

## Land Consolidation Associations for the conservation and the restoration of agricultural landscapes

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### Abstract

During centuries, humans have converted European native forests into a mixture of woodlands, grasslands and crops through agriculture and forestry, with benefits to farmers (e.g. availability of food and feed), environment (e.g. increase in biodiversity), and society (e.g. reduction of fire and hydrogeological hazards). However, urbanization and industrialization have triggered the depopulation of the less favoured areas (LFA) since the beginning of 20th century. The reduction of the workforce and the increase of workers' age in the agricultural sector have resulted in a dramatic reduction of farm number, arable land and number of animal heads, so that the least productive areas are now generally abandoned or underexploited. Furthermore, the transfer from the lowlands to LFA of unsustainable business models not based on product quality and link with the territory, and inheritance laws promoting land pulverization are relevant causes of this situation that can be found almost all over Europe. Land fragmentation increases production costs and definitely results in lower profitability for farmers, which is a prerequisite to keep agriculture in the LFA and preserve the landscapes consequently. In this context, updated strategies of collective land management have to be urgently adopted to widen managed farmland, make the management easier, promote quality products, improve farmer profitability, and preserve or restore the landscapes.

Land consolidation associations (LC) are associations of private and public land owners of a given area pooling their parcels to simplify land management while recovering parcel monetary value. Promoted in France since the 70ies, LC have started to establish also in Piedmont (Italy) since 2010, when some land owners decided to join together and collectively manage their parcels for the general interest of the community and to contrast abandonment (Lombardi et al., 2017).

LC have i) to record woodland, crop, pasture or other mixed parcels, such as the agroforestry ones, into a register, ii) to draft a management plan with sustainable agropastoral and/or silvicultural practices for the conservation and the restoration of the area concerned, and iii) to identify one or more holdings to be entrusted of achieving the goals of the plan in a given time frame. In 2016, Piedmont government enacted law n.21 to promote and support financially LC. The law states the property rights of LC members, limits land parcel adverse possession, and sets the rules to manage those parcels whose owners are unknown or untraceable (*silent land owners*). About 40 LC operate today in Piedmont in agriculture and forestry sectors either, with positive spill over effects on local communities and environment. LC are an important opportunity for the entrusted farms to optimize the management of resources and improve the quality of their productions. In this presentation, lessons learned from the LC established in the region will be presented to promote their spreading in other regions, by providing evidences of beneficial impacts and possible drawbacks to be considered at the planning and implementation stages (Table 1).

**Table 1.** Beneficial impacts and possible drawbacks of land consolidation associations (LC).

Beneficial impacts	Possible drawbacks
<ul style="list-style-type: none"> <li>- conservation and possibly restoration of biodiversity</li> <li>- recovery of land productivity</li> <li>- improvement of forage quality</li> <li>- reduction of encroaching-woody species cover</li> <li>- decrease of natural hazards: reduction of fire load, dead mass, improvement of slope stability</li> <li>- easy way to produce grass-fed products</li> <li>- access to CAP subsidies for the farmer (Payment for Ecosystem Services PES-ready system)</li> <li>- RDP support to LC</li> <li>- positive effects on the job market</li> <li>- positive perception of the improvement of landscape quality by citizens</li> <li>- acknowledgement of Natura 2000 conservation measures (inside Natura 2000 areas)</li> </ul>	<ul style="list-style-type: none"> <li>- length of the process to aggregate land owners</li> <li>- small size of the managed areas (in many cases)</li> <li>- no distribution of management profits to partners</li> <li>- farmer expertise not sufficient for an appropriate agropastoral management</li> <li>- cost of the management plan</li> <li>- limited incentives to land owners for parcel pooling</li> <li>- legal aspects not completely defined yet</li> <li>- high costs of the compensations for the conversion of woodland parcels</li> <li>- high cost of the registration in Register for Legal Entities compared to very low costs for the partners to access LC</li> </ul>

#### References

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