerability.

6. Policy and Regulatory Reforms

- Increasing domestic budget allocation and fast-tracking a National Adaptation Fund would improve financing stability.
- Proactive engagement with EU and WBIF mechanisms could leverage larger, regional-scale projects.
- Establishing robust monitoring and evaluation systems would demonstrate impact and attract further funding.

7. Other Challenges

- Climate uncertainty may cause major underestimation of adaptation costs (e.g., sea-level protection in Durrës).
- Weak MRV systems and lack of standardized indicators hinder assessment of adaptation effectiveness and investment justification.

9.4 Enabling mechanisms to overcome the adaptation financing gap

To facililtate access to funding, a series of enabling mechanisms can be used in the country:

- **Blended financing structures.** Albania's adaptation Financing Strategy hinges on scaling up blended finance, combining concessional and commercial capital to de-risk private investment, including some actionable instruments and pilots such as guarantees and risk-sharing facilities; the Green for Growth Fund (GGF) and a pilot of tourism adaptation bonds which are being discussed.

- **Integration of adaptation into development finance.** Albania's adaptation strategy centers on integrating climate resilience into all devel-

opment finance, ensuring new infrastructure is climate-proof. International partners like the EIB and WBIF already require climate risk screening, with successful pilots in Shkodër and Tirana demonstrating feasibility. The Implementation Plan builds on this by identifying co-financing opportunities, such as leveraging GCF funds for EU-backed projects, and prioritizes 66 cost-effective measures attractive to donors and investors. Scaling up finance, however, requires enabling reforms—finalizing climate budget tagging, introducing carbon pricing, and aligning tariffs to attract PPPs. Stronger land-use enforcement, improved data systems, and expanded technical and institutional capacity are also essential. Finally, fostering collaboration among government, private sector, and communities is key to developing a functional market for nature-based solutions that underpins long-term climate resilience and sustainable growth.

9.5 Strategic Approach

Effectively mobilizing resources and financing Albania's adaptation priorities will require a multi-pronged strategy, combining domestic resource mobilization, enhanced access to international climate finance, greater engagement with the private sector, and the development of innovative financial instruments, as well as cross-sectoral measures increasing the country's adaptive capacity[139].

Domestic Resource Mobilization

- **Strengthening domestic contributions is essential for leveraging international funds and ensuring sustainability.** This could be done through the following:
- **Increasing State Budget Allocations**, with Albania to commit to mobilizing at least 20% of the total financing needs from domestic resources by 2030.
- **Ministries to demonstrate how Medium-Term Budget Programme (MTBP) allocations support NAP and the adaptation components of its NDC**.
- **Introducing a Climate Budget Tagging (CBT) system** to track adaptation expenditures (currently under development).
- **Developing a green budgeting screening tool**, where every line item in the national budget is classified according to its relevance to climate adaptation expenditures (high-medium-low).
- **Aligning fiscal instruments with climate objectives** (e.g. taxes, levies and subsidies).
- **Making the State Audit to incorporate adaptation-tagged expenditures into its annual audit cycle**
- **Mobilizing municipal budgets** to finance small-scale local adaptation interventions.
- **Establishing a National Climate Fund** to pool public resources.
- **Undertaking a Green fiscal reform** (e.g. green taxes, environmental levies)
- **Reviewing and correcting utility tariffs**, to reflect environmental externalities and create a more attractive environment for private investment in adaptation-related infrastructure.
- **Monitoring and leveraging successes**, to demonstrate effective use of funds can help mobilize more.

International Climate Finance

Accessing international climate finance remains essential for closing Albania's adaptation funding gap. The government aims to strengthen partnerships with major funds—including the Green Climate Fund (GCF), Global Environment Facility (GEF), Adaptation Fund (AF), and the EU's IPA III—while preparing a flagship multi-sector adaptation proposal for GCF submission in 2025. This proposal aligns with the national GCF Country Programme and the Implementation Plan's costed priorities, leveraging domestic

139. Albania's Climate Adaptation Financing Strategy. Prepared under UNDP NAP Project. Ministry of Environment, 2023-2025.

and bilateral co-financing to maximize impact. To improve coordination and efficiency, a dedicated pipeline coordination mechanism will be established under the Climate Finance Coordination Unit (CFCU) within the Ministry of Environment. This will streamline project preparation, support additional GCF Readiness proposals, and strengthen financial instrument design. Albania will also deepen participation in regional initiatives such as the Western Balkans Green Agenda and mobilize cross-border financing through the WBIF and EIB's Adaptation Window.

Key financing sources include large-scale GCF support for cross-sectoral adaptation, GEF and AF grants for ecosystem-based and community-level actions, and IPA III funding for climate-proof infrastructure and policy reform. Complementary financing from MDBs, UN agencies, and bilateral donors (e.g., Germany, Switzerland, USA) will enhance implementation. Finally, innovative instruments like debt-for-nature swaps—leveraging Albania's natural capital, such as the Vjosa River—offer untapped potential to fund nature-based solutions and strengthen long-term climate resilience.

Mobilizing Private Capital

Albania's financial system is highly bank-centric, with enterprises—especially SMEs—relying mainly on debt financing from banks and microfinance institutions. Capital markets remain underdeveloped, green bonds are virtually absent, and non-bank financial intermediaries are limited, constraining access to diverse financing instruments. Weak corporate disclosure on climate risks and the lack of a unified database on emissions and investment performance further hinder sustainable investment flows. High upfront costs and inadequate risk-sharing mechanisms deter private participation in renewable energy, infrastructure, and adaptation projects, while PPPs remain underutilized.

The adoption of ESG and EU-aligned sustainability standards, such as the Sustainable Finance Taxonomy and CSRD, is still in its early stages. Limited awareness and technical capacity among firms make Albanian businesses less attractive to green investors and risk excluding them from EU markets. Commercial banks, meanwhile, have been slow to develop climate-related financial products due to limited expertise and weak climate risk assessment frameworks.

To address these challenges, Albania is piloting blended finance models—such as the Adriatic Resilience Fund, which combines GCF grants, EIB loans, and private equity to finance eco-tourism and agroforestry projects, achieving a 1:3 public-private leverage ratio. Scaling this approach will require stronger risk mitigation tools, concessional finance, and regulatory clarity. The government plans to expand blended finance and PPP mechanisms, issue green and resilience bonds, develop insurance and catastrophe risk instruments, and introduce incentives like tax rebates and concessional credit lines.

Mobilizing private finance will be critical to scaling adaptation investment and building long-term climate resilience, for which key areas of focus should include:

- Expand the use of Public–Private Partnerships[140] (PPPs).
- Introduce Green and Climate Bonds[141].
- Pilot Insurance Instruments[142].
- Strengthen Corporate Social Responsibility[143] (CSR).

140. Public-Private Partnerships (PPP) is a tool that governments can employ to help deliver needed infrastructure services. PPPs are a way of contracting for services, using private sector innovation and expertise, and they often leverage private finance. (World Bank)
141. A bond is a fixed-income investment product where individuals lend money to a government or company at a specified interest rate for a predetermined period.
142. E.g. Agriculture or weather-index insurance.
143. Corporate Social Responsibility is a management concept whereby companies integrate social and environmental concerns in their business operations.

Innovative Instruments

Albania is pursuing innovative financing instruments to expand its adaptation finance portfolio and enhance fiscal resilience. A feasibility study for the country's first green bond is planned for 2026, drawing on regional experiences from Serbia and North Macedonia. In agriculture and nature-based solutions, results-based climate finance pilots will link disbursements to measurable outcomes such as ecosystem restoration or improved yields under climate stress. Albania is also engaging in the establishment of a regional climate risk insurance facility (SECRIF) to provide coverage against extreme weather events for governments, municipalities, farmers, and SMEs. These initiatives aim to diversify funding sources, mobilize private investment, and strengthen climate risk management. Their success will depend on robust institutional coordination, continued donor support, and regulatory reforms to attract large-scale capital through mechanisms like co-investment platforms and blended finance arrangements.

9.6 Timing and proposed roll-out for the NAP's Financing Strategy

Funding the NAP requires a well-thought and phased approach to take advantage of available resources while securing additional funding. The proposed approach for the short-, medium- and long-term of the NAP's ten-year period is structured as follows:

Short-Term (2026-2028)

A total of 56% of adaptation measures in the Implementation Plan fall under the short-term start category, reflecting their foundational role in enabling broader adaptation progress, particularly for "soft" measures that require less preparation (e.g. those focused on coordination and communication). Immediate short-term "soft" costing with its focus is on establishing enabling conditions – operationalizing the adaptation fund, securing initial GCF and donor funding for "ready" projects, building institutional capacities, and integrating adaptation into annual budgets - is around USD219 million. During this period, Albania does have some resources in hand. The national allocations provide a baseline of domestic spending (~USD160 million over 2026–28 across sectors), and some donor projects will be disbursing during this period, potentially totaling another ~USD37 million. Some of the early quick-win measures are already covered: e.g. development of plans and regulations (tourism ICZM, urban plans) are funded through government or small grants. But capital-intensive projects in forestry, urban, transport remain largely unfunded in the short term, meaning potentially little physical progress on those fronts by 2028 beyond studies and pilots.

Medium-Term (2029-2032)

This period is critical, when many adaptation investments should peak. If all pipeline projects come through, the financing landscape in 2029–32 could improve, raising potentially an additional USD500–600 million. Sectors like agriculture might close much of their gap by 2030 if planned projects are implemented. Tourism's needs could also be largely met through integration into other projects. But urban, forestry, energy, transport will likely carry residual gaps into 2032, further extended by 2036. The implication is that Albania risks leaving many climate risks unaddressed, potentially causing economic and human losses that far exceed the investment costs.

Long-term (2033–2050)

Some 11% of measures are scheduled with a long-term start, underscoring the need to initiate most activities without delay. The long-term 2033–2050 period must not only tackle the remainder of the plan by that time but also adapt to evolving conditions. If by 2032 Albania manages to mobilize ~25% of needed funds, the remaining ~60% (roughly USD5.3 billion) becomes the long-term gap. In the long term, the strategy envisions

sustainable financing flows with greater domestic budget allocation and self-sustaining mechanisms. Proactive investment now can reduce future costs. If this doesn't materialize, by 2050 Albania might face substantial annual climate damages of hundreds of millions that will burden the economy.

The following outlines the sequencing of the Financing Needs Strategy:

- **2025/2026 – Preparation and Early Pilots.** A one-off reprogramming of USD 30 million from under-utilized MTBP lines is allocated to ten "low-cost, high-impact" pilots and the drafting of complete GCF / EU IPA proposals.

- **2026–2028 – Short-Term Roll-Out.** The first tranche of 24 priority measures, with in 2026: USD 50 million; 2027: USD 75 million; 2027: USD 100 million green bond; 2028 – Blended Finance Scaling (USD200 million total).

- **2029–2030 – Loans & Bilateral Grants.** USD 200 million in EIB concessional lending for Phase 2 transport and energy resilience; USD 150 million in World Bank financing for ecosystem-based agriculture and municipal resilience investments; USD 100 million in bilateral grants (KfW, JICA, Nordic donors) to support technical assistance and cross-sector readiness. By the close of 2030, fifty of the sixty-six measures will be fully financed and in execution, with cumulative disbursements reaching approximately USD 600 million, about 75% of the USD 800 million short-term envelope.

- **2031–2033 – Institutionalization & Major Capital Works.** USD 200 million second green-bond issuance strengthens domestic capital markets and underwrites regional water-storage and flood-control dams; USD 300 million of EIB/World Bank flexible-credit co-finance funds major urban green corridors and dam construction.

- **2034–2035 – Mainstreaming & Sustainability.**

Detailed Funding Plan (2026 – 2028)

The short-term priority plan seeks to align identified investment needs with the most appropriate sources of finance, domestic, international, public, and private, while addressing key barriers and institutional capacity gaps that may hinder effective delivery. See also below for a summary, Table 20 and the NAP Financing Strategy Document.

The NAP Financing Strategy marks a decisive step toward building a climate-resilient future providing a clear roadmap to mobilize the billions needed for adaptation, combining international, domestic, and private resources through practical and innovative financing tools. The strategy aligns with EU integration goals and international best practices while emphasizing strong partnerships across government, development partners, the private sector, and civil society. Its success will depend on sustained political commitment, effective coordination, and continued capacity building.

While challenges remain—such as attracting private investment, meeting donor criteria, and strengthening fund absorption—the benefits of early and proactive adaptation far outweigh the costs of inaction. By translating this strategy into concrete investments in resilient infrastructure, climate-smart agriculture, and ecosystem protection, Albania can safeguard its economy and communities while unlocking new opportunities for sustainable growth. With implementation under way, including the GCF proposal and climate budget tagging by 2025, Albania is poised to become a regional model for financing climate resilience through foresight, collaboration, and action.

Table 21. Priority Funding Plan 2025-2028.

Sectors	Main Funding Sources	Est. Volume (USD)	National committed	International committed	Gap	Timeline	Proposal Readiness	Lead Institutions	Co-Financing Modality / Donor Alignment
Cross-sectoral	GCF; MoF budget; bilateral technical grants	256.721.396	6.705.576	35.000	249.980.820	2025–2035	Q2 2025 (GCF concept note)	Ministry of Finance; MoTE; NDA	30% domestic tagging; GCF grants; UNDP technical support
Agriculture	GCF; MoF budget; IFAD; EU IPARD	678.114.861	97.740.426	51.037.406	529.337.029	2025–2029	Q3 2025 (GCF full proposal)	Ministry of Agriculture; MoTE; NDA	30% national budget; aligned with EU IPARD and IFAD lines
Forestry	World Bank (IBRD); GCF; bilateral grants	2.134.799.557	193.912.596	6.924.050	1.933.962.911	2026–2028	Q4 2025 (IBRD concept note)	Ministry of Environment; MoF	Blended IBRD loan + 25% municipal co-finance
Tourism	EU IPA III; EBRD; private-sector PPPs	8.491.619	4.346.901	10.285.819	0	2026–2029	Q4 2025 (EU IPA pipeline)	Ministry of Tourism, Culture and Sport; NDA; Local authorities	PPPs with tour operators; co-finance via EU Tourism Facility
Urban development	World Bank (IDA); GCF; municipal budgets	2.723.161.544	4.060.192	23.491.259	2.695.610.093	2026–2030	Q1 2026 (IDA concept note)	Ministry of Infrastructure; MoTE; Municipalities	25% municipal budget; MDB concessional loans; GCF grants
Energy	EIB; World Bank (IBRD); IFC	1.960.573.000	224.477.993	72.482.385	1.663.612.622	2027–2031	Q2 2026 (EIB expression of interest)	Ministry of Infrastructure & Energy; NDA	PPP frameworks; EC guarantees; 20% private equity
Transport	EIB; EBRD; national budget	2.038.835.000	1.228.960	2.455.520	2.035.150.520	2027–2032	Q3 2026 (EBRD scoping mission)	Ministry of Infrastructure; MoF; Municipalities	MDB concessional loans; national matching funds

10

Monitoring, evaluation and learning

The effective implementation of Albania's National Adaptation Plan requires a system to track progress, assess effectiveness, and foster continuous learning. For this purpose, an internal Monitoring, Evaluation and Learning (MEL) framework document was developed to operationalize a comprehensive and integrated system in alignment with Albania's legal and policy framework and guided by the provisions of Decision of the Council of Ministers (DCM) No. 889/2022.

In this context, the Decision of the Council of Ministers No. 889/2022 formally establishes Albania's framework for climate monitoring and reporting, defining the institutional and procedural foundations for operationalizing the MEL system. It specifies that:

1. Monitoring of national adaptation measures involves the systematic collection of information by responsible institutions to track the progress of adaptation actions and the achievement of adaptation objectives outlined in the NAP.

2. Monitoring entails the collection of data from institutions operating in sectors impacted by climate change, including water, agriculture, tourism, biodiversity, forestry, energy, transport, infrastructure and urban development.

3. The evaluation of adaptation actions focuses on determining their effectiveness, impact, efficiency, and sustainability, as well as the extent to which the specific adaptation objectives have been achieved.

The DCM 889/2022 also mandates a structured approach to data collection and reporting. Ministry of Environment is the central body for Monitoring & Evaluation coordination, data oversight, and reporting to national and international entities (e.g. UNFCCC, EU). Line ministries and Local Government Units (LGUs) must provide the National Environment Agency (NEA) with data on adaptation measures annually (by March 31), following the formats of the DCM. Sectoral Focal Points from the respective sector ministries in collaboration with their respective statistical units, collect and report sector-specific monitoring data to MoE/NEA, based on their roles and responsibilities. NEA then verifies and processes the received reports and data according to the M&E Methodology approved by the minister.

The Institute of Geosciences (IGEO) and other research entities provide climate-related data, conduct studies and support the development of methodologies and technical tools for the climate change MRV (Measurement, Reporting, and Verification) system. The Institute of Statistics (INSTAT) provides socio-economic data on population and other related data. The private sector may also submit data and contributes to M&E through engagement in adaptation initiatives. The CCAWG under the IMWGCC coordinates the collection, review, and submission of these reports. The NAP M&E system also supports Albania's compliance with its international and regional reporting obligations, e.g. to the UNFCCC (especially the Biennial Transparency Reports, Adaptation Communications and National Communications), and the Energy Community Secretariat.

Following the DCM and above considerations, this NAP Monitoring Evaluation and Learning framework was developed, through a broader

consultation process. The implementation of the NAP MEL system will:

- Support transparency and accountability by sharing results with stakeholders and the public, increasing awareness and knowledge.
- Ensure inclusive tracking of progress, thereby addressing the needs of different population groups and regions.
- Promote cross-sectoral collaboration, coordination and knowledge sharing.
- Enhance resource efficiency by leveraging existing data and tools and strengthening the case for scaling up successful approaches.
- Foster learning.
- Contribute to fulfilling Albania's obligations under EU and international frameworks.

10.1 Results framework

The developed NAP MEL consists of a Results Framework, which presents how the measures of the NAP will lead to resilient and sustainable priority sectors, supported by implementing the cross-cutting measures that will lead to improved adaptative capacity across these sectors. This will eventually lead to the NAP Objective of: "Albania able to adapt to climate change though reduced vulnerability, increased resilience and strengthened adaptive capacity", which follows the main objectives of the UNFCCC, the Global Goal on Adaptation (GGA) and the European Climate Adaptation Strategy. This in turn should eventually lead to the National Adaptation Goal of: "A resilient Albania adapted to climate change" that will support the overall Vision of: "A dynamic, secure, prosperous and sustainable Albania, anchored in Europe" as paraphrased from the NSDEI.

The above results framework refers to the NAP Implementation Measures mentioned in Table 10 and further detailed in **Annex III**, including detailed Activities and Indicators.

10.2 Monitoring component

The monitoring_component of the MEL tracks progress of NAP implementation through a structured indicator system. The MEL system uses qualitative and quantitative indicators that track progress for:

1. Resilience Strengthening (2 indicators), Vulnerability Reduction (2) and Improved Adaptive Capacity (5) at National Level (see Results Framework above);
2. Sectoral Adaptation Outcomes (25 Indicators, see Results Framework above);
3. Implementation of Individual Adaptation Measures (165 Indicators, see Results Framework above and the Annex IV: Implementation Plan which proposes indicators for all 66 measures).

In addition to these performance indicators, a complementary set of process indicators has been developed to monitor institutional, regulatory, financial, and coordination-related progress under the NAP. These indicators do not measure the direct outcomes or impacts of adaptation measures but instead track the establishment and strengthening of systems and the enabling environment required for sustained and effective adaptation within the framework of the Second NAP. The selected indicators draw on best practices from established frameworks (GIZ, TAMD, OECD) and have been adapted to Albania's governance structure and the NAP's implementation needs.

Figure 21. NAP Results Framework

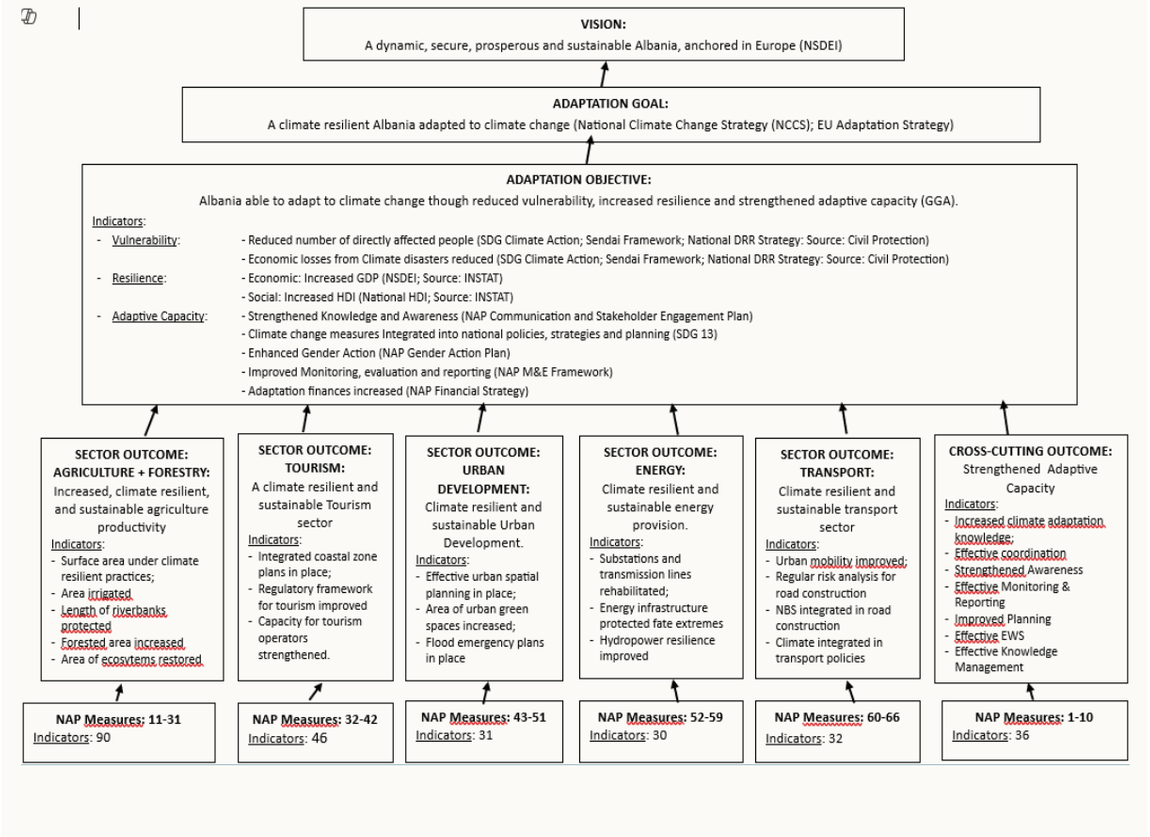


Table 22 Process indicators of the NAP.

Name of the Indicator	Level	Unit of Measurement	Responsible Institutions	Specific Objective Related to the Indicator	Indicator Classification	Source of Data for Monitoring the Performance Indicator	Responsible Institutions for Data Collection	Description / Methodology
Functionality of the IMWGCC	National	Percentage of formal meetings held with the participation of at least 80% of the member institutions	Ministry of Environment, IMWGCC Secretariat	Ensure the operational effectiveness of the Inter-Ministerial Working Group on Climate Change (IMWGCC)	Quantitative	IMWGCC meeting records, attendance sheets, Secretariat reports	IMWGCC Secretariat, MoE	Measures the regularity and inclusiveness of formal IMWGCC meetings. Focuses on the frequency of meetings and whether a quorum (80% of member institutions) was reached.
Rate of Implementation of Adaptation Measures	National/ Subnational	Percentage of prioritized adaptation measures planned in the NAP for implementation during the year	MoE, Local Government Units (LGUs), Regional Climate Focal Points	Monitor the annual implementation progress of NAP-prioritized adaptation measures at both national and subnational levels	Quantitative	Annual progress reports from MoTE and LGUs	MoE, LGUs, Regional Climate Focal Points	Calculates the percentage of short-term priority adaptation measures (as defined in the NAP Implementation Plan) that were effectively implemented within the planned timeframe.
Adaptation Mainstreaming into Sectoral and National Policy Frameworks	National/ Sectoral	Percentage of approved policy documents integrating NAP-linked climate adaptation measures	MoE, Line Ministries	Assess the extent to which climate adaptation objectives are mainstreamed into new or revised policy instruments	Quantitative	Official policy documents, ministerial publications, MoTE/NAP monitoring reports	MoE Directorate of Climate Change and Environmental Policies, Climate Focal Points in Line Ministries	Reviews all approved national and sectoral policy documents within a given biennial period to identify whether they explicitly incorporate climate adaptation measures that align with NAP priorities.
Availability and Accessibility of Adaptation Finance	Cross-sectoral	(a) USD allocated and disbursed annually; (b) % of funding disbursed to subnational/ local levels	MoE	Monitor the availability of funding for adaptation and the extent to which funds reach decentralized/local actors	Quantitative	National budget reports, donor disbursement records, MoF/ MoTE climate finance tracking tools	Ministry of Finance, MoE	Tracks total funding (domestic and international) allocated and disbursed for NAP-linked adaptation actions per year. A second component tracks the share of this funding that was received at the subnational/ local level.

Name of the Indicator	Level	Unit of Measurement	Responsible Institutions	Specific Objective Related to the Indicator	Indicator Classification	Source of Data for Monitoring the Performance Indicator	Responsible Institutions for Data Collection	Description / Methodology
Stakeholder Engagement in the NAP Process	Municipal/ National	Number of stakeholder engagement instruments piloted	MoE, LGUs, Civil Society Organizations (CSOs)	Ensure that multi-stakeholder consultations and participatory tools are integrated and operationalized across levels during NAP implementation	Quantitative	MoTE stakeholder engagement records, reports from LGUs and CSOs	MoE stakeholder engagement records, reports from LGUs and CSOs	Measures the number of formally piloted stakeholder engagement mechanisms during the reporting year as part of the NAP implementation process. Instruments may include workshops, local consultations, citizen science initiatives, or digital feedback platforms.
Number of Trained Officials in Adaptation Planning and MRV	National/ Subnational	Number of individuals	MoE	Ensure that relevant staff across sectors and levels are equipped to integrate adaptation into planning and MRV processes	Quantitative	Training reports, attendance records, institutional M&E databases	Climate Change Department of MoE	This indicator counts the number of unique individuals trained annually in topics related to adaptation planning and/or MRV. Participants must have completed at least 75% of training sessions and received a certificate
Availability of Updated Climate Risk Assessments	Sectoral	Number of assessments	MoE, Institute of Geosciences (IGEO)	Ensure updated climate risk and vulnerability information is available across key sectors to inform adaptation planning	Quantitative	Sectoral assessment reports, IGEO publications, MoTE archives	IGEO, Sectoral Ministries, Climate Change Department of MoE	This indicator tracks the number of official risk and vulnerability assessments updated during the reporting cycle and identifies their coverage across sectors.
Quadrennial reviews of NAP implementation	National	Yes/No; Number of reviews completed; on track / off track	Inter-Ministerial Working Group on Climate Change (IMWGCC)	Ensure timely and regular evaluation of adaptation implementation progress and address bottlenecks	Composite, Qualitative and Quantitative	Official NAP implementation review reports, MoTE internal reporting, meeting minutes	Inter-Ministerial Working Group on Climate Change (IMWGCC)	Composite indicator tracking (1) whether the quatri-annual review took place (Yes/No), (2) the total number of reviews conducted as per schedule, and (3) a qualitative self-assessment of progress (on track/ off track) derived from review findings.

10.3 Evaluation component

The evaluation function of the MEL seeks to interpret the processed data to understand what has been achieved, what remains to be improved, and how adaptation actions contribute to reduced vulnerability and enhanced resilience over time, through:

- **Adaptation outcomes**, including measurable changes in vulnerability, exposure, and adaptive capacity, as well as resilience strengthening at national and local levels; and
- **Performance of the NAP process**, including the effectiveness of governance structures, inter-institutional coordination, sectoral implementation, and alignment with national and international adaptation goals.

See Table 22 below for evaluation modalities and responsibilities:

Table 22. Evaluation Modalities and Responsibilities.

Mechanism	Lead Institutions	Purpose	Frequency	Outputs	Who Participates
1. Annual Performance Assessment	MoE, NEA	Track progress toward NAP and LAP objectives using indicators	**Annually (by March 31)**	Annual synthesis report; dashboard updates	Sectoral Ministries, Municipalities, NEA, INSTAT
2. Biennial Independent Evaluation	External evaluator commissioned by MoE	Evaluate effectiveness, impact, efficiency, and sustainability; inform UNFCCC ETF	**Every 2 years (by May 15)**	Independent evaluation report	MoE, NEA, IMCCWG/CCAW, external experts
3. Sectoral Evaluation Workshops	Sectoral Ministries, IMCCWG/ CCAWG	Assess sector-specific progress, identify bottlenecks, and propose course corrections	**Annually or Biennially**	Workshop reports; updated action plans	Sector focal points, research institutes
4. Local-Level Learning Reviews	LAP Focal Points / Municipalities	Reflect on LAP implementation, collect local feedback, assess effectiveness	**Annually**	Local learning reports	Municipal actors, communities, local CSOs
5. MEL Feedback Loop / Adaptive Management	MoE, NEA, IMCCWG	Adjust policies and planning based on MEL findings	**Ongoing**	Updated NAP/LAP measures, revised indicators	All reporting bodies, planners
6. MEL Indicator Framework	MoE, NEA, INSTAT, Academia	Ensure indicators are relevant, measurable, and aligned with goals	**Reviewed Biennially**	MEL Indicator Matrix	Technical experts, data providers
7. Stakeholder Review Platform	MoE, CSOs, Academia	Promote transparency, gather feedback, support accountability	**Annually**	Public reports, dashboards, stakeholder inputs	General public, private sector, academia, CSOs

10.4 Learning component

The learning function of the MEL system has been designed to:

- Strengthen institutional memory by identifying what works, what doesn't, and why;
- Promote adaptive management by integrating lessons into ongoing and future planning;
- Foster cross-sector collaboration and knowledge sharing;
- Build national and local capacity for climate-resilient development.
- This will be institutionalized through the following means:
- A national knowledge-sharing platform, serving as a digital repository of adaptation data, evaluation findings, best practices, and decision-support tools.
- Communities of practice and sectoral working groups to be supported to continue dialogue between planning cycles and across reporting years.
- Local-level learning reviews to be conducted annually by municipalities and LAP focal points.
- Sectoral evaluation workshops to be convened annually or biennially by sectoral ministries, in coordination with the IMWGCC and CCAWG.
- National stakeholder review platforms led by MoE and the IMWGCC to bring together representatives from line ministries, local government, academia, civil society organizations, and the private sector.
- Public knowledge products, such as dashboards, policy briefs, and synthesized learning reports, to ensure that evaluation findings and lessons learned are broadly disseminated.

Findings generated through the MEL system, including evaluation conclusions, learning reviews and stakeholder feedback, will be formally integrated into the next iteration of the NAP implementation cycle, through:

- **Revision of adaptation measures**, particularly those that show limited effectiveness or require scaling
- **Adjustment of indicators** in the MEL framework to better capture emerging risks, priorities, and data availability
- **Improvement of coordination mechanisms**, based on evaluation of institutional bottlenecks and overlaps
- **Restructuring of capacity-building efforts**, including support for local governments and cross-sector engagement.

The outcomes of the NAP 2030 mid-term review will guide Albania's next 4 year adaptation planning horizon and shape the further implementation by providing inputs into the update of the NAP Implementation Plan and MEL system components, including the Indicator Reference Matrix and Indicator Reference Sheets. The implementation of the MEL system for Albania's Second NAP will follow a phased approach, with the following phases:

Phase 1: Institutional Setup. This phase will focus on establishing and communicating the institutional arrangements needed to support the NAP MEL framework.
Phase 2: Capacity Building for MEL. Targeted capacity building will be carried out to equip stakeholders with the necessary knowledge and skills to apply the MEL framework.
Phase 3: Pilot Testing. The MEL framework will be pilot tested for tracking NAP implementation progress during 2026, the first year of implementation of the NAP. Lessons learned during this phase will be documented to inform the wider rollout.
Phase 4: Operationalization. Starting in 2027, the MEL framework will be fully operationalized, including the development and validation of indicators and reference sheets for all remaining measures in the NAP.
Phase 5: Review and Refinement. The final phase will focus on reviewing the performance of the NAP against its results framework, conducted through a Mid-term review in 2030 and through a final evaluation on year 2036.

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Annexes

SCAN TO SEE ANNEXES

GREEN
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REPUBLIKA E SHQIPËRISË
MINISTRIA E TURIZMIT DHE MJEDISIT

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