

Major Climate Risks for Vlora Municipality

The climate risk assessment for Vlora Municipality was conducted for five priority sectors: agriculture, tourism, energy, transport, and urban development. This assessment was based on evidence and historical events related to climate change, analyzing exposure to climate risks and sensitivities

in the local context, and assessing the municipality's adaptive capacities to climate change through stakeholder consultations.

Out of the 36 major risks identified, 12 are high-level, 19 are medium-level, and 5 are low-level. The following highlights the most at-risk areas.

1 People, Health, Communities		2 Infrastructure		3 Business		4 Nature		5 Municipality Assets	
High temp.	Precipitation	High temp.	Precipitation	High temp. & Precipitation	High temp.	Precipitation	High temp. & Percipit.	High temp. & Percipit.	High temp. & Percipit.
Air Quality Education Health and well-being Health and social care delivery	Health and well-being Energy demand in buildings	Health and well-being Education The increase of humidity and condensation in the house	Energy, including reduced production Transport Earthwork structures (e.g. dams)	Damage to infrastructure networks from rivers and surface waters Risks to bridges and pipelines from floods and erosion Damage to infrastructure networks (water, energy, transport, ICT) from cascading failures Damage to transport networks and infrastructure from slope and embankment failures Subsidence of underground and surface infrastructure Reduction in the quantity and quality of available water for public supply	Increased summer cooling costs Business properties flooding Water shortage for businesses Supply chain and distribution network disruptions Price increases due to higher raw material and infrastructure costs Insurance cost increases Reduced production capacity	Risks from extreme temperature events Risks from extreme precipitation events Risks from extreme storm events Risks from sea level rise Damage to lands including seasonal drought and moisture Risks to natural carbon reserves Risks to freshwater species and habitats from phenological changes Risks to freshwater species and habitats from harmful organisms, pathogens, and alien species Risks for changes in the character of the landscape	Risks to municipal properties and community spaces Risks of flooding for Municipality properties Risks of flooding for road infrastructure		

High Risk
Medium Risk
Low Risk

Local Adaptation Plan, Vlora

The LAP was 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.

Vlora Municipality has identified **51 Priority Measures (14 with very high priority, 28 with high priority, and 9 with medium priority)** to tackle climate change risks. Some of the adaptive measures with very high to high priority are presented below.

- **Strengthening the legal and institutional framework** and increasing financing for climate adaptation.
- **Enhancing scientific, technical, and social capacity** aimed at generating scientific evidence to support decision-making, identifying high-risk areas, raising awareness, and implementing climate adaptation training programs.
- **Developing and implementing awareness** increasing programmes for protected areas (such as the Vjosa River, Narta Lagoon, and Oriku Lagoon) and the effects of climate change on them.
- **Protecting housing infrastructure, municipal assets, and properties** from damage and further degradation due to climatic factors.
- **Assessing potential risks to road infrastructure and integrating** the parts of the network that need improvement into decision-making processes.
- **Adapting priority economic sectors** (Agriculture, Transport, Energy, Urban Development, Tourism).
- **Incentivizing communities to participate in projects to reduce energy consumption** and improve the transmission and distribution system to withstand stronger and more frequent winds.
- **Strengthening disaster risk management.**
- **Eight measures for adapting the natural environment** based on integrated approaches using ecosystem-based adaptation (EbA) and nature-based solutions (NbS) and/or engineering interventions.

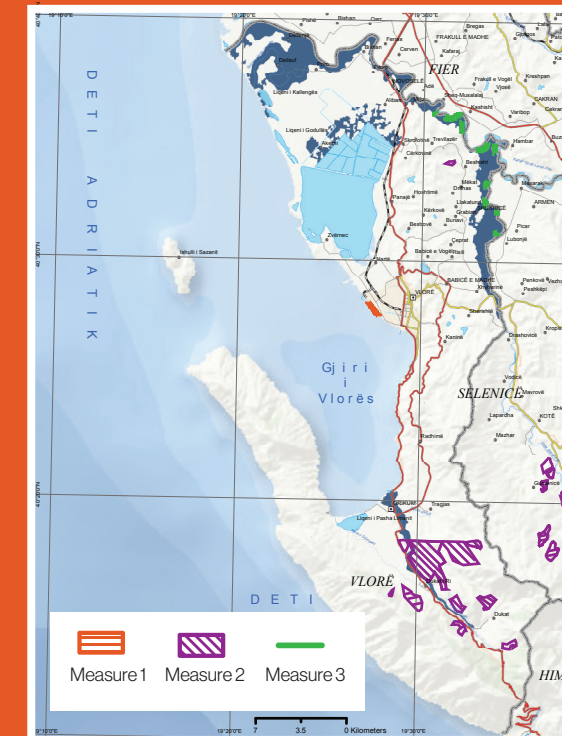
Some bioengineering infrastructure measures with very high priority

- **Implementation of nature-based works** or grey interventions for Enhancing coastal protection, creation of dikes for flood protection, including the Mifol – Portokalle segment.
- **Combating coastal erosion in the "Soda Forest";** Declaring the "Soda Forest" and other green areas as a "Municipal Park". (**Measure 1**)
- **Interventions in afforestation** in the village "Dukat i Vjetër" to recover 300ha of damaged forest. (**Measure 2**)
- **Protecting against soil erosion** in the village of Trevllazër, soil erosion in the Shushica river basin. (**Measure 3**)
- **Restoring degraded areas and forest areas** burned by fires (Llogara, Karaburun, Pishë-Poro forest, etc.).
- **Restoring of forest layers between agricultural surfaces,** Dukat i Ri, Tragjas, Radhimë, to create microhabitats and protect agricultural crops from strong winds.
- **Establishing forest nurseries** in Dukat, Kaninë, and Tragjas for the cultivation of native seedlings adapted to local climatic conditions.
- **Improving pastures and use of native species,** through seeds collected in the respective areas of Karaburun, Dukat, Tragjas, Shashicë, Kaninë, etc.
- **Maintaining of internal winter and summer channels,** as well as the reconstruction of 2 pumping stations in Akërni and Oriku, to ensure the regular flow control of water in the Narta and Oriku lagoons.
- **Regenerating 300ha of reclaimed land** in the marshland area of the Dukat i Ri/Oriku valley, and promoting of the conservation of natural "water ponds" for the preservation of water bird habitats.

Local adaptation plan



The NAP process



ADAPTATION PLAN TO CLIMATE CHANGES VLORA



Objectives of the NAP Process

The National Adaptation Plan (NAP) process is an initiative funded by the Green Climate Fund (GCF) and implemented by the United Nations Development Programme (UNDP) and it aims to:

Reduce Albania's climate change risks and vulnerabilities through medium and long-term Planning for Adaptation at both national and local levels.

Strengthen institutional capacities and stakeholder capacities to analyze climate data, assess local risks and vulnerabilities based on evidence, understand climate change impacts on key sectors in 8 municipalities, and identify adaptation opportunities.

Why a Local Plan for Climate Change Adaptation?

Vlora, the third-largest city in Albania, spans from the Vjosa River delta in the north to the Llogara National Park in the south, with over 90 km of coastline along the Adriatic and Ionian Seas. The center of the municipality, the city of Vlora, is one of the most important cities for culture and economy in southwestern Albania. The city has direct sea access and natural protection from mountains and hills, benefiting from its strategic position among land, sea, and air routes. The municipality covers an area of 617 km², about 2.2% of the country's surface.

Vlora's climate is changing in line with global climate change trends. **Based on a multi-criteria analysis, Vlora Municipality was identified as one of the most affected municipalities by climate change and extreme weather.**

In compliance with Law No. 155/2020 "On Climate Change," municipalities must develop and implement adaptive policies and measures to reduce the risks and consequences of climate change, enhancing capacities and ensuring gender equality in decision-making processes for adaptation and community resilience.

Vlora Municipality must ensure adaptation to climate change by integrating its Local Adaptation Plan to Climate Change into its decision-making processes and proactively implementing the plan.

Stakeholder Engagement

The municipality took a leading role in the Adaptation Planning process, ensuring the collection of historical data and evidence for risk assessment from a local perspective.

Municipal staff and representatives of other institutions were made aware of the necessity of planning for adaptation to climate change to address its impacts for sustainable development.

Progress of the NAP Process

8 Jul 2022
Presentation of NAP objectives in Municipality of Vlora

8/27 Sep 2022
Meetings with technical staff to assess capacities and needs

19-20 Dec 2022
Workshop in Tirana for findings from the capacity assessment

7-9 Mar 2023
Workshop in Tirana for risk and vulnerability assessment

May- Sep 2023
Meetings for data collection, analysis, and processing

5 Oct 2023
Workshop in Vlora to consult risks based on data analysis and identify adaptation measures

18 Jun 2024
Official presentation of the PLP at the high-level conference

24 Apr 2024
Final consultation of the LAP in Vlora

Nov - Mar 2024
Preparation of the first draft of the Local Adaptation Plan (LAP) for climate change by 2 international and 10 national experts

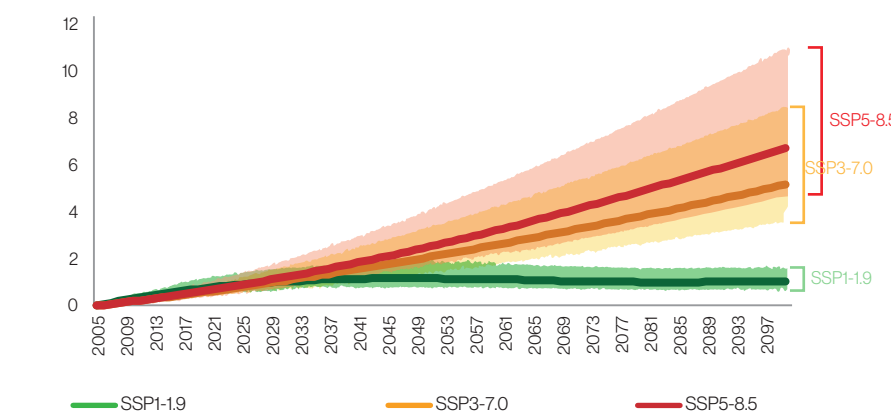
Climate Scenarios

Climate scenarios describe the expected climate changes and are used to inform decision-making and planning in different sectors. Scenarios for Vlora Municipality were developed as part of climate scenarios for Albania, based on the downscaling of global scenarios according to IPCC AR6 recommendations.

Temperature

According to climate change scenarios, by 2050, Vlora is expected to experience an increase in temperatures. Based on projections of the average annual temperature, an increase of 0.9°C is expected in the most optimistic scenario (SSP1-1.9), 1.6°C in the pessimistic scenario (SSP3-7.0), and 2.1°C in the most pessimistic scenario (SSP5-8.5). This increase will be accompanied by various climatic changes, including higher minimum and maximum temperatures, especially during the summer season. Additionally, the frequency of hot days (with maximum temperatures above 35°C) and heat waves is expected to increase, while the number of cold and very cold days (with minimum temperatures below 0°C and -5°C) is expected to decrease.

Change in maximum temperature in the summer season (°C)



Climate Change Risks

Droughts

Will bring difficulties in water and energy supply until the year 2050 and significant difficulties until the year 2100.

Floods

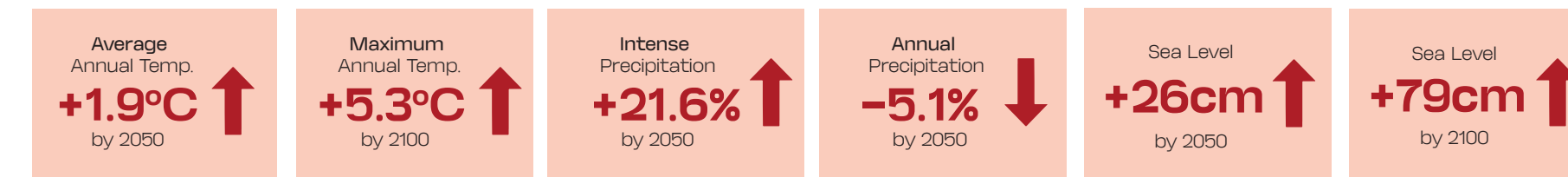
The intensity of precipitation and river erosion will increase. Floods, which may endanger the lives of residents, damage property and infrastructure including water management services.

Wildfires

Extreme temperatures could favor the spread of wildfires in forests.

Sea Level Rise

- Changes in the hydrological regime could affect biodiversity, causing saltwater intrusion and colonization by new species.
- Saltwater intrusion into agricultural lands could reduce agricultural production.
- Sea level rise could cause flooding in areas of 7,000ha, 9,000ha, and 9,250ha according to different sea level rise levels (33cm, 90cm, and 100cm).
- Sea level rise could accelerate coastal erosion, especially in the Soda Forest.
- Low-lying coastal areas will face intensified erosion and flooding.



Precipitation

According to precipitation scenarios for Vlora, a decrease is expected by 2050 under SSP1-1.9 (-2.4% annually, -7.2% in summer) and SSP3-7.0 (-4.3% annually, -12.9% in summer), accompanied by high variability and more frequent extreme events.

Change in annual precipitation (%)



The Process of Adaptation Plan development



98 participants