



Sand and Dust Storms Fact Sheet

Sand and Dust Storms – Fact Sheet

Introduction

Iraq is considered one of the region's most vulnerable countries to climate change and it faces a unique set of environmental challenges. Rising environmental degradation and increasing frequency and intensity of extreme weather events, especially Sand and Dust Storms (SDS), take an enormous toll on socio-economic life and human development across the region. It has been recognized that climate change and environmental degradation transcend boundaries and that they can't be addressed effectively through national level interventions alone. While many challenges persist, regional governments acknowledged that addressing environmental issues, such as SDS, is also an opportunity for enhanced cooperation and for making a tangible difference to regional populations and economies. In Iraq, the Ministry of Environment recorded 122 dust-storms and 283 dusty days and sources suggest that within the next ten years, Iraq could witness 300 dust-storms per year. These projections underscore the urgent need for a concerted regional effort to address the phenomenon today.

Causes

SDS are the result of several inter-dependent factors, which span across several regional countries. Years of inappropriate farming practices, mismanagement of water resources and climate change continue to contribute to reduced vegetation coverage, desertification and droughts, which directly contribute to the growing regional dust-storm problem. Droughts and arid conditions favour the dissolution of soil particles and wind contributes to the emergence of dust storms. Iraq is affected by the southern and south-easterly Sharqi, a dry, dusty wind with occasional gusts of eighty kilometers an hour, occurs from April to early June and again from late September through November. This wind brings with it violent dust storms that may rise to heights of several thousand meters. From mid-June to mid-September the Shamal wind blows from the north and northwest. The very dry air permits intensive sun heating and aggravates desertification. It is particularly these two winds, which generate severe dust-storms in the region.

1. Water

In Iraq, the situation is particularly dramatic. The two main sources of surface water in Iraq – Tigris and Euphrates – will decrease in the year 2025 to about 50-80% of the water discharged in 2009. Some reports projected that the Tigris and Euphrates rivers might be depleted by 2040 (IAU 2010). Due to drought, almost 40% of cropland throughout Iraq experienced reduced crop coverage and that livestock was devastated between 2007 and 2009. The UN's efforts to support regional water management initiatives are ongoing, but many challenges persist.

2. Desertification

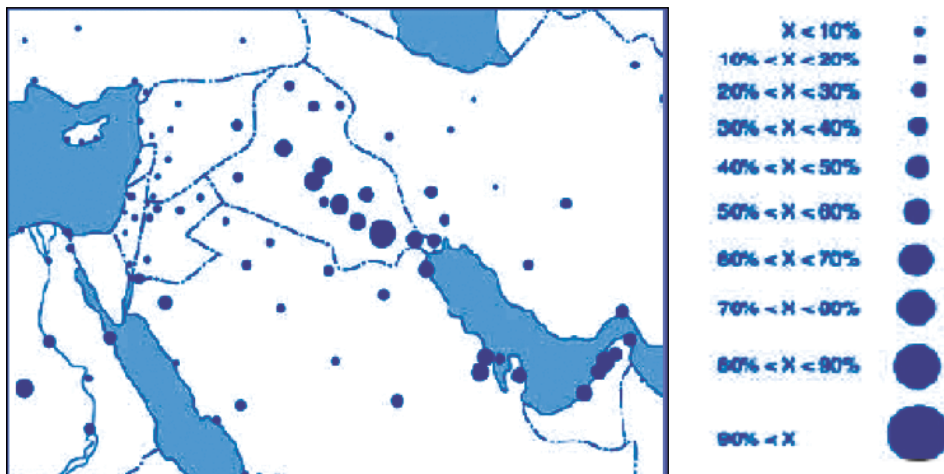
As much as 31% of Iraq's surface is desert. Declining fertility, high soil salinity, erosion and the extension of sand dunes are pervasive problems. The Government of Iraq reports that 28% of the country's land is

arable, of which an estimated 250.000.000 sqm is lost annually to degradation. 39% of the Iraq is affected by desertification with an additional 54% under threat. The increasing frequency of vast SDS can be directly linked to decreasing soil moisture and vegetation cover.

Impact of Sand and Dust Storms

The impact of a SDS on national and regional economies can not be overestimated. Due to the complexity of how SDS impact various socio-economic sectors in to different extents, few data regarding budgetary losses is available. A 2009 study suggests that increased dust-storms would result in annual losses of 12.7 bio USD in GDP per annum in the MENA region alone. Considering that Iraq, Iran, Kuwait, Saudi Arabia, Syria, Jordan and Turkey as a sub-region are more heavily affected by SDS than the MENA, the amount of annual GDP losses must be significantly higher. Specifically:

- Negative socio-economic impact across all sectors (household level, labour productivity, loss of raw materials and perishable goods, spiking energy expenditures, damages to infrastructures, disruption of supply chains, telecommunications etc.)
- Reduced visibility affects transport: airports, border crossing points, ports remain closed
- Increased cloud formation increases surface heat and further aggravates drought effects
- Dust storms damage crops, cause soil loss and remove organic matter and nutrient-rich lightest particles, thereby reducing agricultural productivity. Large parts of Iraq’s fertile soil have already been “blown” away
- Intensification of desertification, drought and reduction of water supplies (drinking water, irrigation) and significant increase in soil salinity
- Significant strains on the public health sector. Hospitals are overwhelmed in dealing with acute and chronic respiratory affections caused by SDS



Spatial distribution of the maximum occurrence of visibility reduction in (%) of the time. Circles sizes’ are proportional to percentage of visibility reduction.

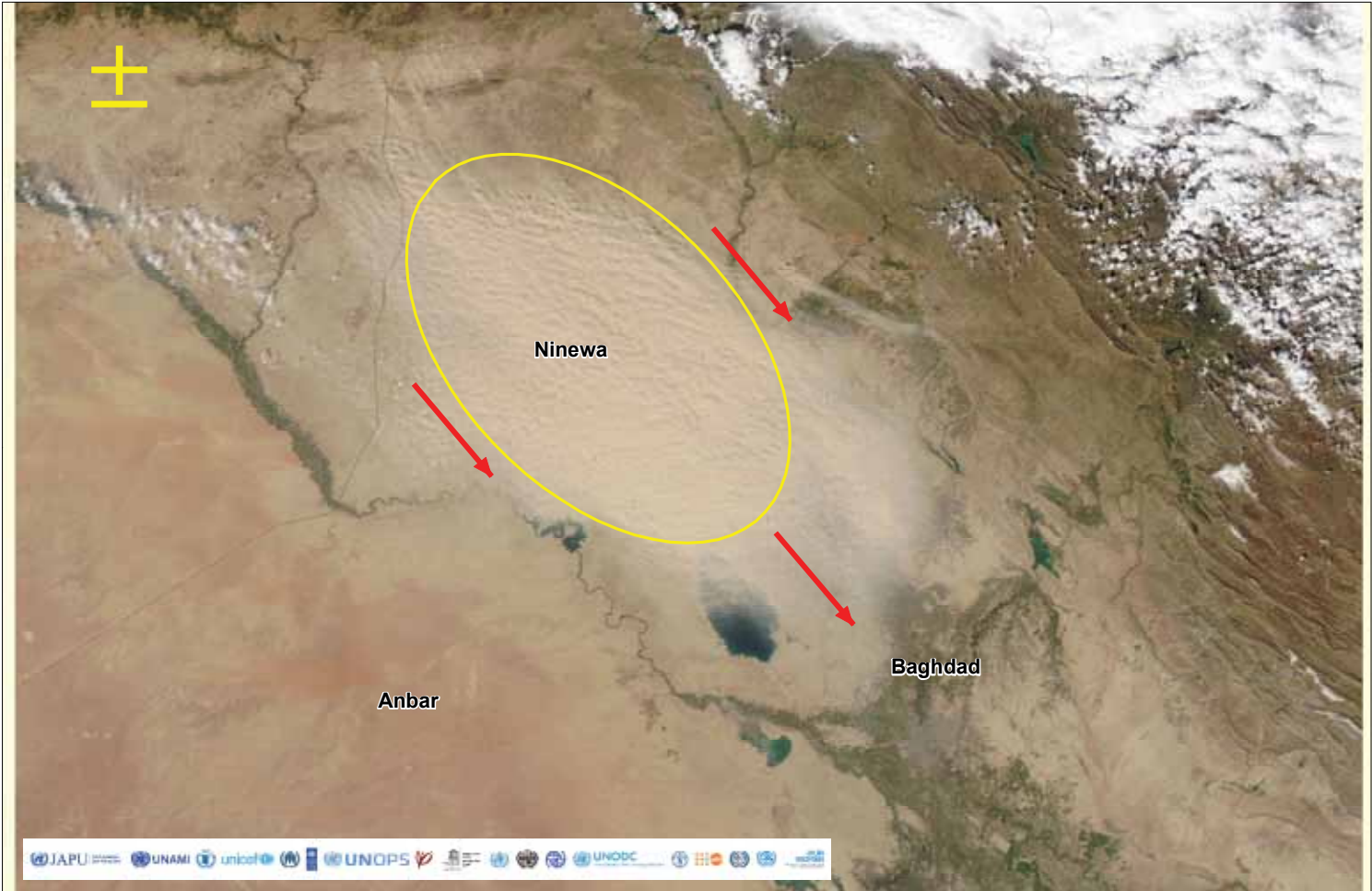
Source: Dust-storms, Sources in the Middle East and economic model for surveying its impact, Australian Journal of Basic and Applied Science, 227-223, 2011

Response: Government of Iraq, United Nations

The Government of Iraq, as well as the governments of neighbouring countries, fully recognize the transboundary nature of environmental issues and the importance of addressing SDS. However, the regional dialogue has not been fully sustained despite the signing of the Ankara Ministerial Declaration in 2010 between Iraq, Iran, Turkey, Syria and Qatar. The subsequent Action Plan creates a good basis for continued- and possibly expanded cooperation. In Iraq, the Government established several high level inter-ministerial national councils/committees to advance on the issue and progress is encouraging. Several UN Agencies in Iraq and the United Nations Environment Programme (UNEP) are actively involved in providing technical assistance to advance on e.g Iraq's Drought Risk Management Strategy, related Disaster Risk Management and they are actively engaged in facilitating regional technical cooperation on environmental issue. One of the main impediments to combating SDS today is the nascent understanding about the urgency for concerted action, limited regional cooperation, as well as a significant funding gap.

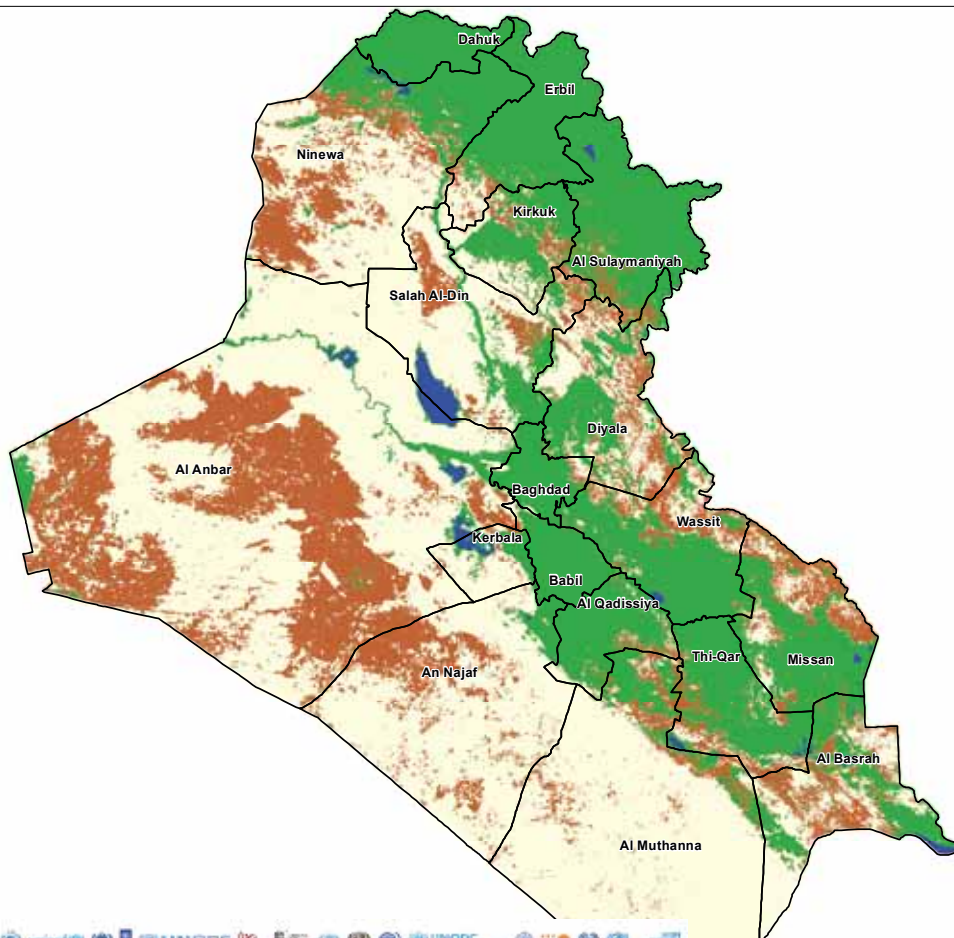
Dust storm coming from the North-Western part of Iraq

(Image acquisition date 03 Nov 2011)



Mapping Sand Dunes and Vegetation Cover in Iraq

(Image acquisition date - 01 Aug 2011)



Iraqi cover classes

- Water
- Vegetation Cover
- Bare land
- Sand Dune
- Governorate Boundary

Governorate and district boundaries in Iraq vary amongst sources. This map shows names, spellings and administrative boundaries corresponding to the data developed by IOM and OCHA, August 2008.

Map Doc Name: Sand Dune_Aug 2011.pdf
 Creation Date: 22 July 2012
 Projection Datum: Geographic WGS 1984
 Web Resources:
 Nominal scale at A1 paper size:
 Map data sources:
 USGS: MODIS satellite Image 01 Aug 2011

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