



Practice Abstract 9: A Decision Support Tool for Planning Smart Renewable Energy Investments on Farms



COUNTRY AND CLIMATIC ZONE

Pan-European

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3 BENEFITS OF THE PRACTICE

- Helps farmers and agro-advisors make data-informed investment decisions in renewable energy.
- Incorporates sustainability, technical, and economic criteria into one unified decision tool.
- Supports optimised sizing and deployment of renewable energy source infrastructure in agricultural systems.

PRODUCTION SYSTEM

N/A

KEYWORDS



HarvRESt, RES, MCDA, DSS

SUMMARY FOR PRACTITIONERS ON THE MAIN FINDING(S)/INNOVATIVE SOLUTION(S) – IN ENGLISH

HarvRESt is developing a Decision Support System (DSS) to help farmers and agricultural stakeholders evaluate different renewable energy investment scenarios. It blends farm-specific constraints with energy forecasts to guide optimal renewable energy source choices and system sizing.

LONGER DESCRIPTION – IN ENGLISH

The HarvRESt Decision Support System (DSS) is designed to support strategic decision-making in the deployment of renewable energy solutions within the agricultural sector. Building on the forecasting and optimisation tools developed in other parts of the project, this DSS integrates a wide range of agro-economic and technical data to guide investments.

Key features include:

- **Multi-Criteria Decision Analysis (MCDA):** The DSS uses this methodology to evaluate various scenarios of the adoption of renewable energy sources, considering trade-offs across environmental, economic, and technical factors.
- **Hybrid modelling approach:** It combines energy forecasting results, local constraints (e.g. farm size, energy needs, regulatory limits), and optimisation strategies to generate tailored recommendations.
- **User-centred design:** The tool is being developed with practical application in mind, allowing agricultural users to input relevant parameters and receive clear, actionable insights.

The ultimate aim is to reduce the uncertainty and complexity that farmers face when making long-term energy investment decisions. It empowers users with a transparent tool that reflects both technical feasibility and economic viability, while aligning with broader EU goals for climate neutrality and rural sustainability.

ADDITIONAL DISSEMINATION AND COMMUNICATION MATERIAL(S)

Title/Description: HarvRESt DSS (forthcoming decision support platform)

URL: TBD