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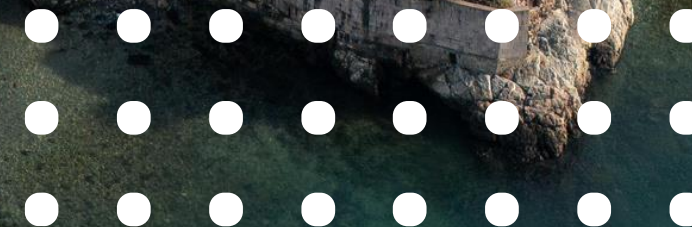
CLIMATE CHANGE ADAPTATION PLAN FOR THE BLACK SEA REGION OF TÜRKİYE

PRESENTATION 2025

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More Information
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INTRODUCTION

- The Black Sea Region is rich in biodiversity and ecological value, yet increasingly vulnerable to climate change.
- Rising temperatures, changing precipitation, coastal erosion, and extreme weather events are key risks.
- This plan outlines strategies for building climate resilience across sectors.







KEY CLIMATE RISKS

- **Floods and landslides**
- **Erosion and sea level rise**
- **Irregular rainfall**
- **Forest and biodiversity degradation**
- **Public health impacts**



MOST VULNERABLE SECTORS TO CLIMATE CHANGE IN THE BLACK SEA REGION (RANKED BY VULNERABILITY LEVEL)

- **Agriculture and Food Security**
- **Forests and Biodiversity**
- **Urban Settlements and Infrastructure**
- **Transportation and Logistics**
- **Water Resource Management**
- **Public Health**
- **Tourism**



PRIORITY SECTORS

- **Water Management**
- **Agriculture and Food Security**
- **Energy and Infrastructure**
- **Urban Systems and Coastal Protection**
- **Biodiversity and Ecosystems**
- **Public Health**



AGRICULTURE AND FOOD SECURITY

Adaptation Actions

- Promote climate-resilient crop varieties (e.g., drought/heat-resistant).
- Develop early warning systems for extreme weather events.
- Implement sustainable irrigation techniques, such as drip irrigation.
- Encourage crop diversification to reduce dependency on climate-sensitive crops.
- Expand agroforestry and soil enrichment practices.
- Provide training to farmers on climate-smart agriculture methods.
- Establish agricultural insurance programs to reduce climate-related risks.
- Promote organic farming and conservation tillage to maintain soil health.

Key Institutions:

Ministry of Agriculture and Forestry, Provincial Directorates of Agriculture,
Chambers of Agriculture, Agricultural Research Institutes.





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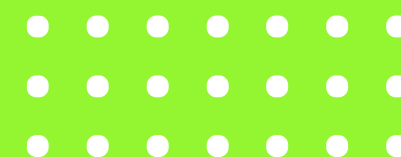


FORESTS AND BIODIVERSITY ADAPTATION ACTIONS

- Monitor and manage forest pests and invasive species.
- Restore degraded forest and natural habitats.
- Establish ecological corridors to facilitate species migration.
- Encourage planting of fire-resistant native species.
- Strengthen early detection and response systems for wildfires.
- Implement regional biodiversity action plans.
- Prevent deforestation and illegal land conversion.
- Support community-based forest and biodiversity conservation projects.

Key Institutions

General Directorate of Forestry, Ministry of Environment, Urbanization and Climate Change, TÜBİTAK, NGOs, Universities.





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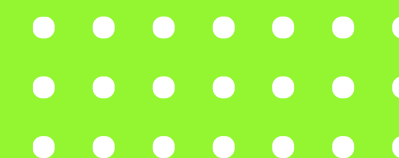


URBAN SETTLEMENTS AND INFRASTRUCTURE ADAPTATION ACTIONS

- Upgrade urban stormwater drainage and flood protection systems.
- Promote green infrastructure (e.g., green roofs, bioswales, urban parks).
- Enforce climate-resilient urban planning and zoning regulations.
- Relocate or redesign infrastructure in high-risk zones (e.g., floodplains, landslide-prone areas).
- Improve emergency response capacity and community preparedness.
- Incorporate climate risk assessments into urban development projects.
- Retrofit buildings and utilities to withstand extreme conditions.
- Establish local climate resilience action plans and awareness campaigns.

Key Institutions:

Ministry of Environment, Urbanization and Climate Change; Municipalities; Disaster and Emergency Management Authority (AFAD); TOKİ.





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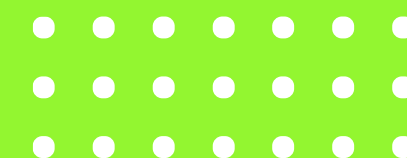


TRANSPORTATION AND LOGISTICS ADAPTATION ACTIONS

- Elevate coastal roads and protect them against sea level rise and erosion.
- Design road infrastructure to resist landslides and floods.
- Conduct climate vulnerability assessments for transport networks.
- Establish early warning and traffic diversion systems during disasters.
- Upgrade drainage systems along critical transportation routes.
- Integrate resilience criteria into all new transportation projects.
- Provide alternative transport routes and interconnections.
- Use satellite and geospatial tools to monitor high-risk areas.

Key Institutions:

Ministry of Transport and Infrastructure, General Directorate of Highways, Provincial Transportation Directorates, Local Governments.





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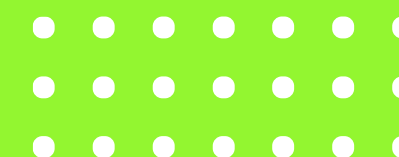


WATER RESOURCE MANAGEMENT ADAPTATION ACTIONS

- Prepare integrated watershed and basin-level water management plans.
- Construct small-scale reservoirs and rainwater harvesting systems.
- Promote treated wastewater reuse for agriculture and industry.
- Modernize and optimize irrigation systems for efficiency.
- Monitor surface and groundwater quality to ensure safe supply.
- Develop pricing strategies that promote water conservation.
- Reduce technical losses in water distribution infrastructure.
- Implement public campaigns on water-saving behaviors.

Key Institutions:

State Hydraulic Works (DSİ), Ministry of Agriculture and Forestry, Municipal Water and Sewerage Administrations, Research Institutions.





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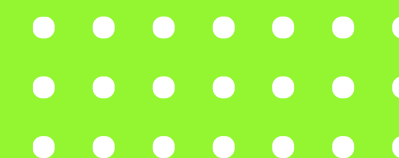


PUBLIC HEALTH ADAPTATION ACTIONS

- Improve surveillance and forecasting systems for climate-sensitive diseases.
- Train healthcare professionals in the diagnosis and treatment of vector-borne illnesses.
- Establish cooling shelters and response protocols during heatwaves.
- Strengthen the resilience of healthcare infrastructure.
- Launch targeted mosquito and tick control programs.
- Disseminate public health information on climate risks.
- Equip hospitals for climate-related emergency response.
- Monitor air and water quality and address pollution spikes.

Key Institutions:

Ministry of Health, Turkish Public Health Institution, Municipal Health Directorates, Universities.





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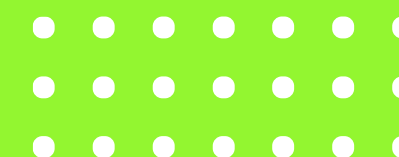
TOURISM

ADAPTATION ACTIONS

- Create regional sustainable tourism development strategies.
- Diversify tourism offerings to include off-season and inland areas.
- Protect and rehabilitate natural, cultural, and landscape heritage.
- Implement disaster preparedness plans in tourism hotspots.
- Use climate projections in infrastructure planning and investment.
- Improve accessibility and resilience of highland and coastal tourism infrastructure.
- Train tourism sector workers on climate risks and sustainability.
- Promote eco-tourism and integrate local communities into tourism value chains.

Key Institutions:

Ministry of Culture and Tourism, Local Tourism Boards, Regional Development Agencies, NGOs.





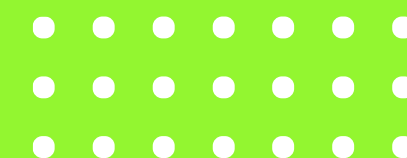
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CLIMATE-RESILIENT FISHERIES AND COASTAL RESOURCE MANAGEMENT

ADAPTATION ACTIONS

- **Ecosystem-Based Fisheries Management**
- **Flexible and Dynamic Fishing Regulations**
- **Diversification of Coastal Livelihoods**
- **Climate-Resilient Aquaculture**
- **Coastal Ecosystem Restoration**
- **Monitoring and Early Warning Systems**





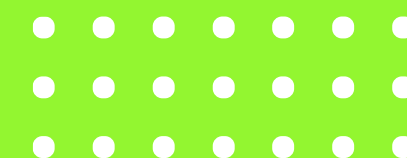
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DISASTER RISK MANAGEMENT & EMERGENCY RESPONSE

ADAPTATION ACTIONS

- **Dynamic Risk Assessment & Mapping**
- **Community-Based Preparedness**
- **Strengthened Early Warning Systems**
- **Enhanced Response Capacity**
- **Build-Back-Better Recovery**
- **Regional Emergency Operations Center**
- **Disaster Education & Drills**
- **Evacuation Routes & Safe Havens**
- **Insurance & Relief Funds**
- **After-Action Learning**



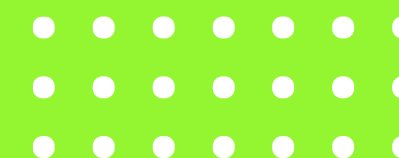


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KEY INSTITUTIONS INVOLVED

- AFAD & Provincial Branches
- State Meteorological Service
- Local Governorships & Municipalities
- Ministry of Interior
- Ministry of Health,
- Highways, Utilities
- Jandarma SAR & Military Engineering Units.
- Muhtars & Volunteer Networks (e.g., AKUT)
- International Mechanisms (EU Civil Protection, BSEC).





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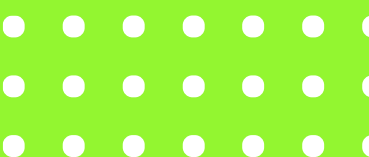
ENERGY & INFRASTRUCTURE

ENERGY SECTOR ADAPTATION ACTIONS

- Diversification of Renewable Energy Sources
- Climate-Proofing Energy Infrastructure
- Decentralized and Resilient Energy Systems
- Energy Efficiency Retrofits in Public Buildings
- Integration of Early Warning Systems in Energy Management

INFRASTRUCTURE SECTOR ADAPTATION ACTIONS

- Climate-Resilient Transport Infrastructure
- Nature-Based Solutions for Urban Infrastructure
- Flood and Erosion Defense for Coastal Settlements
- Retrofitting and Floodproofing Critical Infrastructure
- Smart Infrastructure Monitoring Systems



THANK YOU FOR YOUR ATTENTION

“Together, we can contribute to a sustainable future”

Questions & Discussion

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