

LeaDra

Land & Ecosystem
Degradation & Desertification

Response
Assessment

LEDDRA

an overview

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- LEDDRA philosophy
- LEDDRA approach
- LEDDRA objectives
- LEDDRA conceptual framework
- LEDDRA theoretical framework
- LEDDRA methodological framework
- Analysis of the policy context
- Study site applications
- Anticipated impacts



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Coordinators meeting
Brussels, October 22-23, 2012

Rational, responsive and effective sustainable land management and land use planning as well as sensible policy making at all levels rest on a fundamental prerequisite:

The systematic and holistic study of human responses to LEDD

Human responses to LEDD are any type of formal (planned, institutionalized) and/or informal (unplanned, non-institutionalized) action in LEDD-affected regions that purports to:

- (a) directly and explicitly tackle a LEDD problem or
- (b) address other socio-economic problems as well as individual and collective goals

Responses to LEDD depend critically on
WHO does **WHAT**, **WHEN**, **WHERE** and **WHY**



LEDDRA posits that:

there is a **dynamic two-way relationship** between

- (a) LEDD problems **and** their geographic, socio-environmental and institutional context, and
- (b) responses to LEDD problems **and** their context.

The **success of responses** in meeting environmental and social goals depends on **how they fit** and how they are **well adapted** to the biophysical and societal conditions prevailing in a region



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LEDDRA approach

LEDD occurs in **socio-ecological systems (SES)**
i.e. in **coupled human-environment systems**

LEDDRA adopts the **ecosystem approach** and
the **Complex Adaptive Systems** and
the **Resilience Thinking** paradigms to study
the **socio-ecological fit of responses to LEDD**

Three main **land themes**, distinguished according to
three land use/land cover types, are examined:

cropland, grazing land, forests/shrubland

Each land theme is characterized by a particular
mode of production

Study sites, representative of the land themes, have been
chosen from Italy, Greece, Spain, Morocco and China



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LEDDRA objectives

- A. To develop the **theory of responses to LEDD** in general, for cropland, grazing land and forest/shrubland regions and in selected study sites
- B. To compile, improve and enrich **existing** and develop **new integrated assessment methodologies** to:
 - (a) assess the socio-ecological fit of various types of existing or proposed responses to LEDD and
 - (b) identify **optimal response assemblages**
- C. To provide **applications** in selected study sites
- D. To introduce **the policy context** and to provide **policy recommendations** at various levels; in general, for cropland, grazing land and forest/shrubland regions and in selected study sites drawing on the theoretical and applied research results

LEDDRA conceptual framework

Land & ecosystem degradation and desertification (LEDD)

A reduction, or progressive loss, in the potential or capacity of ecosystem(s) to support **vital environmental and socio-economic functions**, the provision of ecosystem services and the efficient use of resources in the present and in the future.

Response Assemblage

The combination of response types and measures **and** the environmental, socio-economic and institutional conditions that prevail in a region

Socio-ecological fit of responses to LEDD

The degree to which responses are **well adapted** to the prevailing biophysical and socio-economic, cultural and institutional conditions in a region and preserve its **socio-ecological resilience**

LEDDRA conceptual framework

Socio-ecological resilience (SER)

The capacity of a socio-ecological system to respond to disturbances and reorganize, while undergoing change, so as **to preserve its critical functions, structure and feedbacks** that secure its continued normal functioning and ensure that future development options are not foreclosed.

Positive responses to LEDD, planned and unplanned, and **Optimal Response Assemblages** enhance the **socio-ecological resilience** of an affected region.



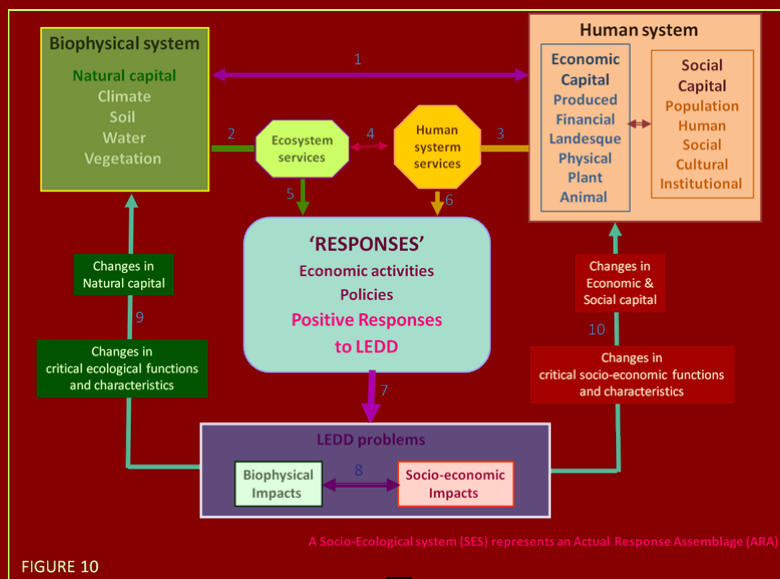
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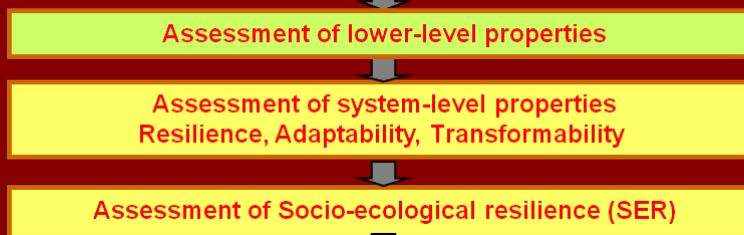
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LEDDRA conceptual framework

Stages



**Theory
&
Assessment
(description
and explanation)
of SES/ARA**



**Assessment of
system level
properties &
SER**

**Evaluation criteria
Assessing the Fit of responses to LEDD**

**Assessment & explanation (theory)
of fit of responses to LEDD**

**Fit of ARA?
Policy and management recommendations
ORA?**

**Guidance for managers &
policy makers**

FIGURE 11

LEDDRA theoretical framework

LEDD problems and responses to LEDD arise from the interaction among three broad types of capitals:

- Natural
- Economic
- Social

The **relationships among the components** of the three capitals determine the **properties of the SES** and, eventually its **socio-ecological resilience**, and its dynamics over time

Particular emphasis is placed on the important role of social capital in shaping socio-ecological resilience at the regional and the community level (community resilience)

LEDDRA methodological framework

Focal scales for the study of the socio-ecological fit of responses to LEDD: **regional and community**

Based on the conceptual and the theoretical frameworks, the methodological framework comprises the following steps:

- Evolution of the SES – state and transition periods of the SES
- Description of the state and transition periods of the SES; i.e. the ARA in each period
- Analysis of each state and transition period of the system – capitals, relationships, role of policies, properties, SER, socio-ecological fit of responses
- ORA – optimizing the current ARA
- Guidance: policy & land management recommendations based on the analysis

LEDDRA methodological framework

Tools for the analysis of the SES over time and the assessment of socio-ecological resilience (SER)

- Storylines
- Quantitative and qualitative methods and techniques to assess:
 - The components of the capitals
 - The relationships among the components of the capitals
 - The properties of the SES
 - Socio-ecological resilience (SER)
 - The socio-ecological fit of responses to LEDD

The qualitative methods include in-depth and elite interviews and stakeholder workshops

The methods and techniques employed may apply to all land themes in general and to specific land themes in particular

Analysis of the policy context

Selection of policies that directly and/or indirectly relate to LEDD and to responses to LEDD, acting as drivers either of LEDD or of responses to LEDD

- International agreements
- EU policies
- National policies

Some policy may be land theme-specific (e.g. forest policies)

National level:

Description of selected policies

Study site level:

Analysis of policy implementation, impacts, effectiveness

Analysis of the policy context

Example of policies analyzed at the two Greek study sites

Development policies

Agricultural/rural policy
Regional development policy
Transport policy
Spatial policy
Energy policy
Tourism policy

Environmental Policies

Horizontal policy
Water policy
Nature protection policy
Forest policy
National Plan to Combat
Desertification and Drought

Horizontal policies

Administrative

LEDDRA study site applications

Cropland	Grazing land	Forests/ shrubland
Greece, Italy, Spain, China	Spain, Greece, Morocco	Italy, Spain
<ul style="list-style-type: none"> ▪ Messara Valley, Crete (Greece) ▪ Alento river basin (Italy) ▪ Zhang Jiachong area-Zi Gui County (China) ▪ Jucar river watershed (Spain) ▪ Western Andevalo-Sanlucar de Gadiana area (Spain) and Huel Baixo Gadiana (Mertola & Alentejo (Spain-Portugal)) 	<ul style="list-style-type: none"> ▪ Sobrabe Area-Huesca Province, Aragon (Spain) ▪ Timhdit area-Land of the Ait Beni Yakoub tribe-Middle Atlas (Morocco) ▪ Asteroussia Mts., Crete (Greece) 	<ul style="list-style-type: none"> ▪ Matera Prefecture-Mediterranean Coastal & Upland study site (Italy) ▪ Western Andevalo-Sanlucar de Gadiana area (Spain)

The analysis is performed at the level of the study site as a whole (regional level) and at the level of selected communities from each study site (community level)

LEDDRA study site applications

The study site applications in LEDDRA serve as research tools to:

- ✿ assist in the development of theory, assessment methodologies and policy analysis, and
- ✿ illustrate of theory, assessment methodologies and policy analysis that are developed in LEDDRA

A **Study Site Application Plan (SSAP)** has been developed, and it is continuously being refined and updated, to guide the consistent analysis of all 10 study sites.

Work carried out so far at most study sites:

- Delineation of the SES, selection of communities for in-depth study
- Data collection and analysis at the regional and the community level
- Identification of the state and transition periods of the SES
- Assessment of capitals and their relationships
- Policy analysis – selection of policies, description, analysis of policy implementation and impacts (preliminary)
- Stakeholder workshops

LEDDRA Dissemination

Implementation of the LEDDRA DUE plan:

- Actors
- Media
- Modes

Actors

Compilation of lists of stakeholders from the international to the local level

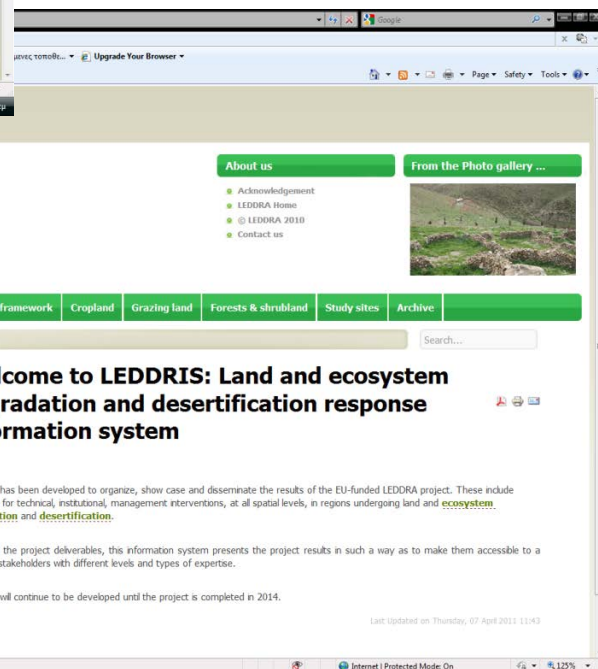
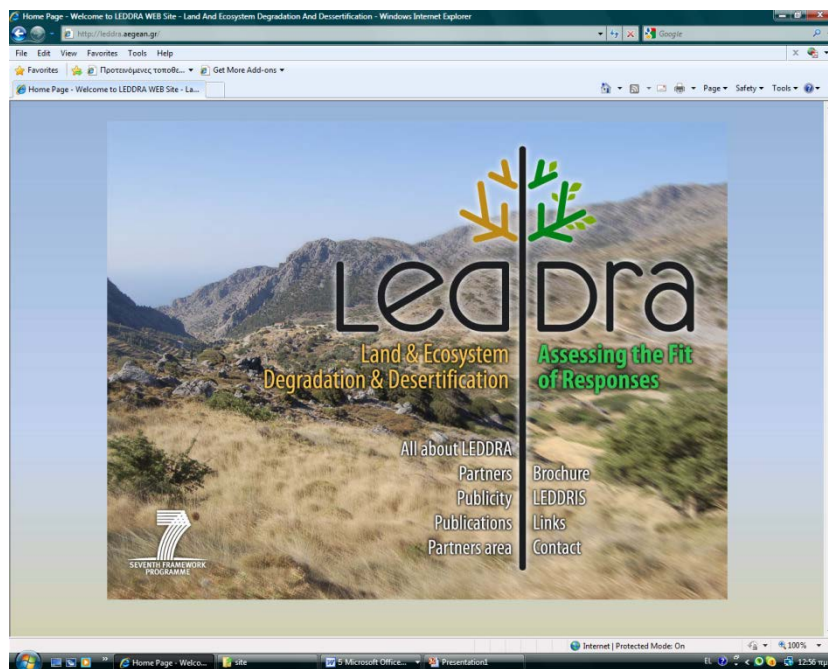
Media

Journal publications, conference presentations, press releases, LEDDRA brochure, LEDDRA website (<http://leddra.aegean.gr>). LEDDRiS (<http://www2.aegean.gr/leddris>)

Modes

Conferences (participation, organization, special sessions)
Special events (China, Morocco)
Stakeholder workshops
Radio and TV talks

LEDDRA Dissemination



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LEDDRA anticipated impacts

Strategic impact

- Enrich the understanding of responses to LEDD in a cross-national context
- Provide valuable knowledge for policy makers at all levels and for local stakeholders

International level

- support the “Science Programme” of the CST
- address UNCCD implementation-related concerns (10-year Strategy (COP8))
- suggest synergies among the UNCCD and the UNCBD

EU level

Essential knowledge and support:

- to formulate strategies and plans
- to take action to address the main soil threats (EU Soil Thematic Strategy)
- to formulate an EU Soil Framework Directive (draft Directive COM(2006) 232)
- to inform related policies (development and environmental) and policy initiatives (e.g. disaster preparedness)

National and local level

Essential integrated knowledge to:

- update and improve existing or formulate new NAPs in affected regions
- assist stakeholders in making informed land management decisions

Thank you