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Fact Sheet 4

A publication from the DESIRE project - funded by the European Union's 6th Framework Program 'Global Change and Ecosystems'

Encouraging sustainable management of fragile and degraded ecosystems

Based on experience in Sehoul, in the Rabat region of Morocco

- demonstrated by the results of field experiments

Incentives to land users to exclude grazing animals and plant Atriplex shrubs help to stabilise and prevent gully formation

Paths made by grazing animals can become heavily eroded unless they are controlled

To succeed in the fight against land degradation and degradation of natural resources, which can lead to desertification, it is important that mitigation measures are designed, approved and appropriated by local land users. It is important to demonstrate that the measures proposed to combat land degradation are environmentally effective and sustainable.

The need for a multi-purpose and long term vision

To promote agriculture, especially in such a fragile region, and with a goal of sustainability, a vision for the long term is necessary, considering many factors such as soil fertility, biomass, biodiversity, availability and water quality. For this, we must identify, in each territory and with the participation of local stakeholders, workable strategies or existing agricultural potential. Strategies must consider the dimensions of soil and water conservation, evaluate the economic, social and ecological, factors according to a reliable and unified protocol, and incorporate both immediate and long-term impacts. We will then see land users develop a consciousness so that they become capable of choosing sustainable, strategies best suited to local conditions.

The DESIRE approach

In this project, pilot schemes have been selected by local stakeholders, and tested locally, on the scale of farms owned or farmed by interested volunteers. Experiments have been conducted in order to ascertain that the ecological, economic and social benefits of these selected actions are simple and easy to reproduce, and to facilitate their gradual adoption by other farmers. If these actions provide economic returns, with few negative impacts, they may be the basis for profound changes in land use operating systems and land resource management, to be recommended as part of development projects designed with the help of all stakeholders.

Participation

The facilities to be proposed must be designed, approved and appropriated by local stakeholders. Demonstration of both their environmental effectiveness and efficiency in terms of social development, must be made by active involvement of all local stakeholders through field trips and workshops in the municipality. Scientific research and the participatory approach should be combined, for the best chances of new sustainable measures.

Potentials and constraints for sustainable land use

In the forest areas

Techniques, such as the planting of exotic pine and eucalyptus, help to restore the forest area of cork oak forest area of Sehoul - Mamora, which are subject to unsustainable collection of wood for fuel etc. and fodder for animals. Recently, assisted regeneration of cork oak has been introduced. Comparisons show the importance of this regeneration which, over the short term, provides a good ground cover rich in plant nutrients, which improves hydrological features and enhances biodiversity. In the long term, this produces cash, cork tree cover to reduce erosion risk, wood, and fodder.

Assisted regeneration of cork oak

Is the future in regeneration operations accompanied by high costs, or in more rational management of existing coverage, with more voluntary participation with rights? This question raises the whole issue of forest management and accountability. Bold new ideas and decisions are welcome!

In cropland

Land conservation under cereals can be improved by different management on fallow and stubble crop operation. The conservation of stubble as mulch (usually removed by grazing animals) in summer and reduced tillage the following autumn maintain a vegetation cover protective against soil erosion. Follow-up experiments have shown the benefits to the soil, water and biological potential of deferring the grazing of fields until after grain harvest, and using direct seeding .

Grazed and ungrazed land

In degraded land

The rehabilitation of the badlands, once cultivated and then abandoned after degradation, can be achieved by planting shrubs to reduce gully erosion. The reconstruction of a canopy with value as forage represents a win-win option. The monitoring was achieved by comparing the evolution of two dissected areas, one planted with *Atriplex,* which improves infiltration of water, decreases runoff , and restores gullies.

Conclusion

Bold political decisions are needed to reverse the trend and challenge of natural resource degradation and desertification. It is also urgent to identify new legal contexts that can enable effective implementation of reforms and improvements: to encourage farmers to produce more forage, build barns and keep barn animals. To address poverty, we must devise alternative projects and organization of the pasture to reduce levies on forest resources.

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SIXTH FRAMEWORK PROGRAMME

DESIRE
A global initiative to combat desertification

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