



Iran's advancements in adaptation and mitigation technologies



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Iran Location in Subtropical Desert Belt



Climate Change in Iran

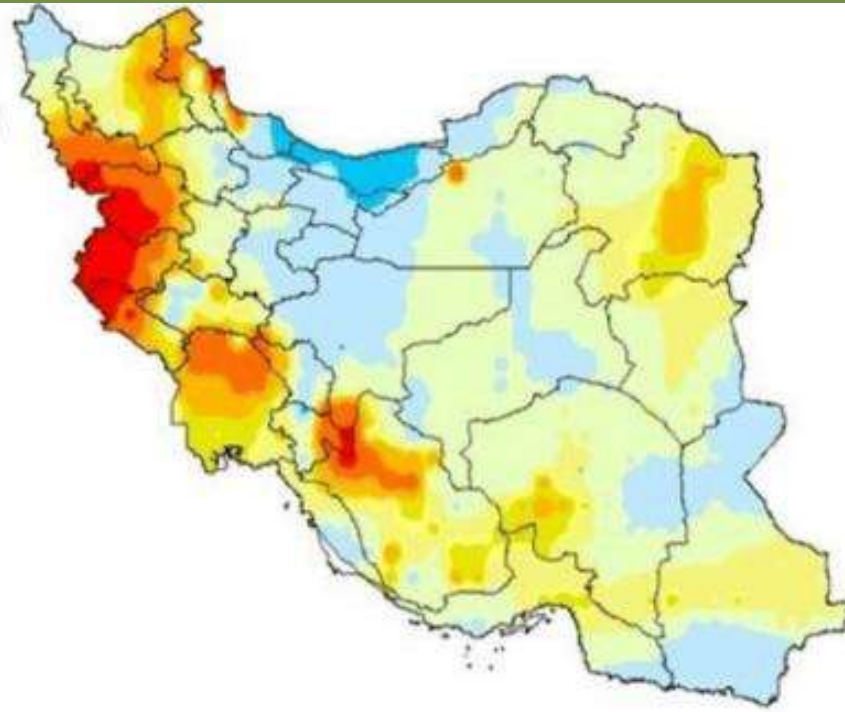


Overview of Climate Change Impacts



Rainfall decline (mm)

- 240 - -120
- 110 - -71
- 70 - -53
- 52 - -46
- 45 - -43
- 42 - -40
- 39 - -33
- 32 - -15
- 14 - 32
- 33 - 150

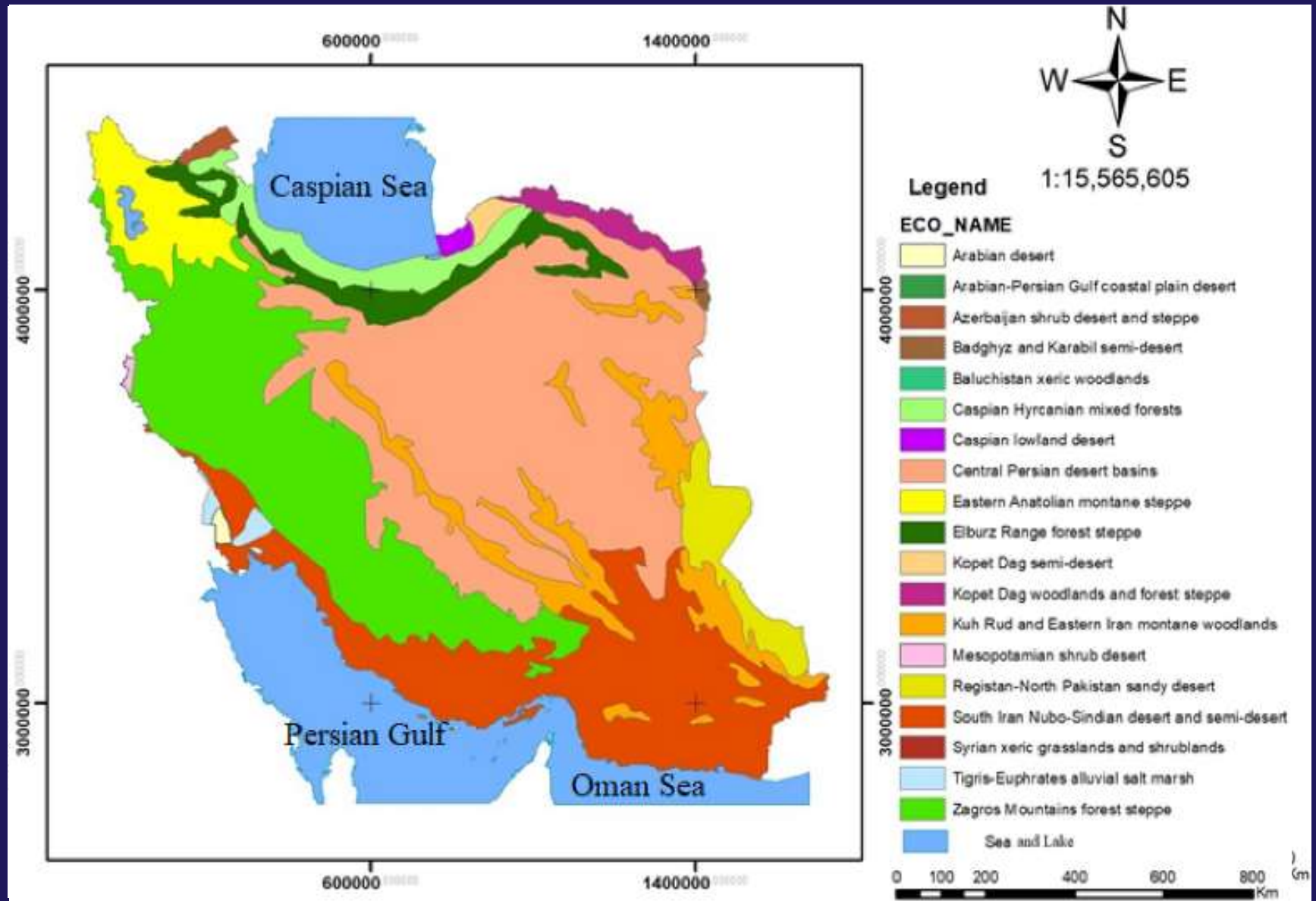


پژوهشگاه ملی
تحقیقات محیط زیست





Iran's Vulnerability to Climate Change

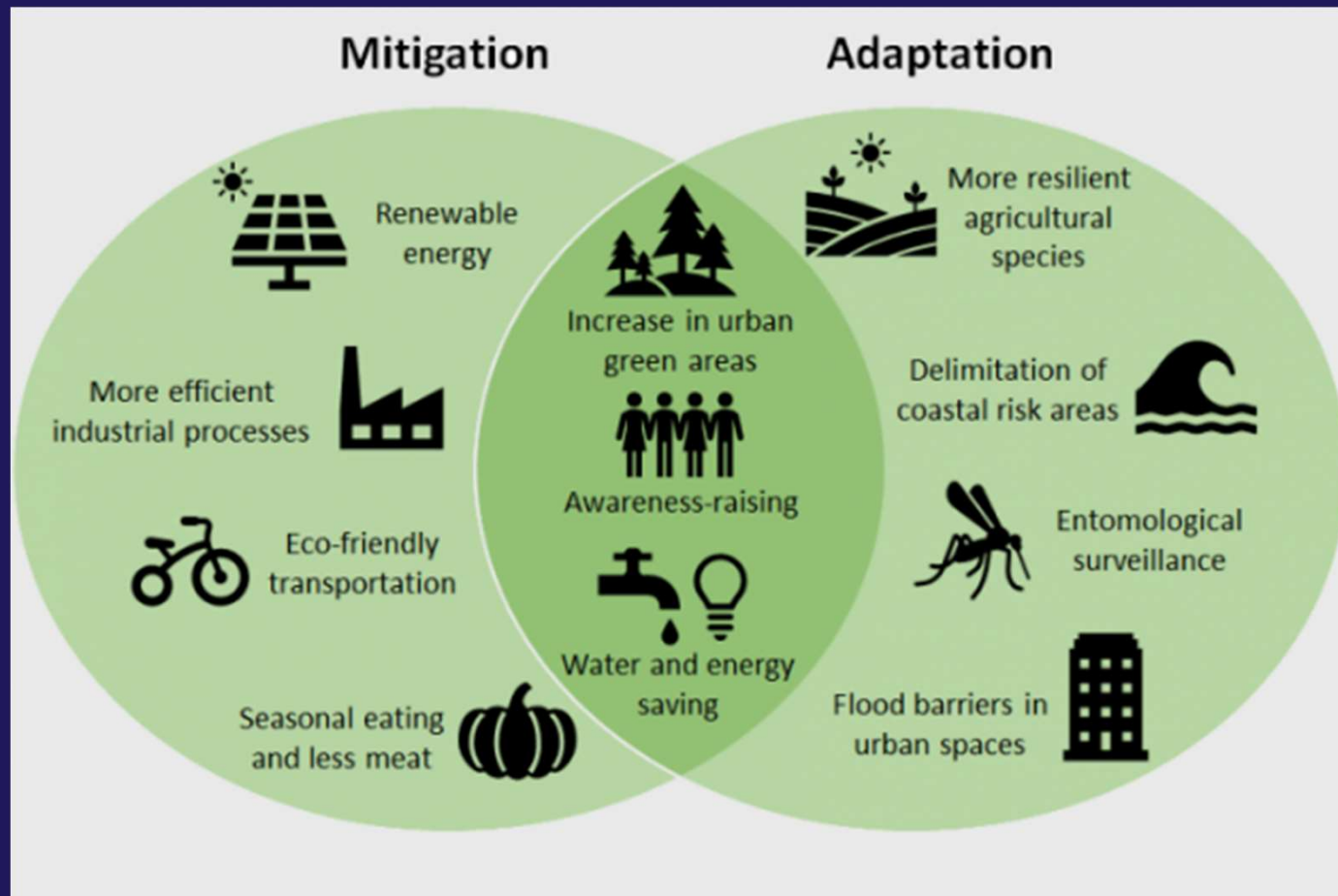


Map of the major biomes and habitats in the Iranian terrestrial biomes

Understanding Adaptation and Mitigation

Definitions and Key Concepts

Adaptation: Adaptation refers to the process of making adjustments in natural or human systems in response to actual or expected climate changes, thereby minimizing potential damage or taking advantage of opportunities.



Mitigation: Mitigation involves efforts to reduce or prevent the emission of greenhouse gases (GHGs) and enhance the sinks of these gases.



Understanding Adaptation and Mitigation

Importance of Adaptation and Mitigation

ADAPTATION

A variety of actions that are meant to reduce or compensate for or adapt to the adverse impacts that arise from changes in the Earth's climate

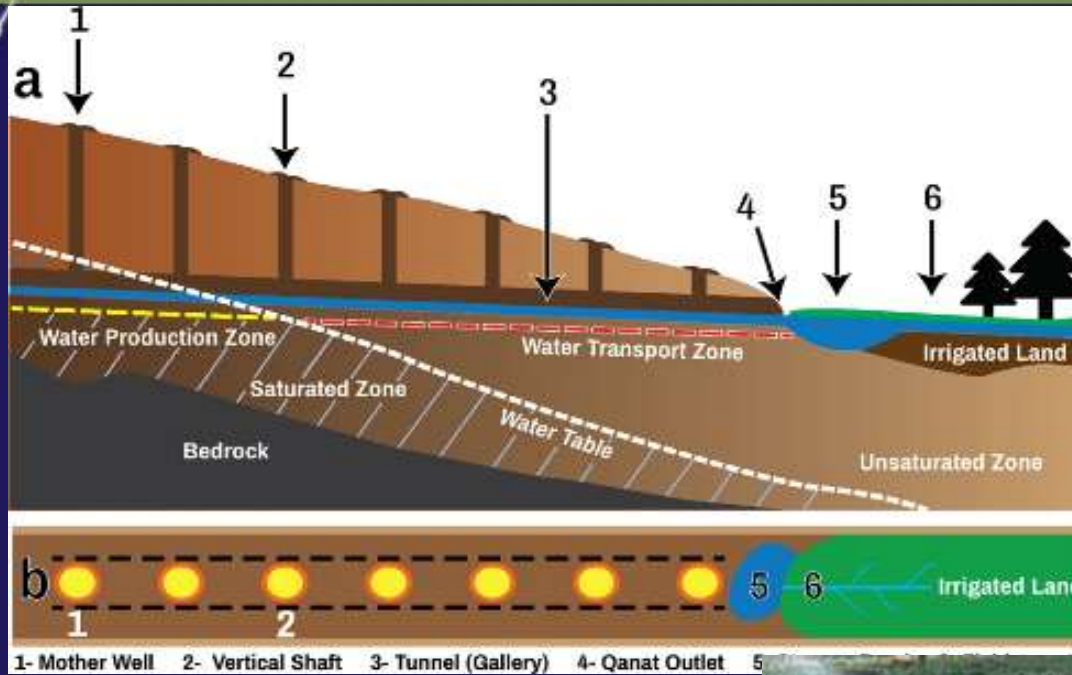
MITIGATION

Actions or changes in societal behavior taken to reduce or eliminate greenhouse gas (GHG) emissions and/or to remove GHGs from the atmosphere to prevent significant adverse climate effects



Current State of Technologies in Iran

Advancements in Adaptation Technologies



1. Water Management Technologies

Qanat is one of the most important inventions in Iran in the field of water exploitation and management, dating back more than three thousand years

2. Sprinkler and Drip Irrigation Systems;

Three million hectares of the country's farmlands are equipped with a modern irrigation system



Advancements in Adaptation Technologies

Urban Planning and Infrastructure Improvements

Flood Management Systems,

All streams and rivers in Tehran have been divided into two eastern and western branches



Green Infrastructure:

145 million cubic meters of Tehran's green spaces will be irrigated using recycled water and wastewater treatment by 2030.

Advancements in Adaptation Technologies

Urban Planning and Infrastructure Improvements

Public Transit Expansion

Investments in public transportation systems



Bicycle Infrastructure

Encouraging cycling through dedicated bike lanes and bike-sharing programs

Government Policies and Initiatives

The Iranian government has established a **National Climate Change Office** within the **Department of Environment (DoE)**.



Department Of Environment
Islamic Republic of Iran

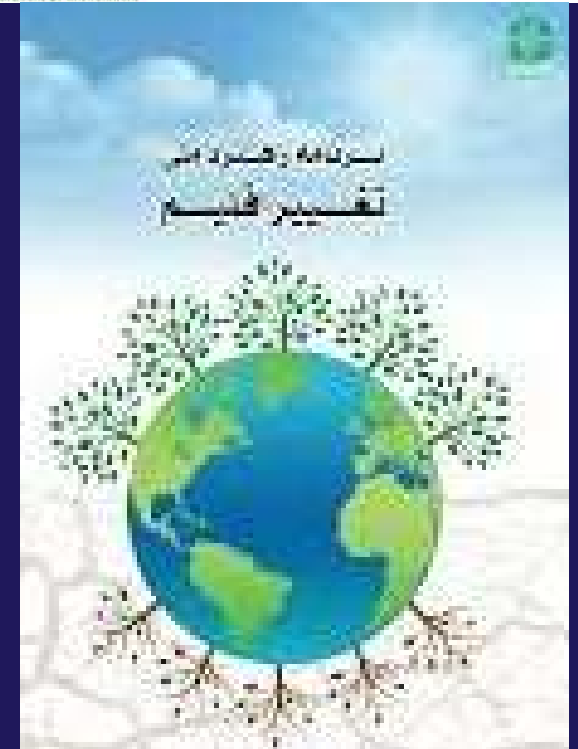


Department of Environment
Islamic Republic of Iran

**Intended Nationally Determined
Contribution**

19 November 2015

National Climate Change Committee: Iran INDC, page 1



Iran has committed to its **Nationally Determined Contributions (NDCs)** under the **Paris Agreement**

Government Policies and Initiatives

National Water Scarcity Adaptation Working Group of the Ministry of Energy

This comprehensive framework involves various sectors, including developing databases, and water management in agriculture and urban planning, to enhance Iran's resilience to drought. The outcomes include improved water management strategies, increased agricultural productivity through climate-smart practices, and enhanced drought response mechanisms.



Advancements in Mitigation Technologies

Renewable Energy Development (Solar, Wind, etc.)

"Barakt" charity foundation has achieved many successes in developing the use of solar panels in villages.



Developing solar power plants in different regions of the country by the Ministry of Energy

Advancements in Mitigation Technologies

Carbon Capture and Storage Technologies

An increase of 15 hectares of the area covered by the carbon sequestration project in the Mahallat County



According to studies by the United Nations Development Program (UNDP), climate change is one of the most important challenges in sustainable development, which has a negative impact on terrestrial and aquatic ecosystems.



Advancements in Mitigation Technologies

Waste Management and Recycling Innovations

Energy production plans
from Tehran's urban
waste



Challenges and Barriers to Implementation

Financial, Technical, and Social Challenges

Financially, international sanctions



Technically, outdated infrastructure,



Socially, a lack of public awareness

Future Directions and Opportunities

Emerging Technologies and Research Areas



Potential for International Collaboration





Thank you



The End