

Part II: Case studies

2.1 SLM case studies

- Cropping management (8 case studies)
- Water management (8 case studies)
- Cross-slope barriers (7 case studies)
- Grazing land management (2 case studies)
- Forest management (5 case studies)
- SLM approaches (8 case studies)

Water harvesting from concentrated runoff for irrigation purposes

Water harvesting from concentrated runoff is a highly effective and low-cost water harvesting technique. It involves the collection of runoff from a catchment area and its storage in a reservoir for later use in irrigation. This technique is particularly suitable for semi-arid and arid regions where rainfall is low and concentrated in short, intense events.

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DESIRE methodology flowchart

The flowchart illustrates the DESIRE methodology, starting with 'Assessment' (including land use, soil, and water resources), followed by 'Design' (technical and institutional), 'Implementation' (construction and management), and 'Monitoring & Evaluation' (performance and sustainability). It also includes a 'Benefits' section detailing economic, social, and environmental gains.

2.2 Mapping case studies

- Spain – Portugal – Italy – Greece – Turkey – Morocco – Tunisia – Russia – China – Botswana – Mexico – Chile – Cape Verde

2.3 DESIRE methodology examples

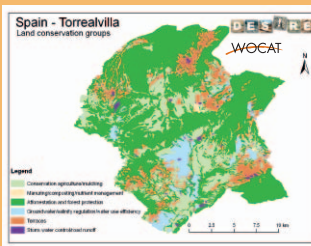
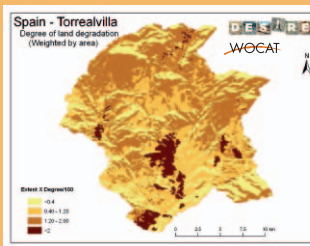
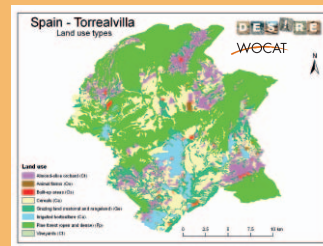
- Eskişehir (Turkey)
- Yan River Basin (China)

DESIRE methodology implementation table for Spain - Torreavilla

| Implementation activities, inputs and costs | Estimated inputs and costs per ha | Costs (€) | % total cost |
|---|--|-----------|--------------|
| 1. Construction of a land bank | Labour, 1000 h; Materials, 1000 kg; Transport, 1000 km; Fuel, 1000 l; Water, 1000 m³ | 1000 | 100 |
| 2. Rehabilitation of the land | Labour, 1000 h; Materials, 1000 kg; Transport, 1000 km; Fuel, 1000 l; Water, 1000 m³ | 1000 | 100 |

DESIRE methodology assessment table for Spain - Torreavilla

| Assessment | Benefits compared with costs | Short term | Long term |
|--|------------------------------|------------|-----------|
| Production and non-production benefits | Positive | Positive | Positive |
| Ecological benefits | Positive | Positive | Positive |
| Off-site advantages | Positive | Positive | Positive |



Desire for Greener Land

Options for Sustainable Land Management in Drylands



Cape Verde, Erik van den Elsen

Desire for Greener Land compiles options for Sustainable Land Management (SLM) in drylands. It is a result of the integrated research project DESIRE (Desertification Mitigation and Remediation of Land - A Global Approach for Local Solutions). Lasting five years (2007–2012) and funded within the EU's Sixth Framework Programme, DESIRE brought together the expertise of 26 international research institutes and non-governmental organisations. The DESIRE project aimed to establish promising alternative land use and management strategies in 17 degradation and deserti-

fication sites around the world, relying on close collaboration between scientists and local stakeholder groups. The study sites provided a global laboratory in which researchers could apply, test, and identify new and innovative approaches to combatting desertification. The resulting SLM strategies are local- to regional-scale interventions designed to increase productivity, preserve natural resource bases, and improve people's livelihoods. These were documented and mapped using the internationally recognised WOCAT (World Overview of Conservation Approaches and Technologies) method-

ological framework, which formed an integral part of the DESIRE project.

The book describes the DESIRE approach and WOCAT methodology for a range of audiences, from local agricultural advisors to scientists and policymakers. Links are provided to manuals and online materials, enabling application of the various tools and methods in similar projects. The book also includes an analysis of the current context of degradation and SLM in the study sites, in addition to analysis of the SLM technologies and approaches trialled in the DESIRE project. Thirty SLM

technologies, eight SLM approaches, and several degradation and SLM maps from all the DESIRE study sites are compiled in a concise and well-illustrated format, following the style of this volume's forerunner *where the land is greener* (WOCAT 2007). Finally, conclusions and policy points are presented for decision makers, the private sector, civil society, donors, and the research community. These are intended to support people's efforts to invest wisely in the sustainable management of land – enabling greener drylands to become a reality, not just a desire.



Morocco, Gudrun Schwilch

Policy recommendations:

- Strengthen collaboration of scientists with stakeholders;
- Link local knowledge with the latest technologies emerging from the scientific community, using a structured participatory process involving all stakeholders;
- Include stakeholder-defined criteria for selecting SLM options;
- Perform standardised assessments using WOCAT tools; and
- Acknowledge that SLM has benefits with respect to many global concerns, including water scarcity, resource use efficiency, energy supply, food security, poverty alleviation, climate change, and biodiversity conservation.

This book aims to help decision makers and donors in their efforts to invest wisely in sustainable management of land.

Part I: Methodology, analysis and synthesis

- 1.1 The process of identifying and trialling options for SLM
- 1.2 Analysis of degradation and SLM maps
- 1.3 Analysis of assessed SLM technologies and approaches across DESIRE sites
- 1.4 Conclusions and policy points

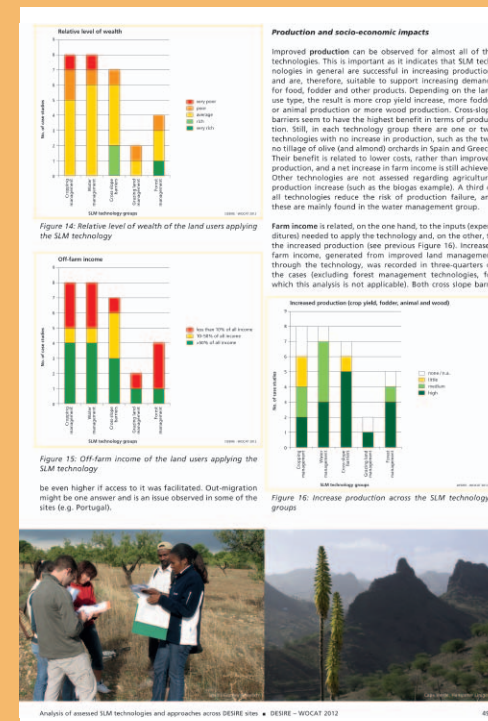


Table 1: DESIRE Study Sites
17 study sites in total (two study sites located in Portugal).

| Nr. | Country | Site | Site (km ²) | Land use | Degradation |
|-----|------------|-----------------------------|-------------------------|---|---|
| 1 | Spain | Gadaleites (Bambú de Jerez) | 250 | Arable (in-row-in); forest; orchards | Erosion, salinisation |
| 2 | Portugal | Al Maçãs (Il Góis) | 400 | Moistly forest; some agriculture | Wildfires, erosion |
| 3 | Italy | Medina | 410 | Mainly arable (dry cereals); Olives; forest | Erosion, mass movements, sedimentation |
| 4 | Greece | Crete | 1000 | Widespread olive, shrub and livestock pasture | Soil erosion, soil and water salinisation, water stress |
| 5 | Greece | Haidos | 50 | Irrigated agriculture, marshes | Salinisation |
| 6 | Turkey | Kangir | 120 | Irrigated agriculture | Salinisation, groundwater level |
| 7 | Turkey | Ekiseler | 90 | Dryland (in agriculture, pasture) | Soil erosion, salinisation, droughts |
| 8 | Morocco | Mamma'sshouh | 400 | Decreasing cork oak, increasing agriculture and grazing | Erosion, biological degradation |
| 9 | Tanzania | Zenoo-Koutre | 900 | Kangarid, agriculture | Biological degradation, erosion by wind and water, drought |
| 10 | Russia | Djnybek | 12370 | Grassland, Artificial forest belts | Vegetation degradation, salinisation, erosion by wind and water |
| 11 | Russia | Izvy-Sentov | 29000 | Irrigated agriculture | Salinisation, waterlogging |
| 12 | China | Loess plateau | 7000 | Arable farming, cash crops, grass planting and agroforestry | Water erosion |
| 13 | Bolivia | Itiner | 30000 | Mixed land use: grassland savannah | Vegetation degradation, wind erosion |
| 14 | Mexico | Cuicatlan | 650 | Cropland, forest, grassland | Soil erosion by water |
| 15 | Chile | Secano Interior | 9100 | Cereals, forest plantations | Soil erosion by water |
| 16 | Capo Verde | Ribeira Seca | 70 | Mainly rainfed agriculture | Soil erosion by water drought |

For more detailed information about DESIRE study sites, see the compilation and synthesis of DESIRE study site descriptions!

Methodology

Select study sites

The selection of study sites will be dependent on a particular project's aims and objectives.

Within the DESIRE project, it was always the strategy to work with study sites in which research had been on-going for several years prior to the project, so that the work of the project could build on previous experience and benefits from existing datasets. However, this was just one of many criteria that resulted in DESIRE selecting 17 study sites distributed across the world from southern Europe, southern America and Africa