SUSMEDHOUSE

Sustainability and Competitiveness of Mediterranean Greenhouseand Intensive Horticulture.

Decision Support System (DSS)

Smart monitoring and control interface via desktop, web-based and Mobile Application for AI, IPPM, sunlight and lighting optimisation, and sensor and automation network of SusMedHouse.

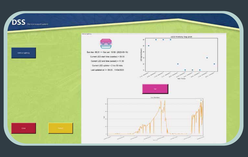
DSS integrated with automation system and user interface. It guides the farmer by showing expected profits and losses for different actions, resulting in greater sustainability, and smarter management, considering data regarding environmental impact. It also helps to decide harvestable areas and harvest time and have a user-friendly interface.

Greenhouse cultivation and management

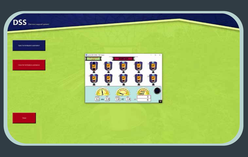
Data provided from sensor network

Risks and detection informing

Determination of harvest yield



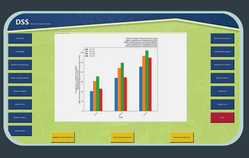
Prediction of electrical energy expenditure



Information to farmers on effective manual labor

Information on energy and product costs

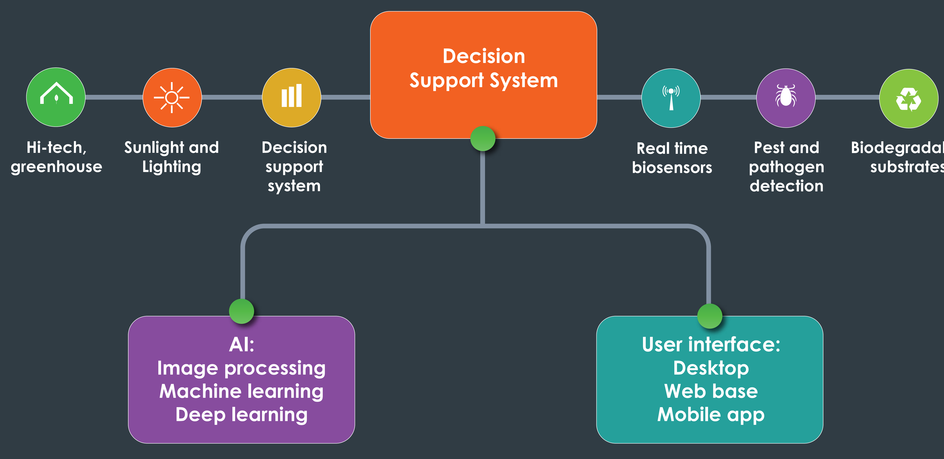
Estimate of the harvest



Prediction of harvest profits and losses

DSS was developed in three versions: desktop, web base and mobile app. Based on the proposal and the needs of farmers in greenhouses, artificial intelligence algorithms have been developed, including harvest estimation, identification of diseases in greenhouses, and identification and counting of the number of pests.

DSS stucture



DSS with the help of artificial intelligence has a significant effect on the efficiency of the greenhouse, some of those cases are mentioned below:

- Reduction in the use of pesticides and agricultural chemicals
- Preventing the occurrence and spread of diseases and pests
- Temperature and humidity monitoring in the greenhouse
- Calculation of electricity consumption by artificial light and checking the economic efficiency of producing agricultural crops using artificial light
- Remote artificial light on/off time control and Agro-robot control
- Weather forecast, early warning and Harvest Estimation
- Advice to the user about the type and amount of pesticide
- Automatic calculation and processing of measured values by agricultural engineers and calculation of growth scores
- Diagnosis of diseases and pests and early warning
- Automatic comparison of hydroponic, aquaponic and conventional methods in Gothic and Venlo greenhouses using plant growth indicators
- Remote control and monitoring of irrigation, fertilization, climatization and solar energy automations

PRIMA

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