

Guidelines for Land Managers

The LAND ABANDONMENT context



Principles and
recommendations from the
CASCADE project with
contributions from land users
and land managers

Principle 1: The environment of abandoned land can change in unexpected and diverse ways: it might not continue to provide the same services, and degraded land might not recover spontaneously



- ✓ Adapt to the changes in the environment to exploit new ecosystem services
- ✓ Maintain a certain level of use of the land if you want to avoid radical changes to the landscape and a decrease of productivity

The environment of abandoned land can evolve following diverse pathways depending on the limiting conditions (e.g. soil type, water availability, topography).

The vegetation can shift to a different type of community (e.g. from grassland to shrubland or to forest)* (1).



* Cropland and pastures turned into shrubland (left) and forest (right) after abandonment

If the land was particularly degraded before the abandonment, or if the environmental conditions are limiting spontaneous recovery, the land degradation might increase even after the land use has stopped.**

This means that the services provided by the land will change, and without substantial investment it might not be possible to revert back to using the land as it was before abandonment.

Thus it might be more desirable to plan for some areas to adapt the land use*** and for others to maintain the previous use (e.g. rotational grazing to maintain pasture, cultivating with longer fallow periods).

Abandoned land can also be specifically managed for its biodiversity.

Land management options include **revegetation of abandoned land** (2), rotational grazing, or some alternative use of the land.



**Land abandonment does not always increase the bulk of vegetation. Lack of management can sometimes lead to severe land degradation

***Bee-keeping, tourism and wind energy are possible alternative uses of abandoned land

Sources:

- (1) CASCADE Deliverable 2.1 Italian study site
- (2) Multi-specific plantation of semiarid woody species ([SPA013](#), [SPA016](#))

Principle 2: Environmental changes regarding vegetation, soil and water after land abandonment can lead to new risks that require specific management



- ✓ Monitor the environment and adapt management to new risks
- ✓ Actively regenerate and revegetate abandoned areas to prevent soil erosion, flooding or further land degradation

Environmental changes on abandoned land, combined with an interruption in the management of the area, can produce new disturbances like fire, soil erosion or floods with relevant on-site as well as offsite impacts.

Observing and monitoring the environment* should continue despite land abandonment, and management should consider new risks such as fire (related to increased biomass), landslides (related to abandonment of terraces and roads) or increased flooding and erosion.

Land management options include **fuel breaks** (3) and **revegetation of abandoned land** (2), especially in case of heavy degradation to re-naturalize the area and prevent further negative impact.



*Examples of revegetation and monitoring of vegetation growth

Sources:

(3) Fuel breaks ([ITA007](#), [SPA009](#), [POR001](#)), Forest Management Plan ([A_ITA001](#))

Principle 3: Land that is not used or economically valuable at present can be used in the future

Recommendations:



- ✓ Maintain infrastructure (e.g. roads, terraces, irrigation networks)
- ✓ Maintain knowledge for future generations
- ✓ Explore new emerging market opportunities

Even if the land is not economically valuable or productive at the moment, it might still be culturally important. Changes in subsidies, market or in the environment may change the situation and increase the demand for land, previous land uses or new ones.

Infrastructure such as roads, irrigation networks and terraces should be maintained at a basic level, as they are essential to allow future access and use of the land*. Also, their destruction could lead to enhanced risks of landslides, flooding and erosion.

Knowledge related to the land and the former land uses should also be maintained, as a basis for a sustainable use of the land in the future.



* Unused infrastructure such as terraces and waterpoints should be maintained

Principle 4: Labour availability is a constraint in abandonment-prone areas



- ✓ Focus on activities requiring low labour for land management / maintenance
- ✓ Promote cooperation and participation among land users, to make the most of current use and management

In areas where there is outmigration or land abandonment, the former land management or land use may become difficult to maintain because of the lack of labour.

In order to preserve the land and to keep the possibility to return back to former land uses, management should concentrate on activities that are not labour intensive (e.g. from agriculture to silviculture; from sheep to cattle farming)*.



*Examples of fodder cultivation on former cropland (left) and silviculture (right)

Labour requirements for land management can also be reduced by increasing cooperation among the remaining land users. They can reduce costs , inputs and labour requirements by sharing tools and machinery, and cooperating for major works such as restoring land or increasing access to land.

Participation of land users in management decisions, and exchange between land users, local administrators and land managers * can lead to new land uses and adaptation measures, requiring less labour, such as golf or hiking areas.



*Cooperation and exchange of knowledge with land users





The CASCADe Project study sites across southern Europe

These guidelines were developed within CASCADe Project WP7 with contributions from land users and managers in all the study sites

Authors: Matteo Jucker Riva, Hanspeter Liniger, Gudrun Schwilch, (Centre for Development and Environment CDE, University of Bern, Switzerland); with contribution from CASCADe study site researchers and collaborators

Photos: Matteo Jucker Riva

Layout: Nichola Geeson, (MEDES Foundation, Italy)

We thank Domenico Latronico, Vito Cirigliano, Orlando De Mare, Egidio Tito, Domenico Muscolino, Salvatore De Marco, Mino Iacovino (Italy) for their contributions

The **CASCADe Project** is financed by the European Commission FP7 program, ENV.2011.2.1.4-2 - 'Behaviour of ecosystems, thresholds and tipping points', EU Grant agreement: 283068. Starting date: 1 Jan 2012, ending date 30-06-2017. Duration 66 months.

Contact information

Project website: www.cascade-project.eu

Project information system: www.cascadis-project.eu

Project coordinator: Prof. Dr. Coen Ritsema - coen.ritsema@wur.nl

Project manager: Erik van den Elsen - erik.vandenelsen@wur.nl

Communication: Dr. Nichola Geeson - nicky.geeson@googlemail.com

EU Scientific Officer: Federico Nogara - federico.nogara@ec.europa.eu

Disclaimer The full CASCADe project disclaimer and copyright notice can be found at: <http://tinyurl.com/cascade-disclaimer> or on the CASCADe website.