



DINAMO Project

Increasing endangered biodiversity in agricultural and semi-natural areas: a demonstrative management model

birdlife

forests

Habitat Directive

improving biodiversity

renaturalisation

management tools

preservation
techniques

PROJECT DESCRIPTION

The DINAMO project was designed to preserve, enhance and monitor the **biodiversity** in agricultural and semi-natural areas through the implementation of **conservation** actions performed with the joint participation of public bodies (municipalities, research institutes, local associations) and private entities (farms).

The basic idea of DINAMO comes from the necessity to preserve biodiversity and **ecosystem services** also outside the protected areas, as required by the EU Biodiversity Strategy. In the selected project area the territories outside the protected areas are mainly farmlands; DINAMO was developed in this context, involving farmers and local authorities in activities of biodiversity conservation.



OBJECTIVES

Its objective was the development of an integrated management model of interventions in favor of the biodiversity in rural areas.

The actions of the project were aimed at expanding the **natural areas** in the agro-ecosystems; implementing interventions to support **nesting** and **successful reproduction** of bird species related to the agro-ecosystems and restoring springs to **support populations of endangered amphibians**; gathering, conserving and propagating **seeds of native trees and shrub species** in order to obtain plant material useful for environmental requalification actions; planting these native trees and shrub species in public areas with the purpose of **improving connectivity** among the Natura 2000 network sites.

The experimentation area of the management model involved **10 municipalities** of the Lower Molise region in the province of Campobasso. This territory was chosen both for the elevated number of its rural areas and for the richness of areas of high biodiversity value, as evidenced by the presence of 12 sites of the Natura 2000 network.

As regards biodiversity in the Lower Molise region, it interests mainly the coastal areas around the river mouths, hillside and gully areas.

PROJECT PHASES

DINAMO was articulated in a series of conservation actions addressing some **target fauna species and habitats** of the project area, aiming at increasing the reproduction potential of nesting bird species typical of the open coastal and hillside areas (red kite, European roller, calandra lark, greater short-toed lark, tawny pipit). Specific actions were performed to increase the availability of habitats for several endemic species of amphibians (Apennine yellow-bellied toad, Italian crested newt) on public lands, while other actions, aimed at recovering marginal areas and wooded edges, indirectly favored the increase of the



European pond turtle and Herman's tortoise populations.

The habitats of community interest taken into consideration were: Habitat 92A0 - white willow (*Salix Alba*) and white poplar (*Salix Populus*) galleries; Habitat 91F0 - riparian mixed forests of *Quercus robur*, *Ulmus laevis* and *Ulmus minor*, *Fraxinus excelsior* or *Fraxinus angustifolia*; Habitat 91AA - Eastern white oak woods (*Quercus pubescens*); Habitat 91M0 - Pannonian-Balkan turkey oak-sessile oak forests.

The actions implemented by the DINAMO project were the following:

- development of a **territorial information system** and a **decision support system** for the project's implementation, supporting both conservation and dissemination activities;
- **installation of artificial nests** to allow the increase in number of the nesting couples and so the reproductive success of the bird species related to the agro-ecosystems of the Molise region (red kite, European roller, calandra lark, greater short-toed lark, tawny pipit, Apennine yellow-bellied toad, Italian crested newt, European pond turtle and Herman's tortoise). In particular **10 nests for the red kite were installed in 9 farms, and 120 nests for the European roller in 17 farms**. Both types, those for the red kite and those for the European roller were georeferenced and systematically monitored throughout the breeding season. To reduce the mortality of chicks and puppies present on the fields when working with mechanical means, **6 fledging bars** were installed on the agricultural machines to send away the wildlife before the forage mowing, in order to ensure an increase of reproductive sites and the reproductive success of the target species. Fledging bars are mechanical devices placed on the front of the agricultural machines allowing the timely escape of animals before the arrival of the cutter bar;
- **restoration of springs** to support populations of endangered amphibian, like the Apennine yellow-bellied toad and the Italian crested newt. Restoration of a total of **3 springs** in the Municipality of Guglionesi;
- **rehabilitation of 7,39 hectares** of marginal areas along ditches and streams;
- **collection of 11.000 seeds and 4.000 cuttings** of native trees and shrub species for their propagation and use in reforestation actions of public areas and for their *ex-situ* conservation at the Germplasm Bank of Molise;
- **planting of 4.900 trees and 10.200 shrubs** to expand woods in public areas in the Municipalities of Campomarino and Petacciato;
- **Agriforum and Action network**: the periodic meetings of Agriforum led to a progressive enhancement of the awareness and involvement of farmers towards the objectives of the project's model. The Action network represents an operative network formed by the farmers who made themselves available to implement the practical actions of the project in their farms and in the public areas conceded by the municipalities participating to the initiative.

PROJECT RESULTS

The set of the concrete conservation actions led to an increase of the available habitats for some endangered species living in coastal areas and in the farmlands of the Lower Molise region, like the Herman's tortoise and the European pond turtle.

Among the achieved results the following are to be highlighted:

- installation of **10 artificial nests for the red kite** within the farms;
- installation of **120 nests for the European roller** within the farms. Half of the total number of the installed nests were utilized by other species;
- **increase of the reproductive success** of calandra lark, tawny pipit and greater short-toed lark by installing **fledging bars** on harvesters and tractors;
- **restoration of 3 springs** to facilitate entry and exit of adult amphibious from and into the basins. The success of the action was demonstrated by the discovery of a **crest newt larva** in the spring "Fonte di Nallo". Larvas of Apennines yellow-bellied toad, not present in this area for several years, were taken from 3 springs of the Matese area and relocated in the "Fonticillo" spring. The surveys confirmed the permanent presence of the species and the metamorphosis of many tadpoles;
- **renaturation** of unproductive areas on a surface equal to 7,4 hectares;
- **propagation and use of seeds** and cuttings for reforestation actions and their *ex-situ* conservation in the Germplasm Bank of Molise;
- **issue of guidelines** for the [Replication of the DINAMO](#) model in those territories where there is the intention to create a leverage effect for the economic and social development of rural areas combined with the conservation and enhancement of natural biodiversity. The document highlights the project's objectives, its actions, strengths and weaknesses, and describes the instruments useful to the realization of the DINAMO model.



Acronym

DINAMO

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LIFE

Beneficiary Coordinator

Università degli Studi del Molise,
Dipartimento di Scienze e Tecnologie
per l'Ambiente e il Territorio (University
of Molise, Department of Science and
Technology for the Environment and
Territory)

Contacts

Davide Marino

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Beneficiary headquarters

Via G. Mazzini
86090 Isernia IS
Italy

Region

Molise