



REACT4MED

Background information of the Pilot area

Inspired by permaculture, the food forest in Bethlehem of Galilee mimics a natural, self-sustaining ecosystem in the hilly Upper Galilee, featuring diverse edible and medicinal plants, ponds, and animal habitats. Over seven years, its owners transformed the landscape through careful planning and planting. This initiative revitalizes degraded soils and enhances biodiversity with minimal external inputs. Today, the food forest serves as both an environmental business and an educational hub, addressing local challenges and fostering sustainable community livelihoods.

The role of the University of Haifa in the Pilot Area

In Israel, the research team of Haifa University in the Spectroscopy and Remote Sensing Laboratory investigates the impact of food forest in Bethlehem of Galilee on ecosystem restoration. They assess restoration outcomes, focusing on biodiversity, soil health, and socio-economic benefits. Using satellite data and field monitoring, they observe vegetation changes and land dynamics to support data-driven decision making. Their work helps enhance agroforestry practices and promote sustainable land management in the Mediterranean.

Contact information:

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List of links to further information:

<https://www.bethlehemfoodforest.com/>

<https://www.foodsystemsjournal.org/index.php/fsj/article/view/1043/1013>

REACT4MED

Land degradation such as soil erosion and desertification, along with climate change, are serious threats to agriculture in the Mediterranean. In order to restore degraded soils, we need solutions that pay off and which are good for the people and the environment.

The REACT4MED project aims to improve agricultural productivity, promote innovation, restore soils, and thus improve livelihoods in Mediterranean communities.

In eight pilot areas situated in Turkey, Morocco, Israel, Egypt, Cyprus, Greece, Spain, and Italy, large-scale land restoration actions are initiated and monitored. These actions include combating soil erosion through conservation agriculture, terracing, cover crops, reforestation, mulching and improved irrigation practices.

Stay in touch through our website:

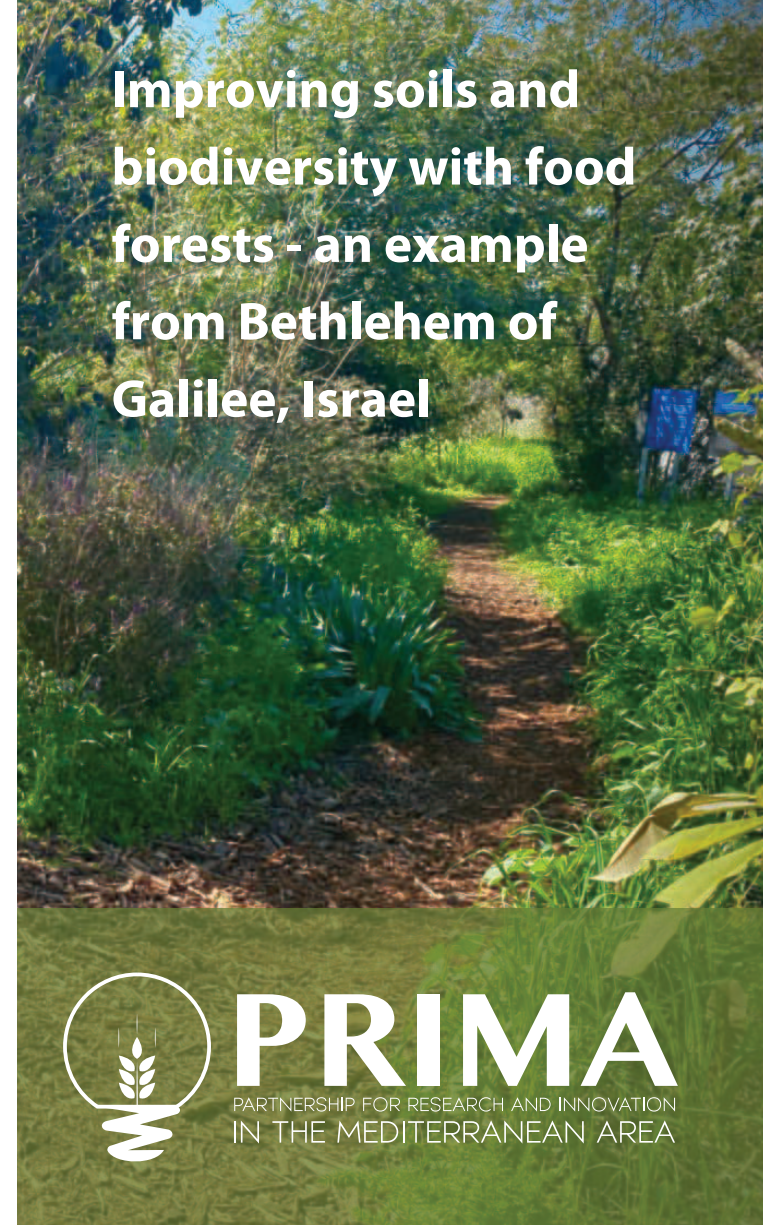
www.react4med.eu

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Project duration:

May 1 2022 to October 31 2025



Improving soils and biodiversity with food forests - an example from Bethlehem of Galilee, Israel



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IN THE MEDITERRANEAN AREA



Implementation story from the pilot area

When Yuli and Nitzan Betzer moved back to Nitzan's hometown Bethlehem of Galilee in the Northern part of Israel, they wanted to create a project with a tangible environmental and social impact. They envisioned a place where nature and community flourished hand in hand. The couple identified the potential in a degraded piece of land that once belonged to Nitzan's old family farm. They explored and experimented with various agricultural models ranging from low maintenance forest gardening to high maintenance regenerative agriculture. Ultimately, they decided to create a food forest based on permaculture principles, a balanced approach combining elements of agriculture with the natural ecosystem.

Implementation requirements

Creating a food forest begins with a site assessment to evaluate existing resources and identify limitations, particularly soil quality, water availability and local climate conditions. Contextual factors, such as community needs, cultural practices, and available funding, should also inform the design and implementation process.

Once a site is chosen, preparation involves enhancing soil fertility by working in compost and cover cropping. Implementing effective water management systems, such as swales and rainwater harvesting, lays the groundwork for a thriving micro-ecosystem.

Choosing the right mix of edible, medicinal and ornamental species is crucial for ecological compatibility. The forest design should mimic natural ecosystems and incorporate regenerative agriculture principles, encouraging community engagement for support and collaboration.

In the initial three years, maintaining soil health and ensuring plant survival is key, with regular watering, fertilizing and the replacement of struggling plants. Educational programs on permaculture principles can empower community members in maintenance techniques.

Once established, the food forest demands minimal intervention, relying on self-sustaining processes. Ongoing maintenance includes routine observation, periodic pruning, monitoring plant health, managing invasive species and - of course - harvesting!



Benefits

Food forests offer immediate and long-term benefits for both land users and the environment. They support sustainable food and medicinal plant production, economic opportunities, and serve as spaces for education, therapy, and community engagement. Their self-sustaining design reduces reliance on external inputs like water and fertilizers.

In the long term, food forests restore degraded soils, improve water retention, boost biodiversity, and support climate regulation through carbon sequestration. Features like ponds and diverse plant species enhance ecosystem functions, making food forests productive, resilient, and aligned with sustainable agriculture and community well-being.