

# Allowing agriculture and biodiversity to co-exist through innovative solutions

Agriculture has left an indelible imprint on the landscape, transforming formerly wooded areas into open fields and pastures where modern monocultures have had a detrimental effect on biodiversity, fertility and environment. Are we sure this is the only feasible model to be followed? NeoruraleHub has demonstrated in Italy that biodiversity can exist alongside agricultural production and a return to a natural landscape is possible. By partnering the rural areas with urban development, it is possible to create synergies to transform agricultural suburbs into environmental services providers for the cities, where energy is recovered, waste recycled and the resulting enjoyable environment can become the place for promoting innovation and start-ups. NeoruraleHub has created the first real-scale project just 18 km away from the center of Milan.

The term 'neorurale' has been coined to refer to agricultural land that is repopulated with wild areas to encourage biodiversity and the resulting positive effects on soil fertility and fight against desertification. The concept has been applied to an 1,500 ha area of rural land known as La Cassinazza. "The project was initiated in 1996," says CEO Piero Manzoni. "When the land used for rice cultivation in a series of paddy fields

and nothing of wider ecological value was set to return part of the landscape to its previous natu-

ral state while still retaining rice cultivation." Over time, trees and hedges were planted and water channels, wet lands, ecosystem

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Many of the problems with modern agriculture arise from the intensive use of fertilizers. With our methods, we can increase harvests by as much as 36% per hectare while preserving soil fertility.

rebuilt to encourage native plants and fauna to repopulate the area. The result is a new ecosystem

where ducks, deer and many other animals co-exist peacefully with modern agriculture. "The success of the project can be explained

by the philosophy of a circular economy used by nature," says Mr. Manzoni. "Many of the problems with modern agriculture arise from the intensive use of chemical fertilizers and insecticides to replace the nutrients taken out of the soil by crops so that the land can be replanted. Learning by Nature, a new technology, called Nutrient Recovery Center, has been developed. Such technology demonstrated already the capacity



The La Cassinazza project is home to 20,000 ducks, seven species of birds of prey, 20,000 pigeons, all the European airons and 650 free-roaming deer and much more



Aerial view of NRC – the Nutrients Recovery Center



**Trees and hedges planted in the margins between the rice fields encourage native plants and fauna to repopulate these spaces**

to increase harvests by as much as 36% per hectare, while reduce costs and environment impact". "By treating organic matters in an innovative way and rebuilding ecosystems, we enrich the soil allowing crops to grow strong and well balanced and saving biodiversity," says Mr. Manzoni. "Together with technology, around the agricultural fields we created conditions that encourage the proliferation of protecting ecosystems." This method is called Environment Field Margin. What NeoruraleHub achieved has been possible with the smart appli-

cation of EU's Common Agricultural Policy. The imminent change in the CAP should encourage such approach and foresee incentives not

### Consumers are looking at agricultural production methods and their impact on the environment and are choosing to pay for food that has been produced ecologically.

just for production but strictly linked to the contribution, while producing food, to create positive externalities such as better CO2 sequestration in soil, less soil degradation and landscapes regeneration.

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"Despite the challenges, we remain very optimistic about the future," insists Mr. Manzoni. "We have a steady stream of visiting academics coming to see what has been achieved here."

In NeoruraleHub many other challenges have been addressed such as energy saving in a very innovative way utilizing the heat content

transformation and distribution. This is done at the Innovation Center Giulio Natta, within the NeoruraleHub area where renovated agricultural buildings have been converted to host value-added companies, start-ups and laboratories to cultivate and test innovation. NeoruraleHub also initiated a similar project in Kenya where it is supporting the local population and helping them to cultivate crops preserving natural habitats, and keeping the wild life safe. NeoruraleHub is even involved in companies in North America. "It is no secret that we are at an environmental tipping point in so many areas," says Mr. Manzoni. "We know that we are doing our part to improve things – there is no better feeling."



**La Cassinazza is a green oasis of biodiversity amid intensive monoculture farming all around The picture shows the result in biodiversity and fertility in 20 years**

**LA CASSINAZZA**  
**EVOLUTION OF BIODIVERSITY AND SOIL FERTILITY IN 20 YEARS**

n° of species	1996	2016	VARIATION
n° Birds	80	217	+170%
n° Nesting Birds	25	65	+160%
n° Mammals	16	29	+81%
n° Butterflies	21	45	+114%
n° Dragonflies	13	32	+146%
n° Grasshoppers	10	19	+90%
n° Mushrooms	5	14	+180%
n° Plants and Flowers		255	%
<b>Soil fertility</b>			
C.E.C.	7	17,7	+135%

**Insects are in decline across Europe with grave consequences for the environment. The La Cassinazza project shows a way to grow crops without decimating fauna**