

LAND CARE IN DESERTIFICATION AFFECTED AREAS: FROM SCIENCE TOWARDS APPLICATION

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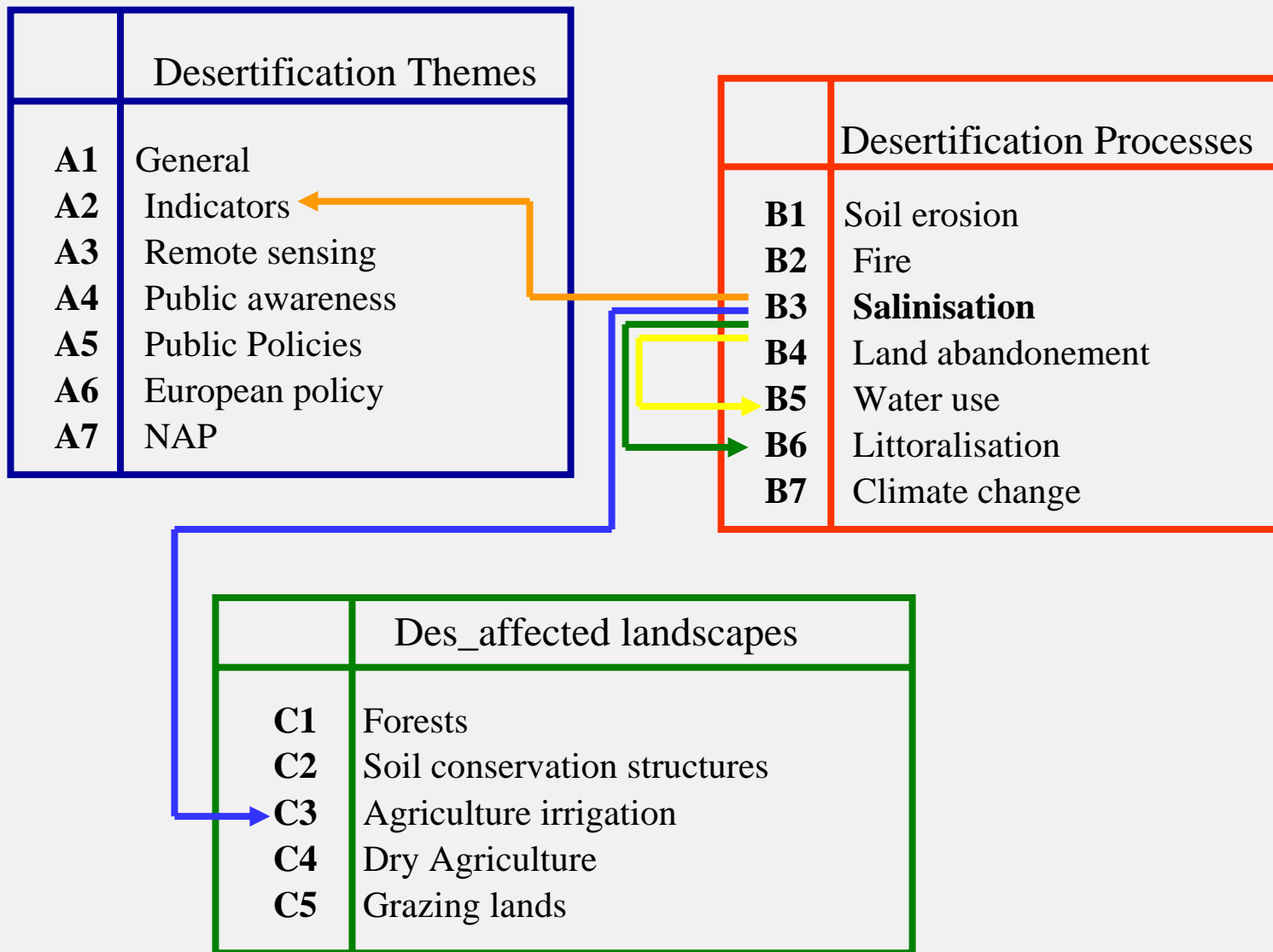
BAS Department

Desertification Group

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Interlinks



Contents identification

How to answer all of the what – where – which/who - why- how questions that the potential readers/stakeholders will have.

What: Salinity and salinisation terms for soil and water

Where: European affected areas, coastal and/or irrigated areas

Which/Who: natural and antropic causes

Why: cause and effect relationships (DPSIR)

How : to deal with or to manage it (mitigation and adaptation)

LUCINDA general purpose

What: This booklet will explain the nature and extension of salinisation in Europe and how it can be either a cause or an effect of desertification. These range from **1.** those that sometimes occur seasonally in areas of high evaporation where large amounts of water soluble salts are found in the soil, to those that **2.** occur as a result of the evaporation of irrigation water or **3.** the intrusion of saline groundwater, **n.....**

Where: It will present and explain the setting of salinity problems found in Europe. Hotspots of salinisation tend to correspond with areas of intensive agriculture in coastal areas in southern Europe.

Which/Who and Why: Competitive and intensive use of water resources, lithological characteristics. Salt affects soil properties, plant growth, soil erosion and consequently desertification (DPSIR).

How: The results of research in Europe will be described and translated into management strategies.

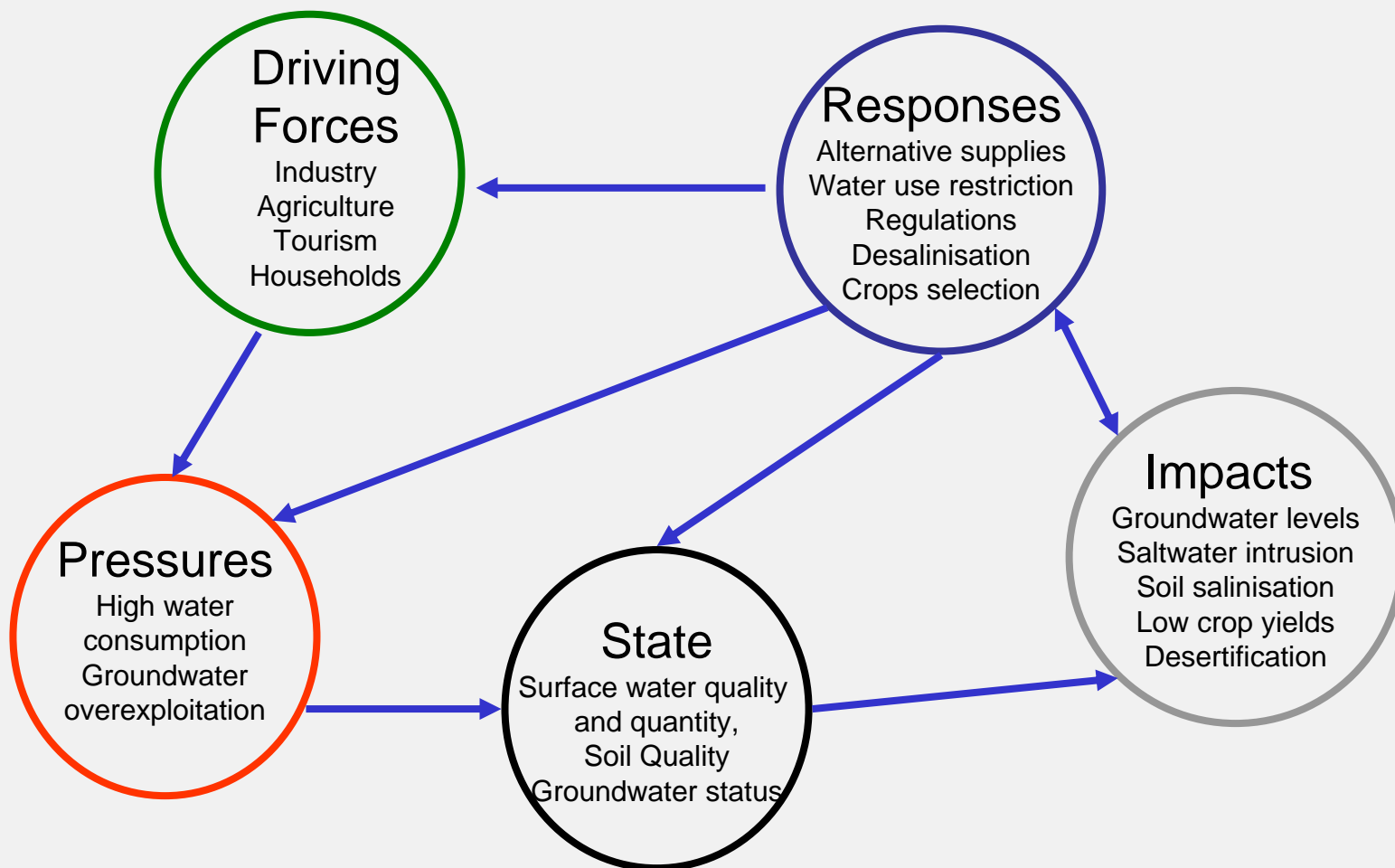
Main references

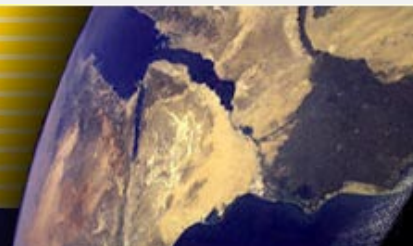
- ◆ **European Projects:** listed in Lucinda document
- ◆ **EEA reports:** Europe's water: an indicator based assessment.
Topic report 1/2003
State and outlook, 2005
- ◆ **JRC:** Soil atlas of europe, 2005
- ◆ **FOREGS:** Global Geochemical baseline maps of europe
- ◆ **Others:** Project Partners.....

Draft Index

<u>Terms and definitions (box on definitions)</u> Salinisation, alkalinisation, sodification	<u>pages 1</u>
<u>Extension of the phenomena and potential risk</u>	<u>pages 2</u>
<u>Salinisation typologies (box: Natural and Human induced)</u> 1. those that sometimes occur seasonally in areas of high evaporation where large amounts of water soluble salts are found in the soil 2. occur as a result of the evaporation of irrigation water 3. the intrusion of saline groundwater n.....	<u>pages 4</u>
<u>Cause-effect relationship (box: DPSIR model)</u>	<u>pages 3</u>
<u>Hot spot and processes dynamics (box: how to monitor salinity)</u>	<u>pages 3</u>
<u>Highlights – Raccomandations – Guidelines</u>	<u>pages 2</u>
<u>References</u>	<u>pages 1</u>

DPSIR: A FRAMEWORK FOR SALINIZATION



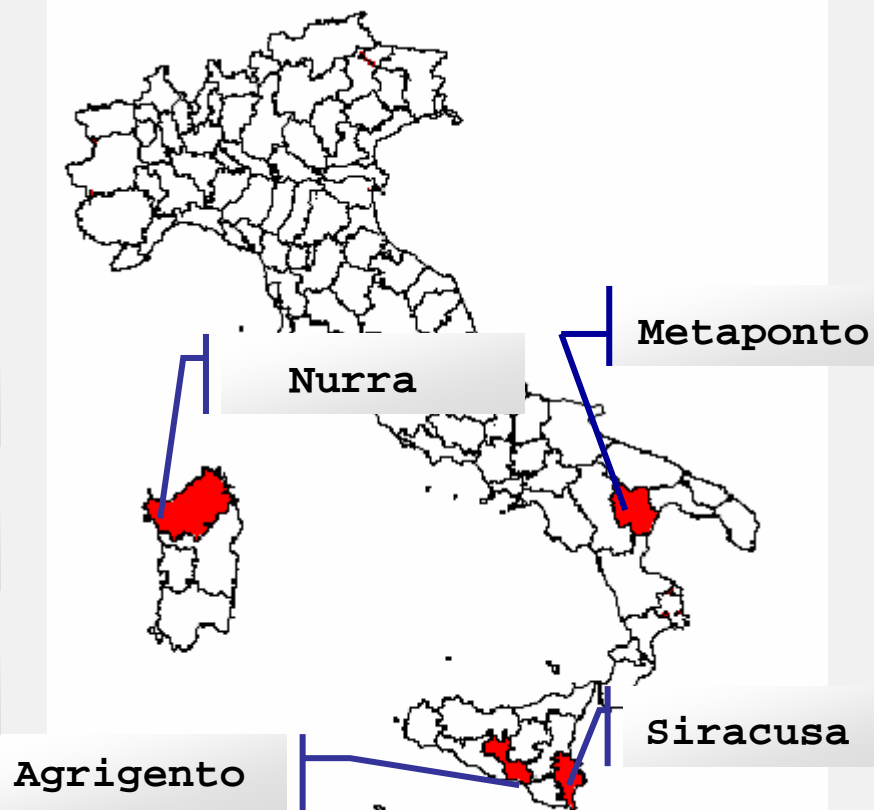


Integrated Research for Applying new technologies and processes for combating DEsertification

◆ Sardinia

◆ Sicily

◆ Lucania





RIADE hotspot with different characteristics

Region	Area	Driving forces	H.I	Lithology	Observed Range ECw $\mu\text{S}/\text{cm}$
Sardinia	Nurra	Tourism Agriculture	X	X	1000- 3000
Sicily	Licata	Agriculture	X	XX	3000- 14000
Sicily	Siracusa	Households Industry Agriculture	X	X	1000- 2500
Lucania	Metaponto	Agriculture Industry	X	X	1000-5000

Images about salinisation



Monitoring
water EC

Salinised Soils

Desalination
plant

Continuous
remote control
of Water EC

Highlights on SALINISATION

- ◆ A Growing issue
- ◆ Overexploitation water resources
- ◆ Partially reversible
- ◆ Agriculture plays double role

Strategies (raccomandation and guidelines)

◆ Adaptation

Crop choice, Cultivar choice
 Tunnel Shifting/rotation
 Rotation Irrigated/No-irrigated crops, ecc.

◆ Mitigation

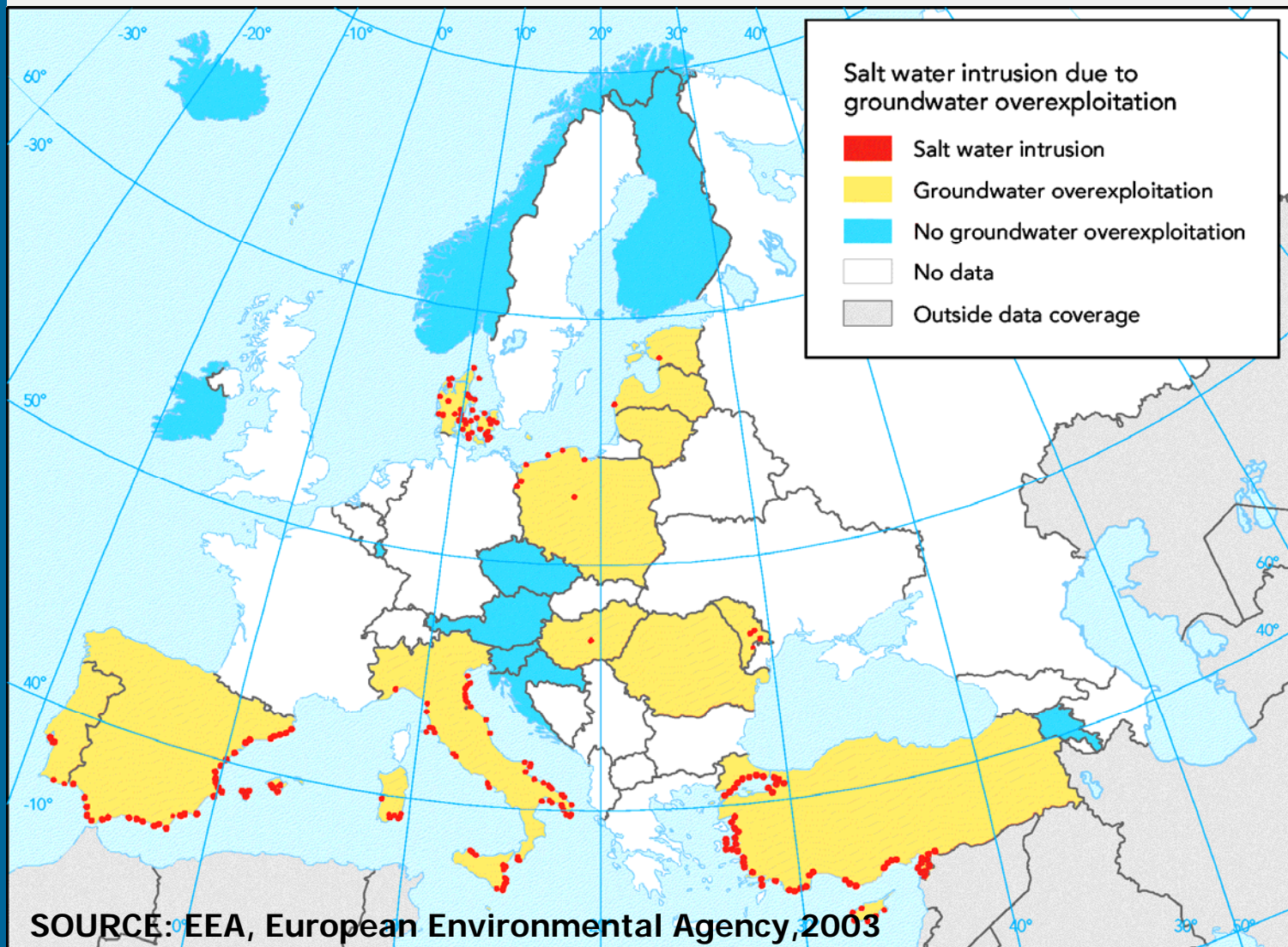
Water storage
 Water mix, water recycling, ecc.

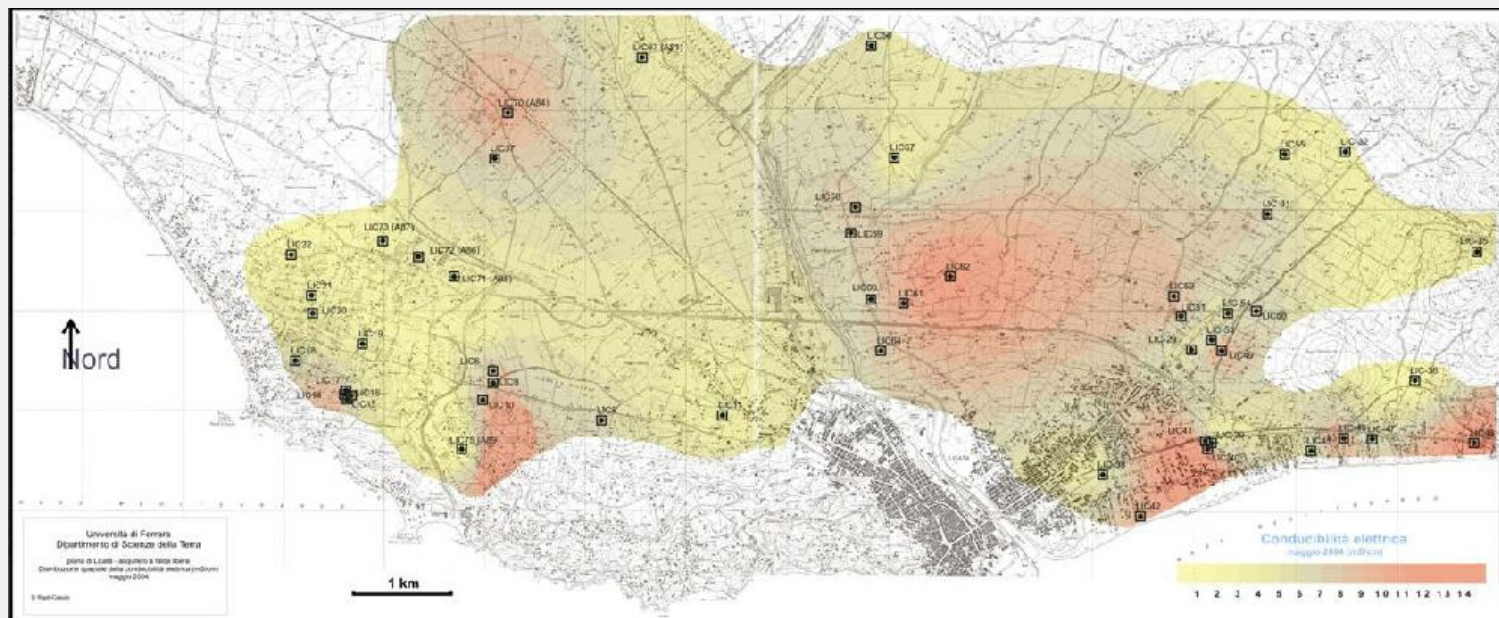
Mitigation

- ◆ Water storage
- ◆ Water mix
- ◆ Water exchange



Salt water intrusion





Licata plain, 2004
Spatial distribution of electrical conductivity, mS/cm

Italian National Agency for New Technologies, Energy and Environment



ENEA is a public organism that works in the field of Research and Innovation.

It is also operating as an agency for the public central and local administrations.

ENEA has roughly 3000 personnel units who work in **10** Research Centres spread in all the Country.

Desertification Group

A Group of 8 persons that carries out research activities on desertification within the framework of several national (RIADE) and European (DESERTNET, DESERTWATCH, DESURVEY) projects. The involvement of private companies facilitates the immediate application of research results and the creation of spin-off companies.

SALINISATION

Content harmonization between different tools for scientific dissemination

Booklet general view and specific issue about salinisation 16-20 pages with pictures, graphs, tables, boxes and bibliographies.

Target  officer, technicians, students

Leaflet short introduction to the theme, early warning on the phenomena (is not just a small booklet), easy to read and understand

Target  farmers and students

PPT Follow booklet contents but with shorter texts and more pictures/graphs and could be organized in a way to choice different path

Target  training

DVD it contain the previous tool that are “linked” plus clips

Target  training