

Mitigation of Sand and Dust Storm

through Policy and / or Science?

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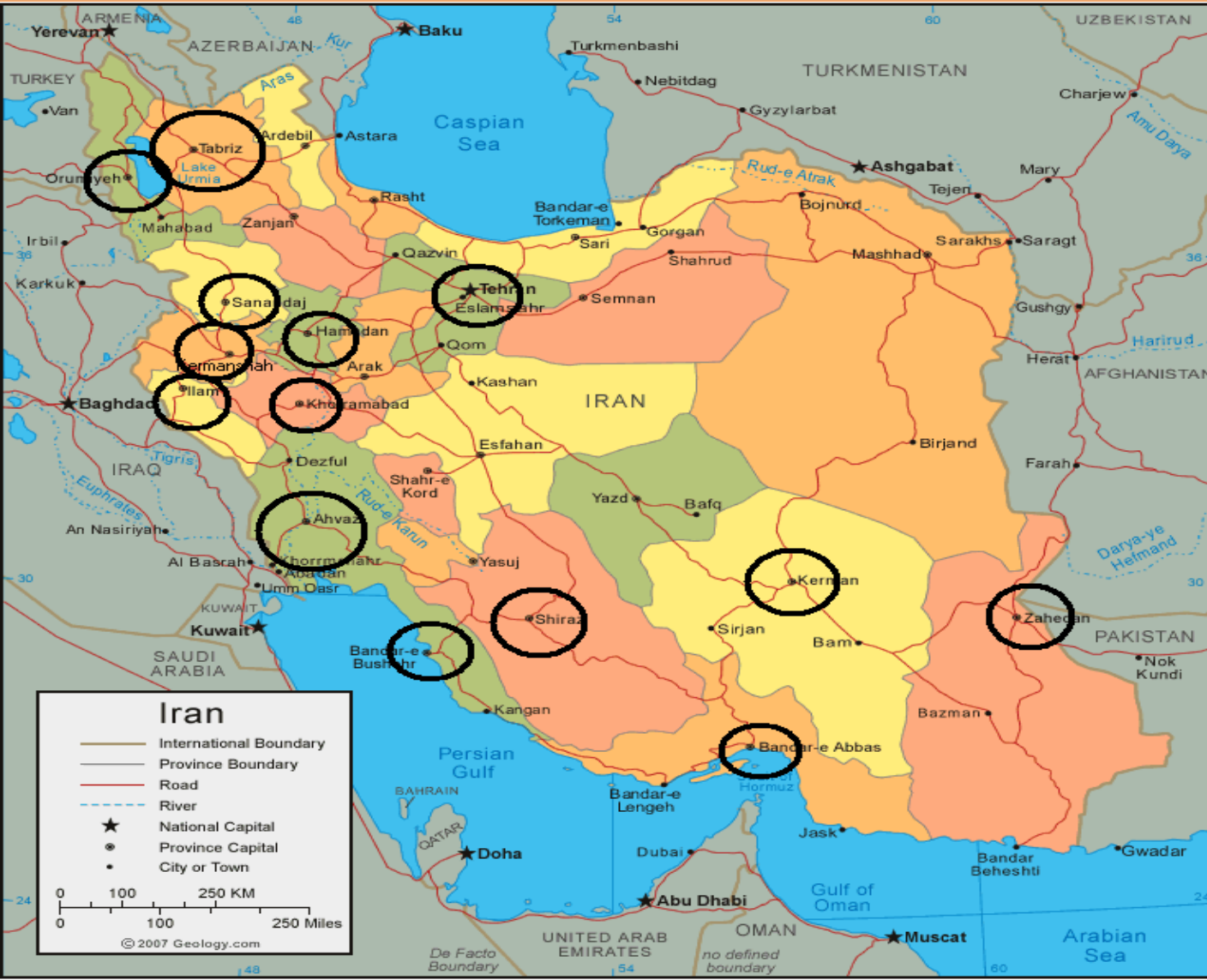
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Intl Sand and Dust Storm Workshop
4-7 October 2016, Istanbul - Turkey



Provinces affected by Dust Storm



Originating from:
1- Neighboring countries;
2- Inland;



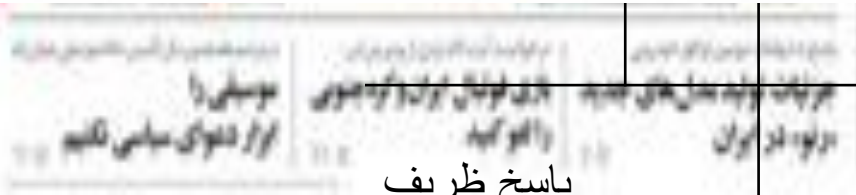
Iran
Newspaper.



October
3, 2016.

80% Int'l;

20%
domestic

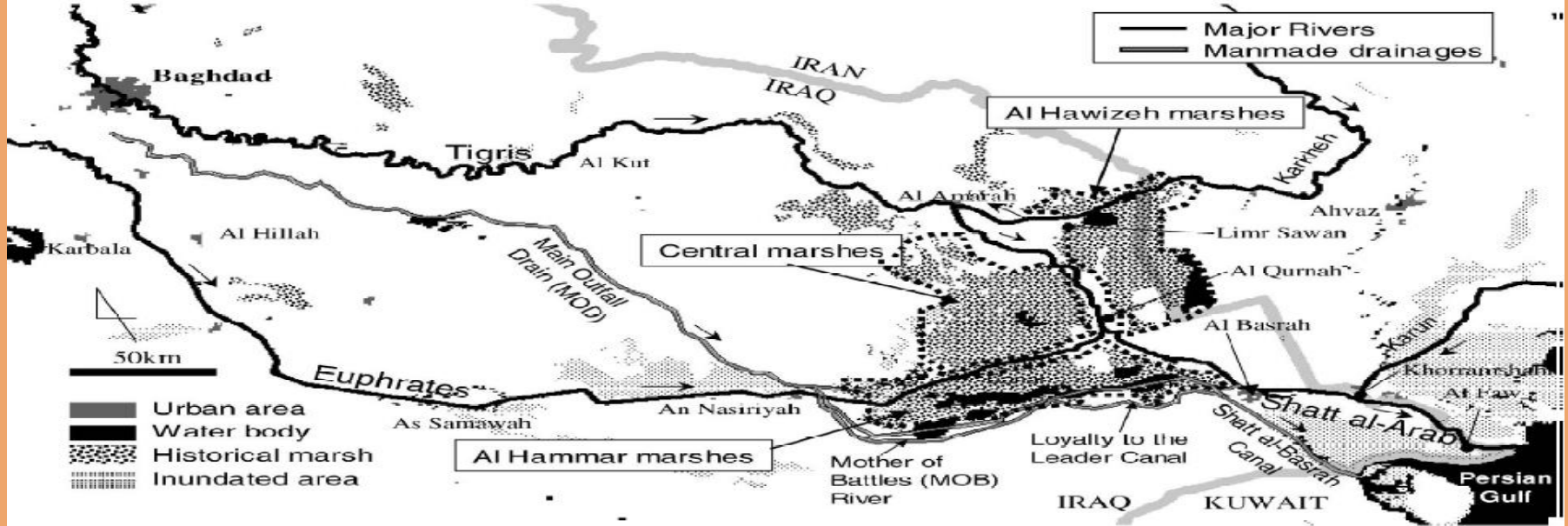




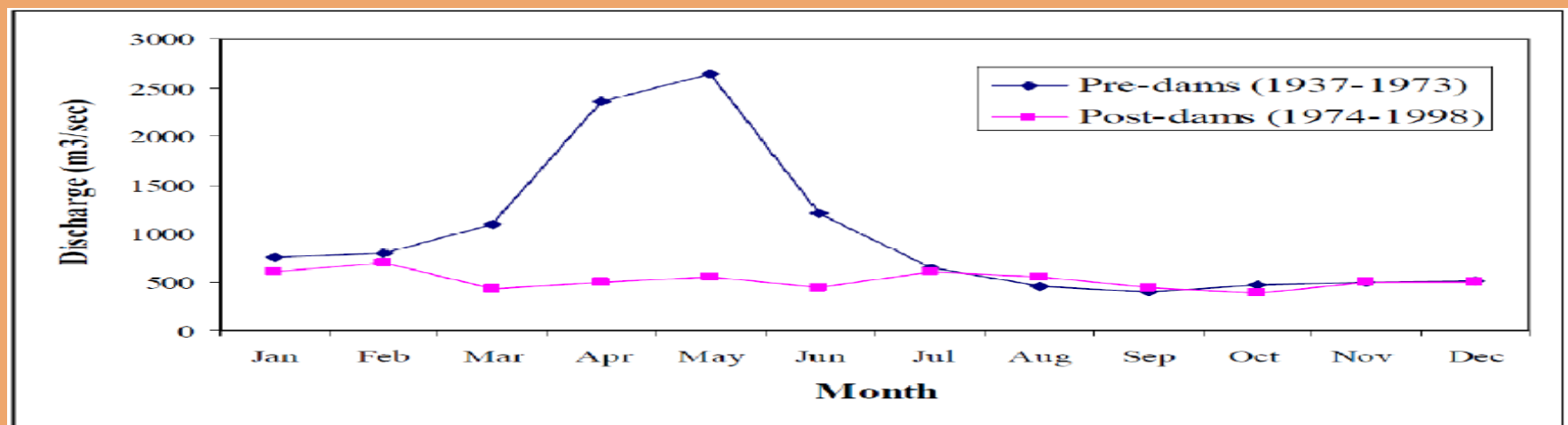
- Dust storm is named as one of the contributing factors to Oak dieback;

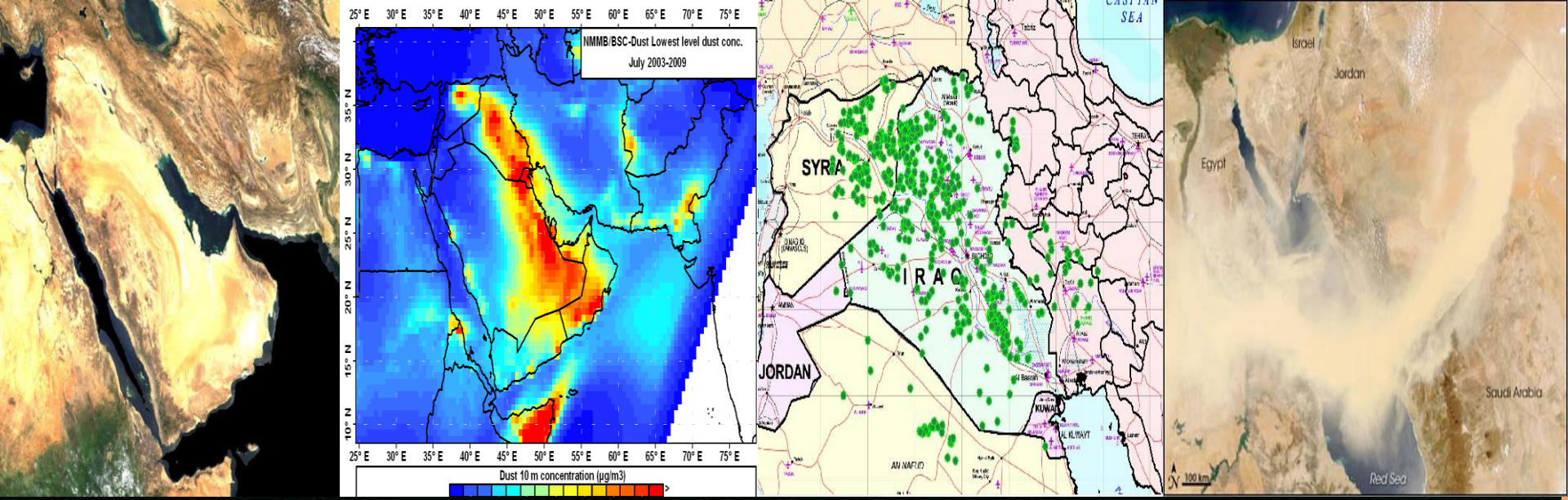


- FRWO & FAO have a TCP project on oak decline;

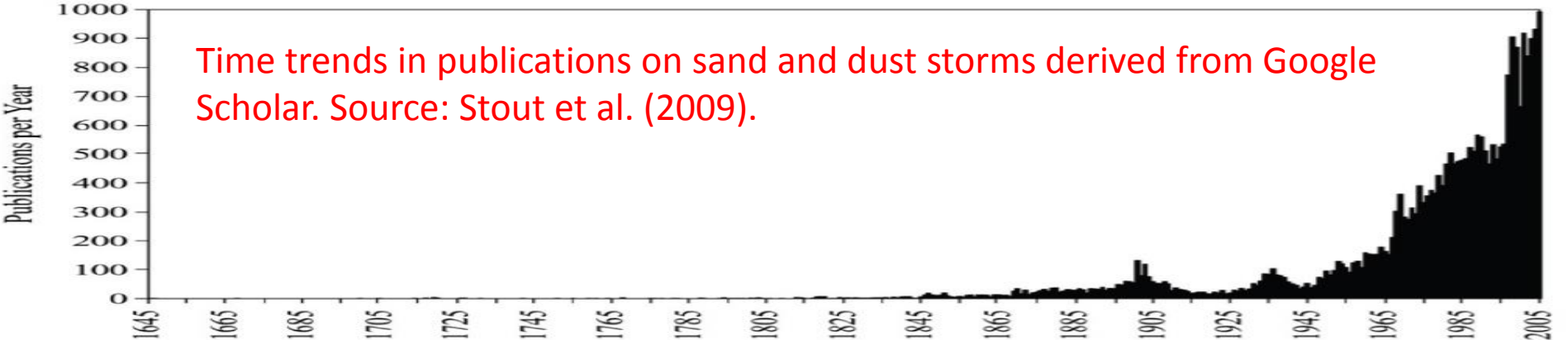
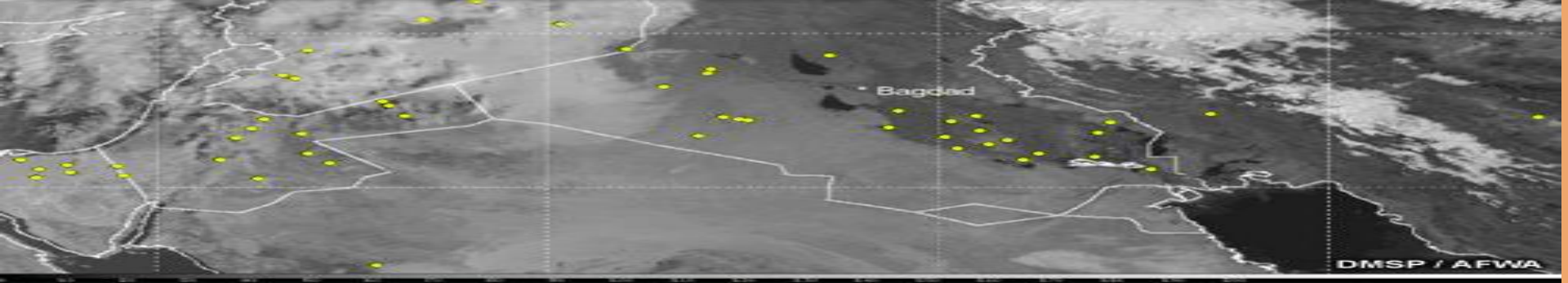


- Top: Drainage downstream Tigris and Euphrates;
- Down: Discharge before and after dams construction





Visible Satellite Image of Middle East with Point Sources of Dust



Major Factors in Sand and Dust Storms

A) Natural Factors:

- Climate change and Drought;
- Unstable weather in Middle East;
- Low vegetation cover;
- Low precipitation;
- Low humidity;
- Degradation of forests and rangelands;
- Changes in air pressure and severe winds from arid deserts;

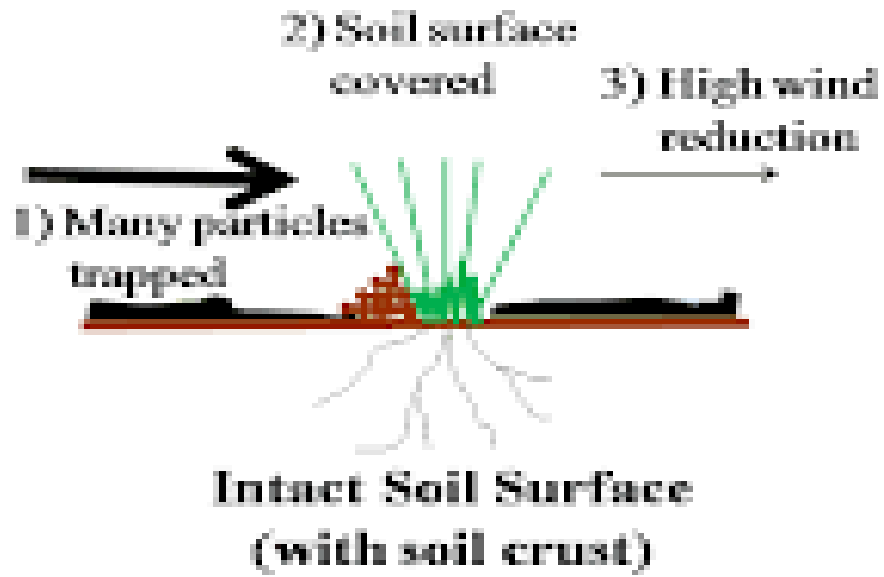
B) Human Factors:

- Improper management of water resources;
- Land degradation;
- Unallocation of water rights to vulnerable ecosystems;
- Careless Dam construction;
- Wars and conflicts in the region;
- Poverty;
- Low productivity of agricultural practices and extensive farmings.

Dust Storm Life Cycle illustrating how a dust storm can fuel itself.

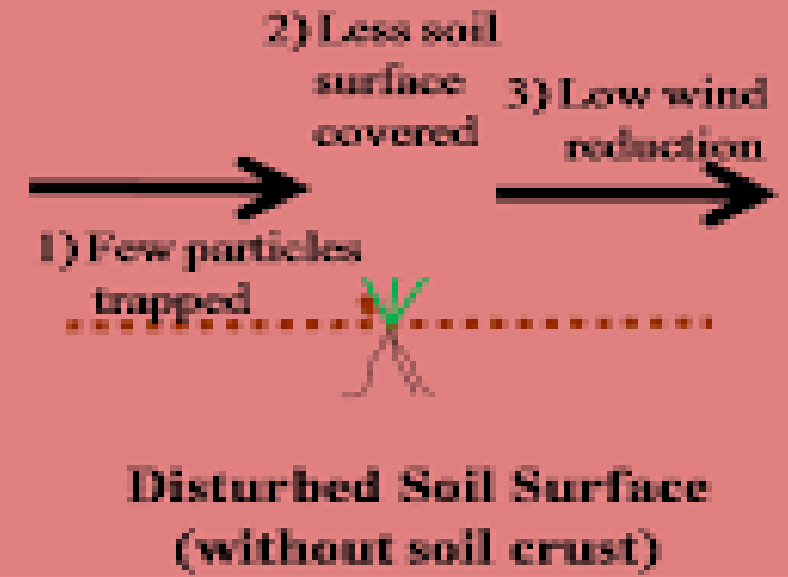
Low risk of dust storm

High Vegetation Cover



High risk of dust storm

Low Vegetation Cover



- Dry condition;
- Dry soil;
- Low vegetation;
- High winds.

Risk = Hazard × Vulnerability

The main factors of land degradation in Iran



1. Severe drought and climate change
2. Overgrazing
3. Inappropriate exploitation of soil and water resources
4. Salinization
5. Socio- Economic Factors
6. Urban and industrial Area Development

Concerned Institutions in Dust Storm in Iran

Governmental Bodies	Governmental Bodies	Governmental Bodies	Active scientific associations	Research Institutes and Academic Centers	Major Documents
Ministry of Agriculture	Ministry of Health	Management and Planning Organization	Water resources Association of Iran	Faculties of Natural Resources, Geography, Environment, Natural Resources, etc.	National Action Plan to Combat Desertification
Department of Environment	Ministry of Defense	Ministry of Science	Watershed management Association of Iran	Forests and Rangeland Research Institute	2025 Vision plan
Ministry of Energy	Ministry of Industries and Mines	Ministry of Interior		Soil Conservation and Watershed management Research Institute	5 Year National Development Plans
Ministry of Road and City construction	TV and Radio Organization	Passive Defence Organization		International Desert Research Center	Water Resources research priorities
Ministry of Foreign Affairs	Water, drought, erosion and environment technology development		Desert Control Association of Iran	National Soil Salinity Research Center	Environment Research Institution

At international level

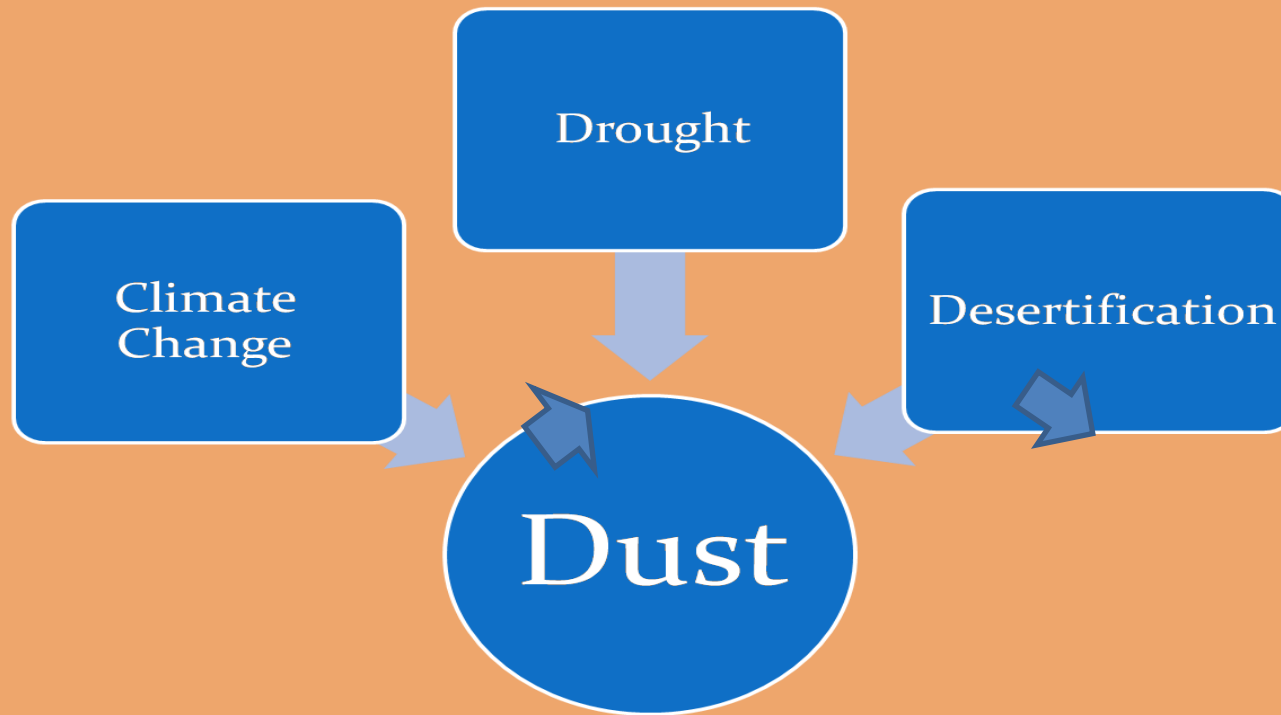
- UN System: WMO, UNEP, UNCCD, UNISDR, etc
- Some binding and some not;
- Even the binding ones are not so strong and parties do not care as they should;

Agreements with other countries

Box 8.10: Iranian agreements on sand and dust storms

Title	Date	Place	Major Provisions	Signatory Authorities
Memorandum of Understanding (MOU)	26 Jan 2008	Tehran	8 Paragraphs, Environment and Sustainable Development, a joint committee, workshops.	Iran & Iraq (Ministers)
MOU	5 Jul 2009	Baghdad	6 Articles, sources of dust, new technologies on dust, dust monitoring, training, holding meetings in Baghdad, international cooperation.	Iran & Iraq (Ministers)
Summary Minutes of Negotiations	18 Nov 2009	Tehran	Harmful effects of dust, field visit in Iraq, create a dust monitoring network in Iraq, providing information, air monitoring in the area.	Iran & Iraq (Deputies)
Ministerial Statement Ankara	1 May 2010	Ankara	Establishment of a joint working group, prepared 2-year Plan, exchange of experiences in the field of environment, weather, dust, air quality management, desertification.	Iran, Iraq, Turkey, Syria (Ministers)
Track Record of Implementing Agreements on Combating Dust	6 Aug 2010	Tehran	13 Articles, an operating appendix, dispatch of experts, preparing of credit, training and assisting the Iraqi Meteorological promotion, health management, project shared views on global, regional and sub-regional meetings.	Iran & Iraq (Deputies)
Regional Action Plan	29 Sep 2010	Tehran	10 Articles and appendices, environment and weather and dust, air quality management, desertification and implementation of the action plan.	Iran, Iraq, Turkey, Syria (Ministers)
Bilateral Action Plan	8 Jun 2011	Tehran	10 Articles, an area of 1 million hectares set for desertification operations over 5 years, jointly invested by the private sector, 400-hectare pilot plant operations in Iraq, efforts to reduce the effects of dust, transfer of experiences in the field of desertification and afforestation in Iraq.	Iran & Iraq (Ministers)
Bilateral Action Plan	7 May 2011	Baghdad	10 articles and an appendix on operations, began operations in Iraq desertification.	Iran & Iraq (Deputies)
Executive Document Against Desertification	17 Jun 2011	Ahwaz	7,000 hectares of land desertification began operations in seven provinces in Iraq; rootstock studies on soil, water and vegetation, and meteorology, follow the provisions of the Memorandum of the Special Committee, public education on behalf of the Iraqi government to farmers in sustainable agricultural productivity, land management and watershed management.	Iran & Iraq (Deputies)

Conditions that could exaggerate the dust phenomenon



❖ Drought and Desertification are to be addressed by UNCCD through NAP or LDN action plan and National Drought Policy. How are real the targets are?

❖ Climate change is to be addressed by UNFCCC

The Cycle of Disaster Management

risk management

Preparedness

Prediction and
Early Warning

Mitigation

Disaster

Protection

Recovery

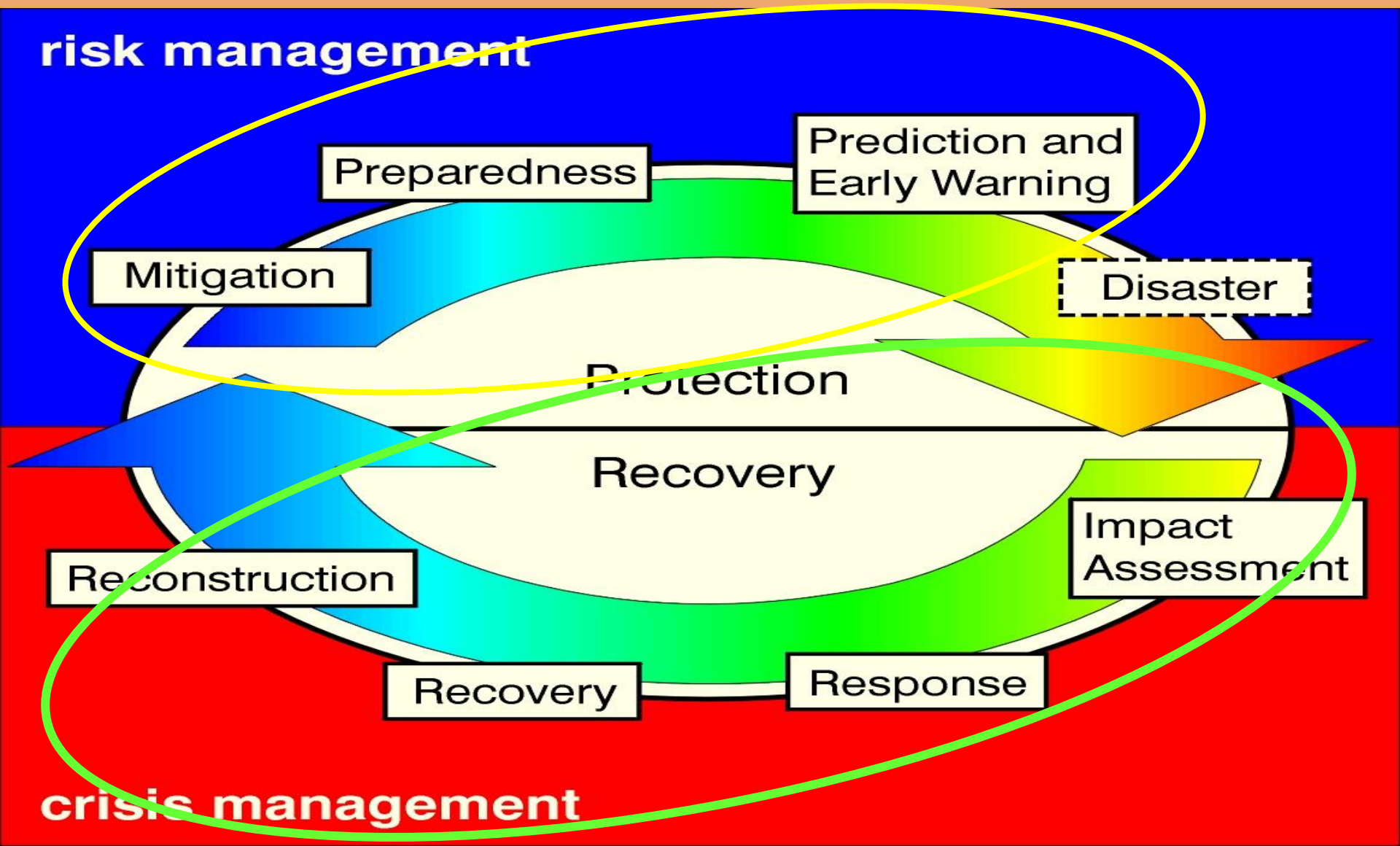
Reconstruction

Impact
Assessment

Recovery

Response

crisis management



At the national level

- Various stakeholders from ministries and organization to people either rural or urban;
- All should have clear mandates and financial resources;



Financial Resources

- Lack of financial resources;
- Policy makers can be convinced by economic figures;
- Economic toolkits.





Thank s for your attention

