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Titolo: From the sustainable forest management to the short wood-energy supply chain: the experience of the ForBioEnergy project in the Madonie Natural Park

Riassunto The ForBioEnergy Project (Interreg MED Programme), implemented as part of a partnership between four countries of the MED Area (Italy, Spain, Croatia and Slovenia), assessed the possibility of producing bioenergy using biomass from the sustainable forest management in the protected areas of the Mediterranean. In Italy, the pilot protected area was the Madonie Natural Regional Park (Sicily). After the establishment of the protected area (in 1989), both for socio-economic reasons and for the regime of the constraints introduced, the silvicultural activities were almost completely abandoned. On the one hand, this has made it possible to reduce the excessive exploitation of forest resources and ensured their conservation, but, on the other hand it is causing degradation and instability in most of the forest areas, especially in reforestations and aged coppices. As a result of this, it is now considered essential to promote an active forest management in order to favor the evolution in more complex, stable and resilient forest systems. The implementation of the necessary silvicultural interventions could allow us to produce biomass that can also be used for energy purposes. To determine the current amount of biomass that can be obtained, the territory of the Park (approximately 40,000 hectares), was initially divided into 5 Biomass Districts, according to administrative, environmental and socio-economic criteria, and subsequently a forest management plan was drawn up within one of the identified districts. The area subject to planning, extended approximately 1,550 hectares, has been divided into forest parcels, identified according to physiographic and physiognomic criteria. The dendrometric surveys, which are essential for defining the management guidelines, and set the necessary silvicultural interventions, were carried out for each forest parcel with active management. The real growing stock, both in terms of volume (m^3) and biomass (t), has been assessed. Taking into account that one operates within a protected area, the yield was calculated with the cultivation method, i.e. by analytically evaluating, for each particle, the specific silvicultural intervention to be performed. Since one of the founding principles of the project is the “cascade” use of the wood resource, the obtainable biomass has been divided into two types: biomass exclusively for energy use (mostly wood chips) and other assortments (mostly firewood). The total amount of biomass in the district is significant and it is sufficient to start a short wood-energy supply chain, for example to feed small cogeneration plants serving public utilities, such as the swimming pool and hospital in the municipality of Petralia Sottana (PA).

Parole Chiave: protected areas, bioenergy, biomass, forest planning

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