

Sand dune in Iraq

((effects and ways of treatments))



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SITE

Iraq is located in the northeastern of the middle east , west Asia between latitude (22.0 – 29.5) north and longitudes (38.45- 48.45) east and is bounded on the north turkey , on the east Iran , on the west Syria and Jordan , on the south Saudi Arabia and Kuwait .

The area of Iraq 438.416 km² , al jazera and north and south badia consist of the total area of Iraq . which divided to :

- Mountain region in north and the north east .**
- Eastern highlands .**
- Al- gazera between Tigris and Euphrates rivers in north west .**
- Western desert (northern and southern badia).**
- Alluvial plain .**

CLIMATE

Climate of Iraq is characterized in north and north east part cold wet in winter , in summer dry and warm . in other part , winter cold semi dry summer hot . in general characterized as follows :

- **high average temperature degree .**
- **Big difference between day and night temperature and between seasons**
- **Low relative humidity .**
- **Big variation in rainfall from 1200 m in up north to 70 mm in down south**
- **Prevailing wind north and north west during dry months .**

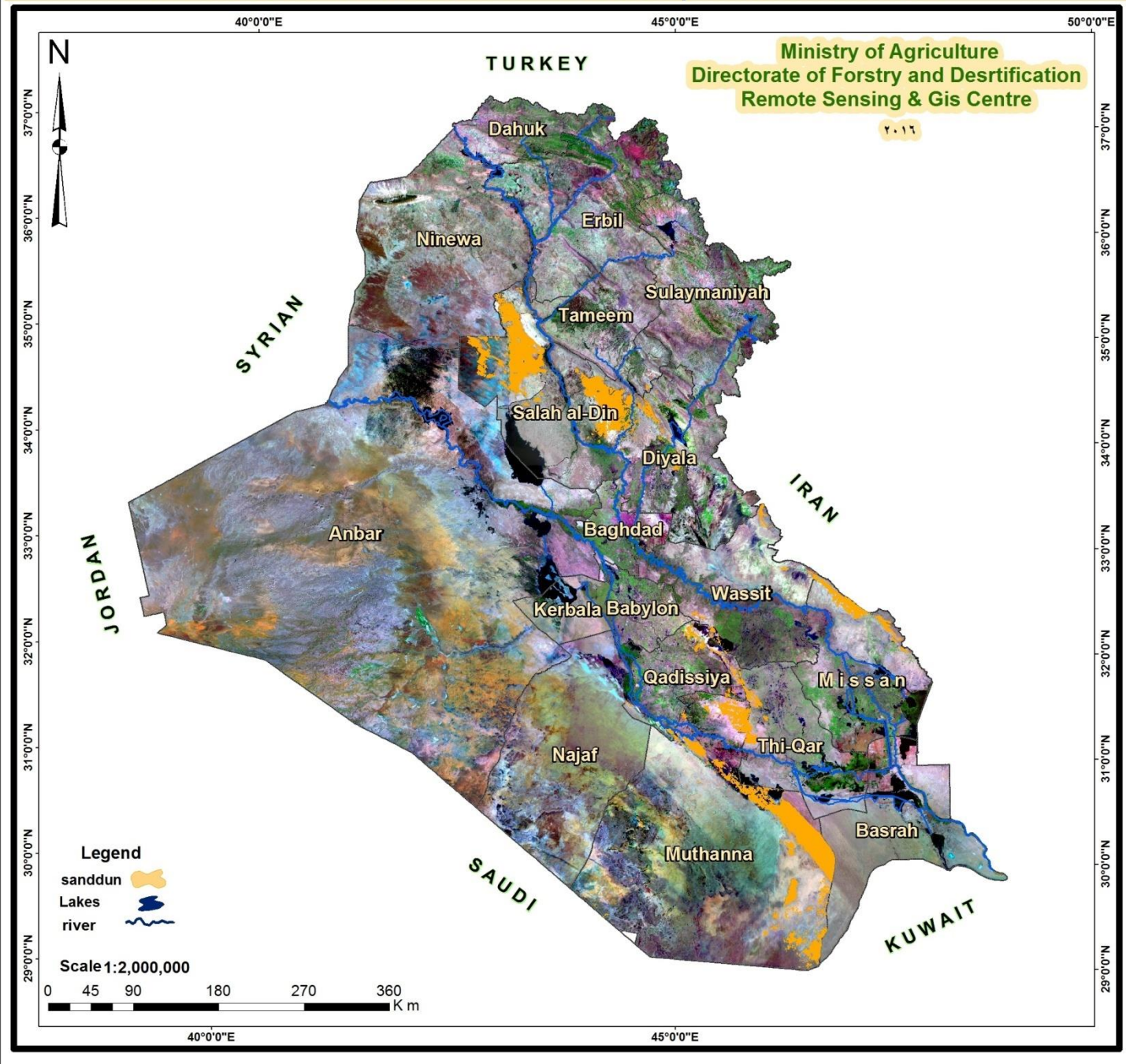
Average of rainfall from 1988-2000

موصل	بغداد	رطبة	بصرة	السنة
594,3	182,9	263,6	105,7	1988
329,3	145,4	125,2	121,4	1989
259,6	123,8	96,1	48,3	1990
405,5	89,4	84,1	247,5	1991
577,1	88,1	114,5	165,2	1992
633,0	192,5	130,6	177,6	1993
439,6	152,9	175,4	153,0	1994
296,2	96,7	230,2	132,3	1995
528,7	98,0	133,4	214,2	1996
360,6	113,8	236,9	232,5	1997
244,8	115,8	80,9	74,2	1998
156,9	58,5	62,6	238,6	1999
233,3	67,6	83,4	130,0	2000

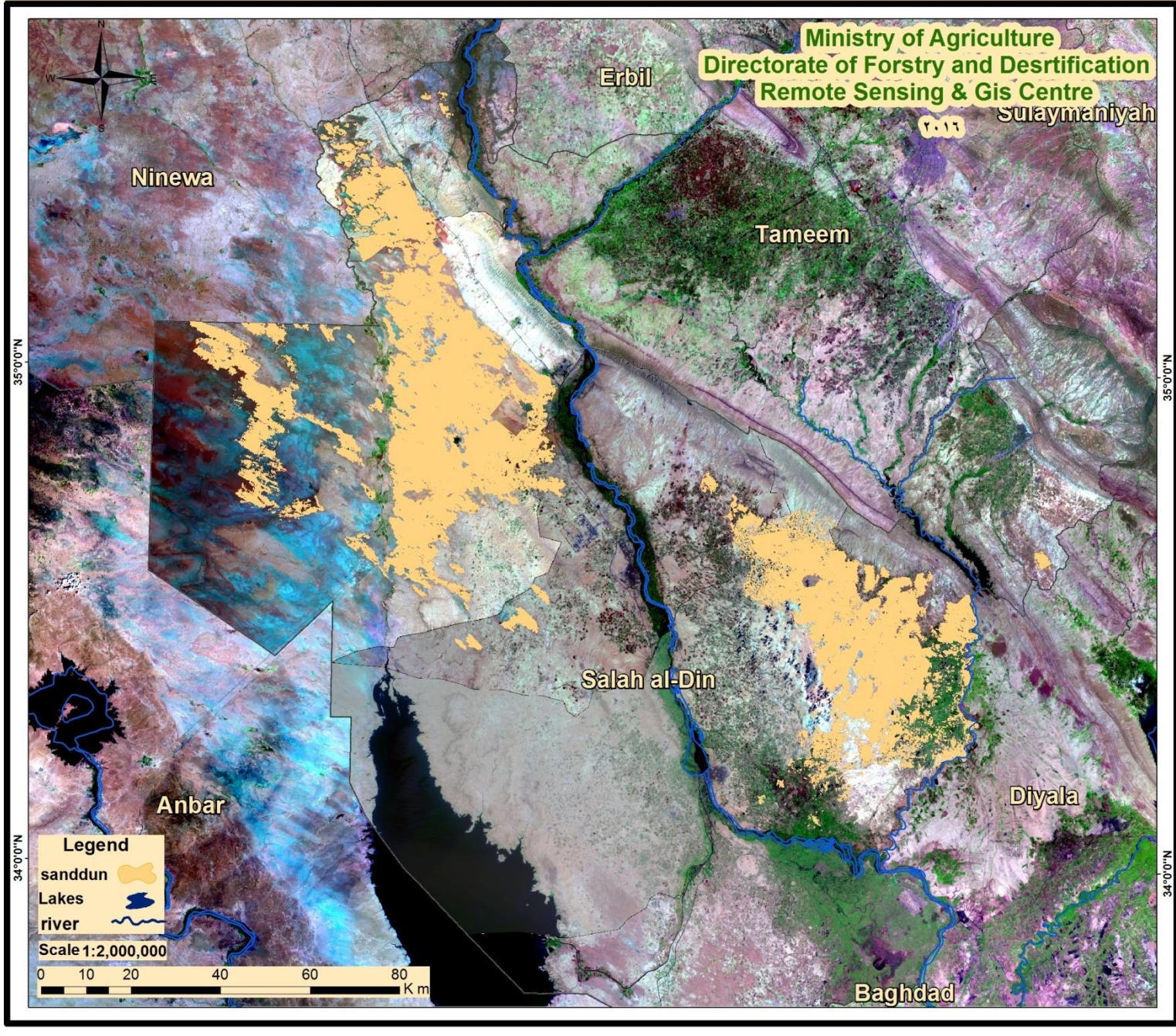
الاشهر

ك1	ت2	ت1	ايلول	آب	تموز	حزيران	مايس	نيسان	اذار	شباط	ك2	ن
4	5	3	8	16	20	15	18	9	-	2	2	19
-	2	-	1	6	19	14	9	10	1	5	4	19
-	3	-	2	4	5	6	6	2	10	-	-	19
-	2	1	1	10	6	8	3	6	3	2	1	19
-	2	-	-	2	6	2	3	1	1	-	-	19
-	-	-	5	2	-	2	1	-	2	2	-	19
-	-	-	1	14	13	1	1	3	4	1	-	19
-	-	-	1	-	4	3	-	-	3	-	1	19
-	-	-	1	1	4	4	5	-	4	-	-	19
-	-	-	1	1	2	4	3	1	3	-	1	20

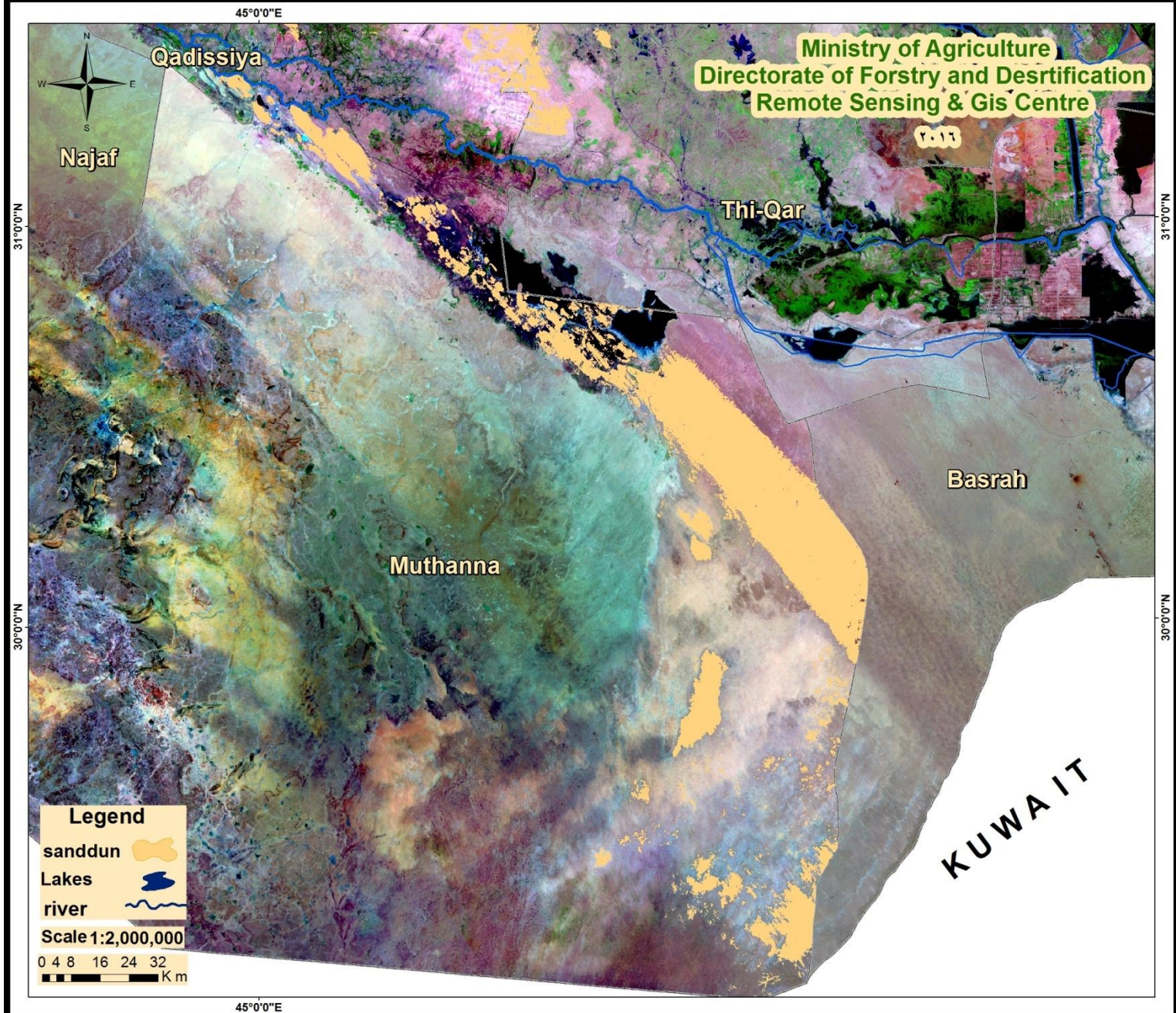
Active Sand dunes belt in Iraq Landsat 2006



Active sand dunes belt in Salah al-Din landsat 2006



Active sand dunes belt in South of Iraq Landsat 2006



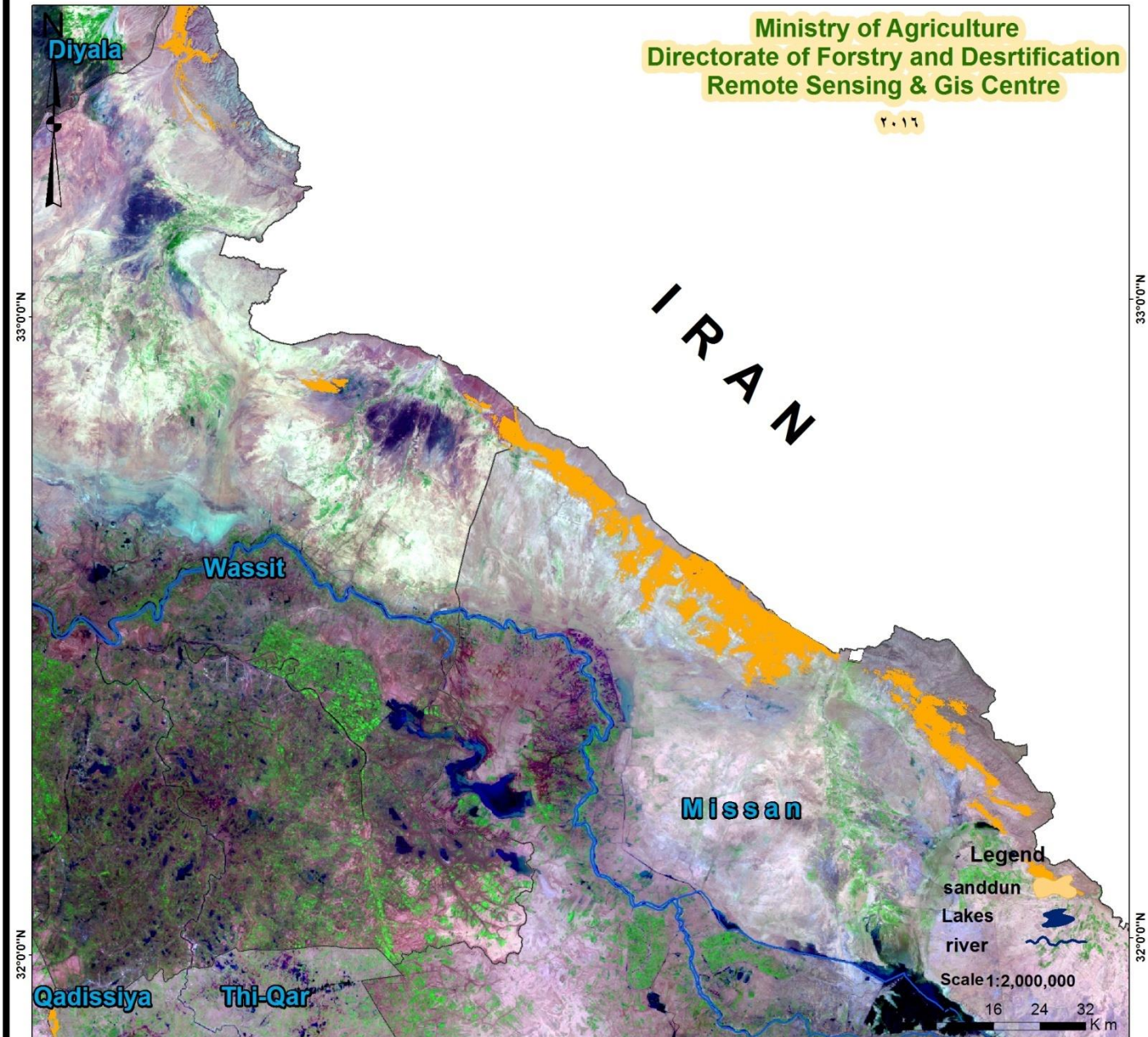
1990
South of Iraq



Active sand dunes belt in Missan landsat 2006

Ministry of Agriculture
Directorate of Forstry and Desrtification
Remote Sensing & Gis Centre

۲۰۱۶



33°0'0"N

33°0'0"N

32°0'0"N

32°0'0"N

Legend

sanddun

Lakes

river

Scale 1:2,000,000

16 24 32 Km

**Effect of active
sand dunes due
to its movement**

Railway lines affected by sand movment

کٺبان رملیه تغطي سکه حديد
بغداد بیجی موصل

Roads lines affected by sand movment



Roads lines affected by sand movment



Fuel station affected by sand movment



Irrigation gate way affected by sand movment



Main drainage canal affected by sand movement



Irrigation canal affected by sand movement



**Useing
Mechinal and Biological
metheds in sand dunes fixation**

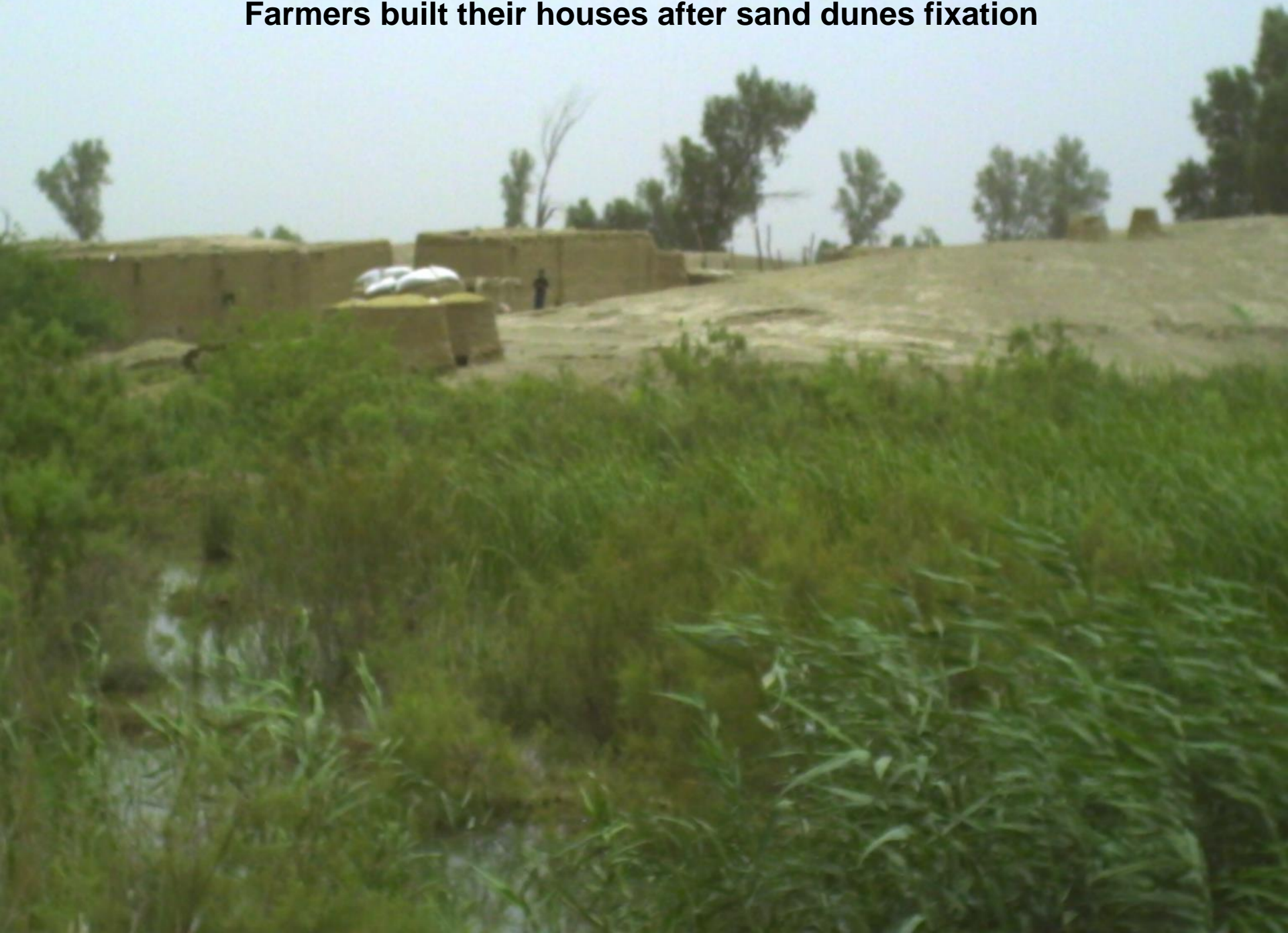


Covering dunes by heavy soil



Neutral vegetation (Tamarix articulata , prosopis spp) grow densely after two years from covering dunes

Farmers built their houses after sand dunes fixation





2



1

Planting long cutting of Tamarix artiulata on the active sand dunes in Salah al din cevernorate



4



3

before

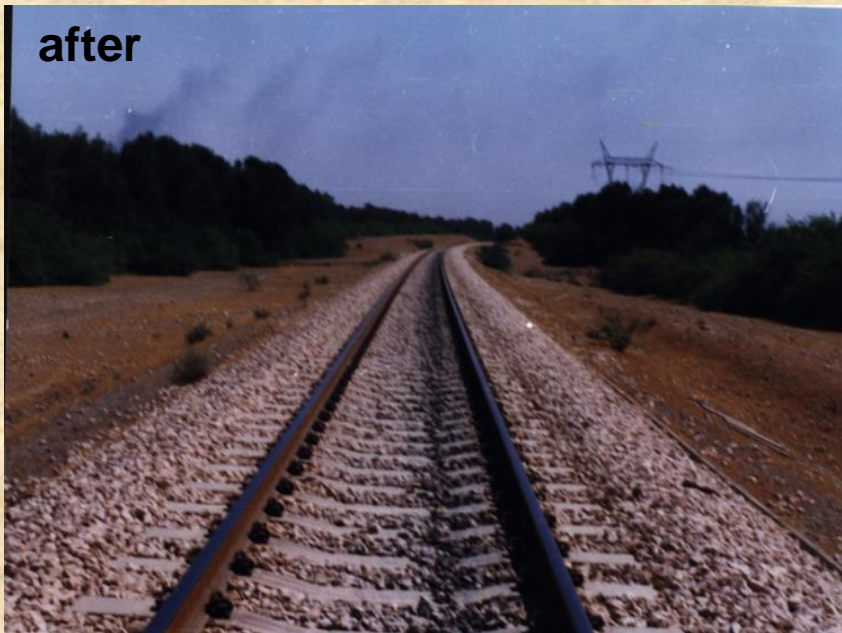


کۆنێان رملیه تەغی سکه حەدی
بەغداد بیجی موصل

before



after



after



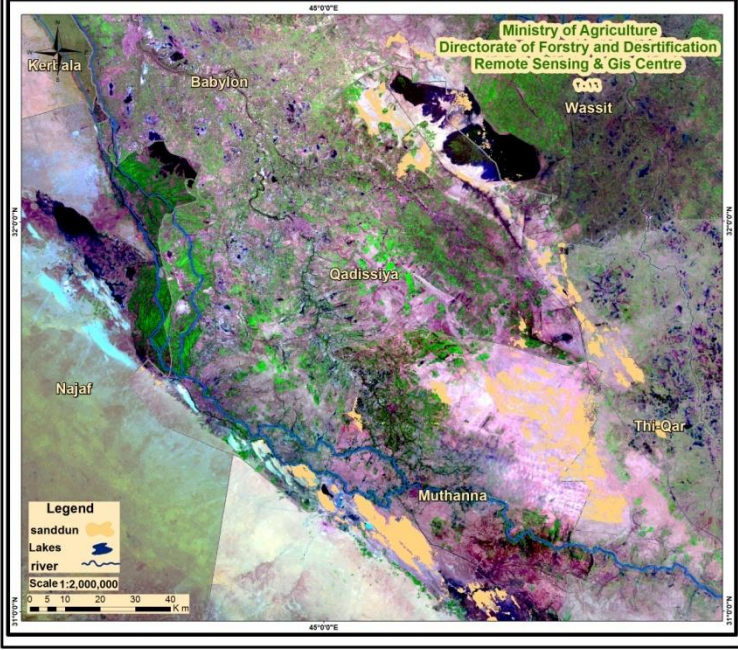
before



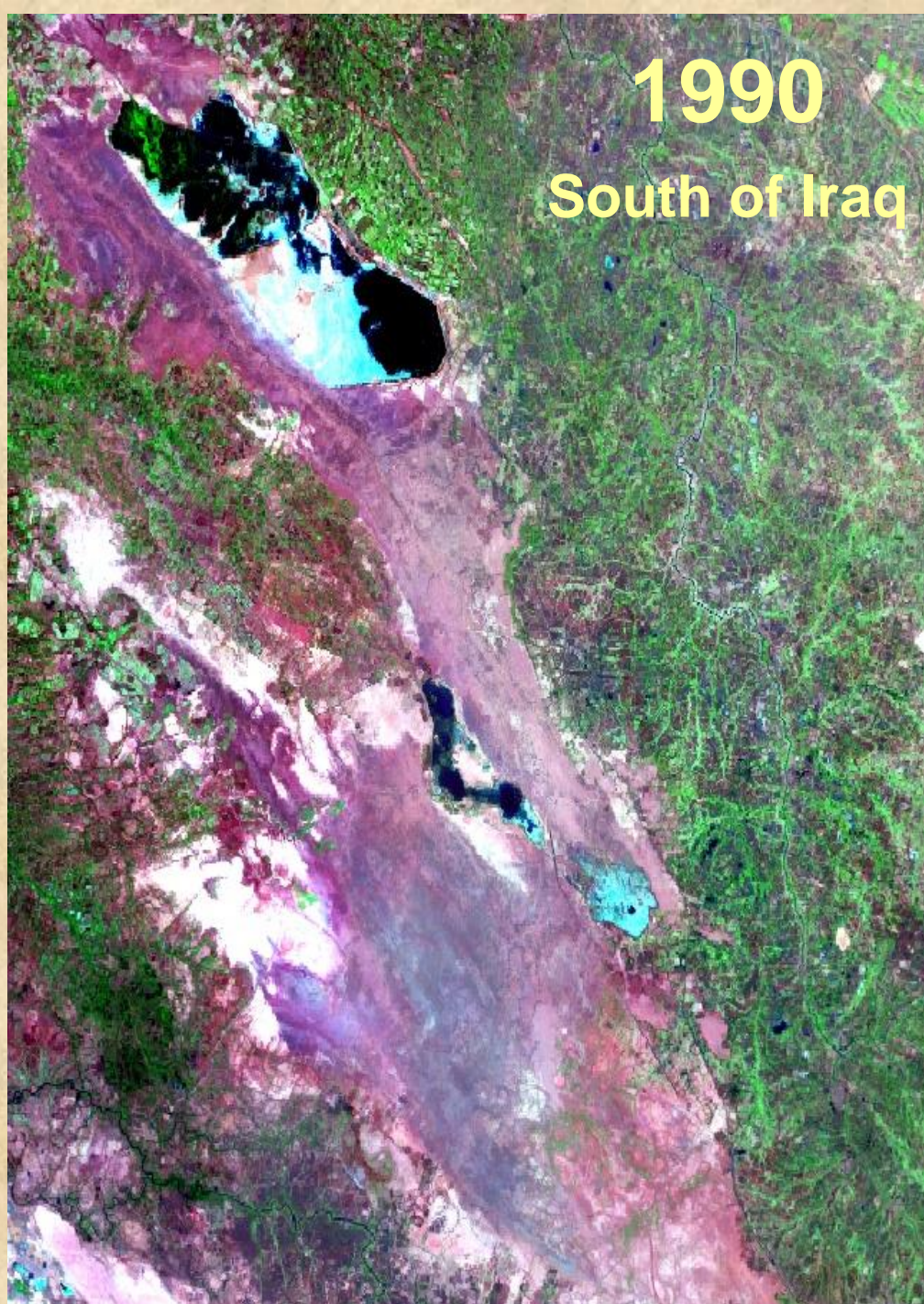
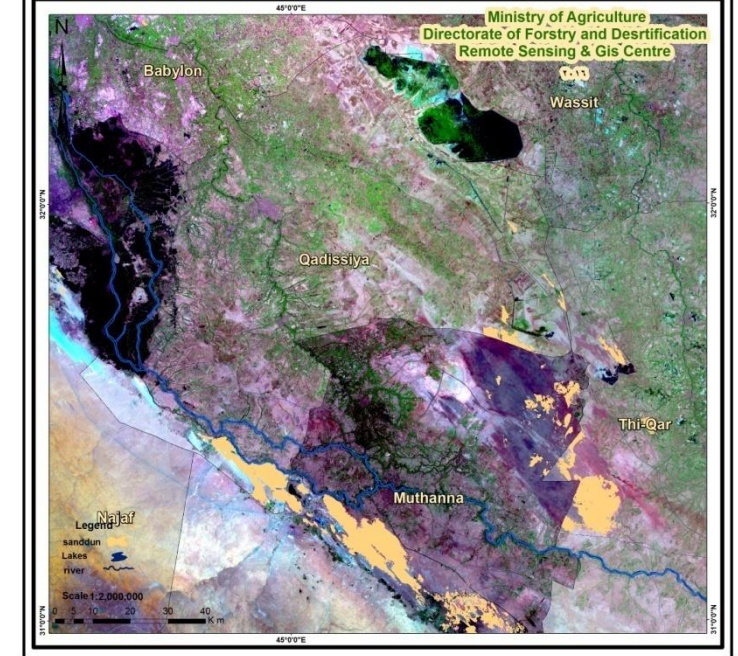
after



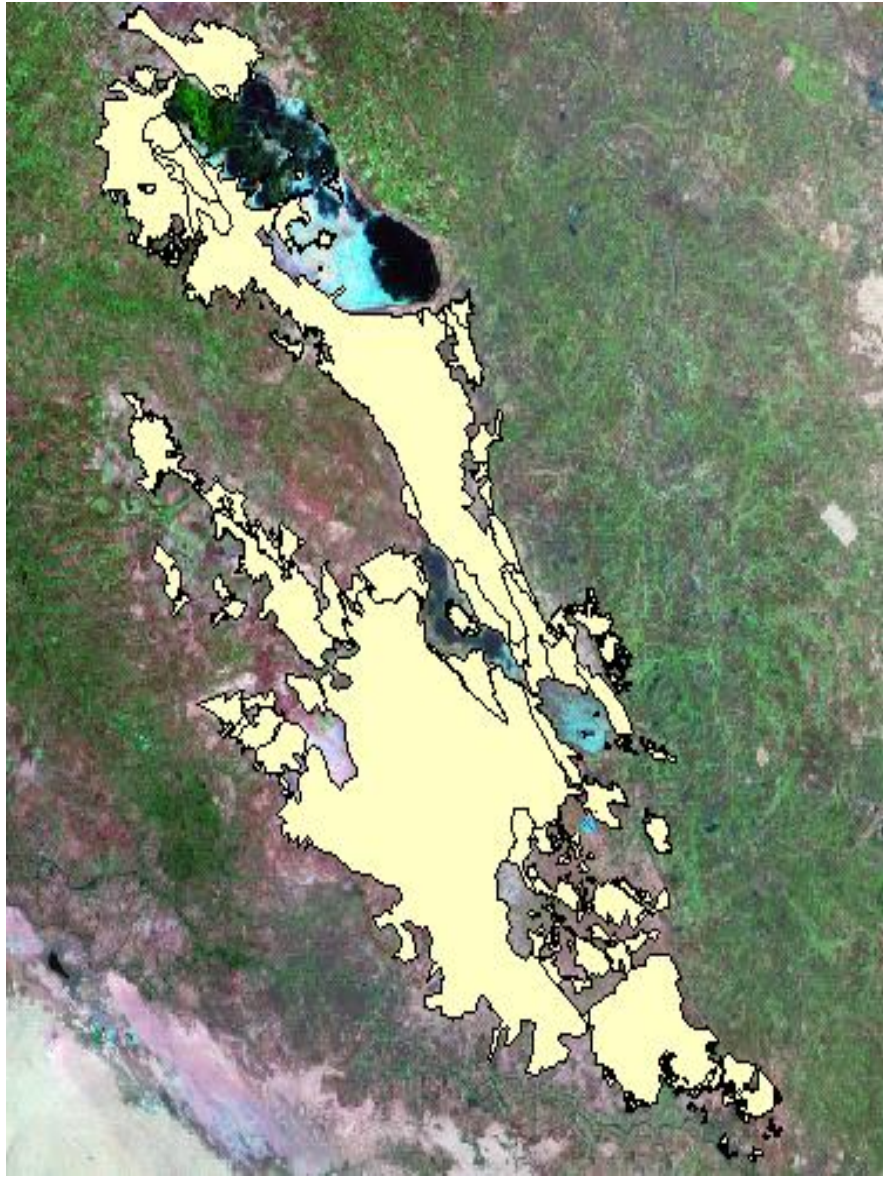
Active sundduns belt in South of Iraq Landsat 2006



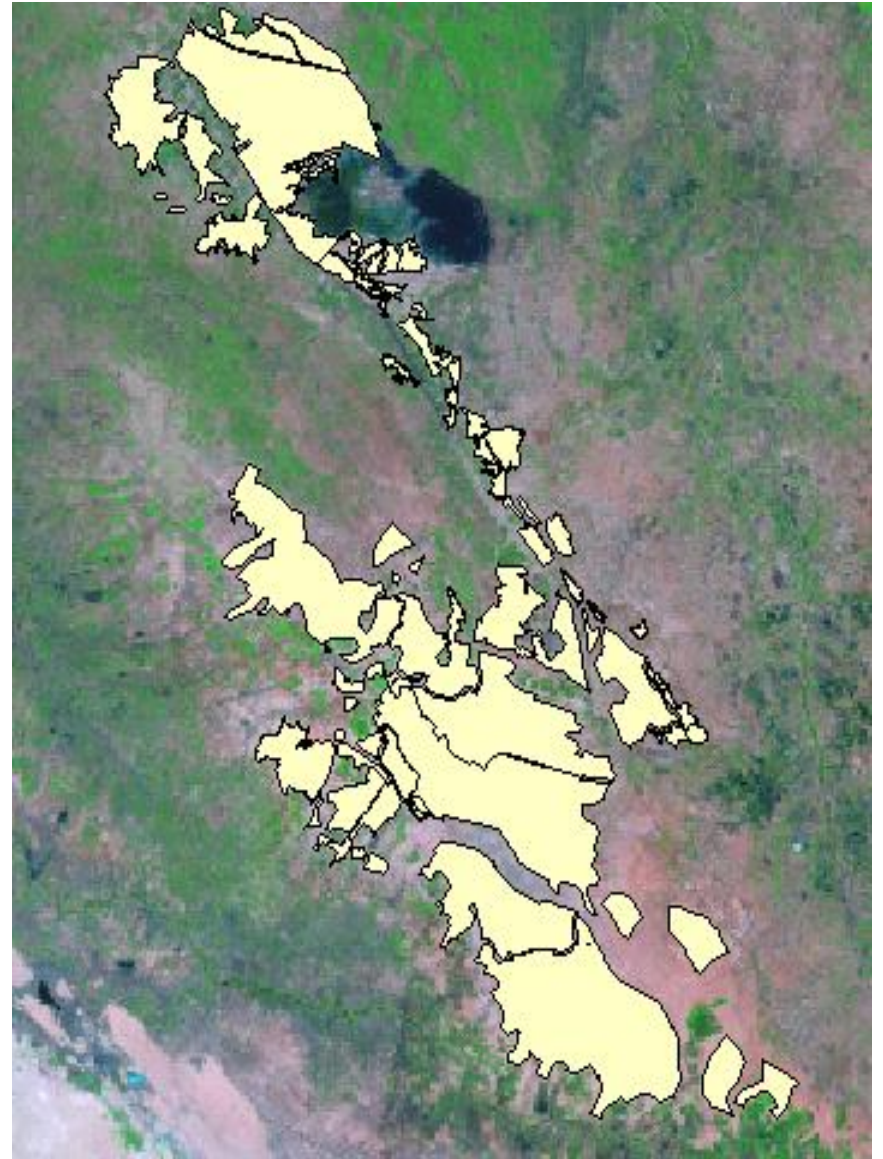
Active sundduns belt in South of Iraq Landsat 2013



1990



2001





Water harvesting activities





Desert Oases



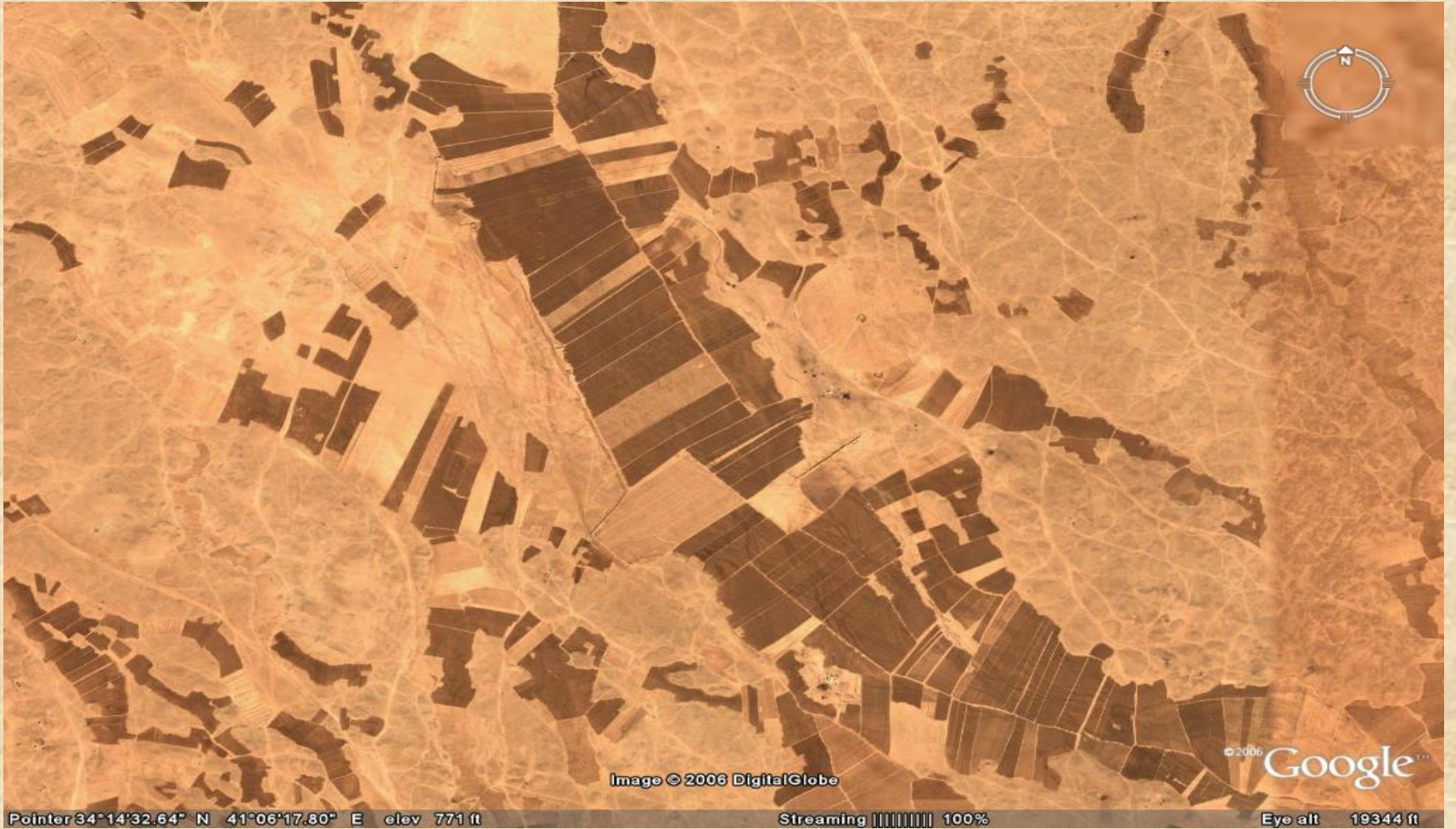


Nurseries



Misuse activates





زراعة الفيضات في الصحراء الغربية بالاعتماد على مياه الامطار الذي ادى الى تدهور الغطاء النباتي
(الجزء الاسفل من الصورة)/محافظة الانبار طريق القائم -عكاشات الطبيعي