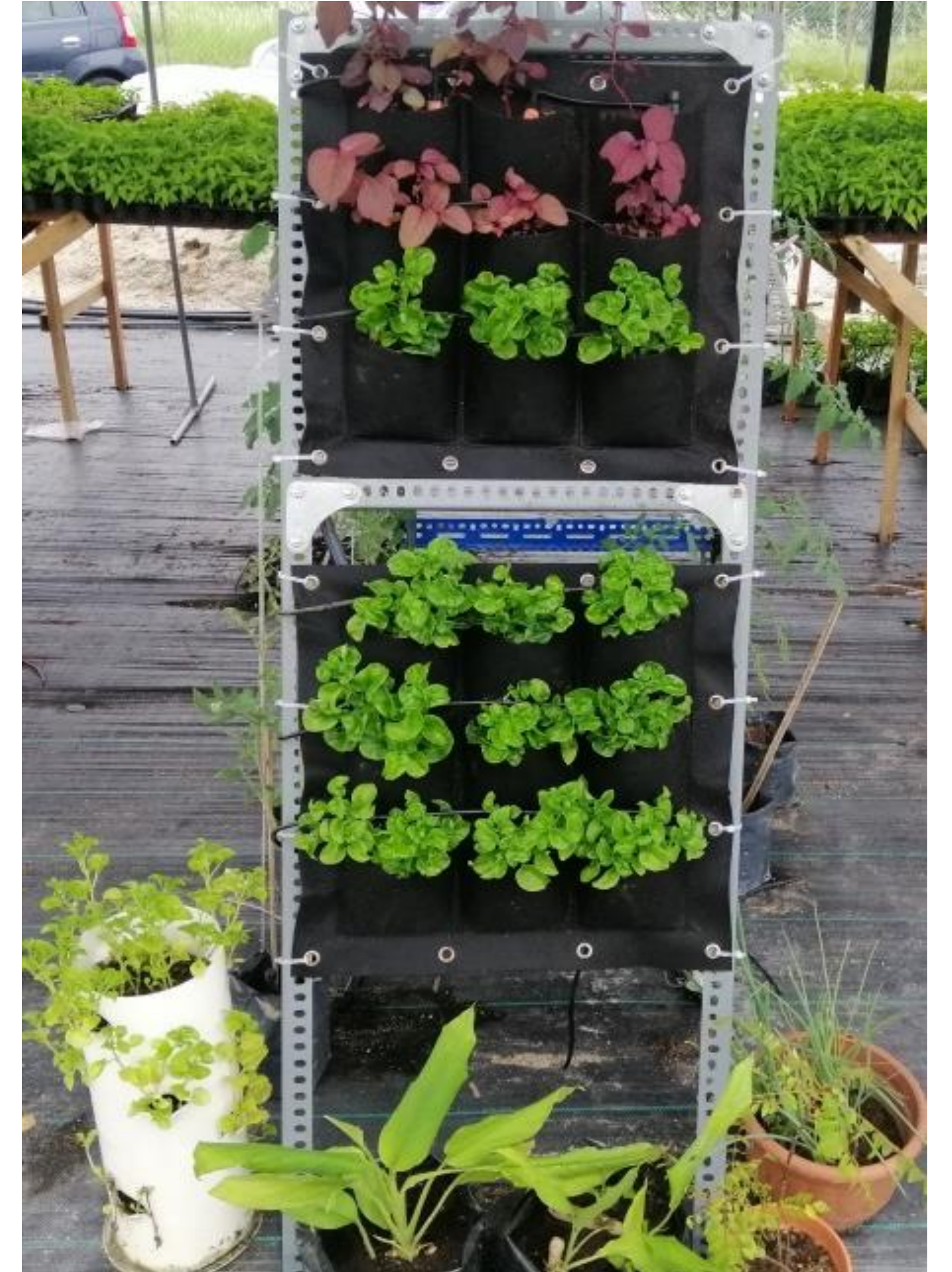




Agrivoltaic Kitchen Garden

IPR NO. AR 2020003417



TECHNOLOGY

Agrivoltaic Kitchen Garden (AvKg) is an invention that provides the means of incorporating green energy using solar PV system and crops cultivation in the concept of the kitchen garden.

PROBLEM STATEMENT & CURRENT ISSUES

- The concept of green economy design and implementation projects a good governance system, especially in agricultural related businesses. In Malaysia, the agricultural sector plays a vital role in shaping the economy, thus it requires a depth technology adaptation with the integration of the renewable energy and IoT infrastructure.
- Since the worldwide spread of CoV19 and the lockdown execution in most countries, the domestic sector has created a new trend of home-based gardening like hydroponic systems, traditional planting pots, and etc. to optimize the time spent at home at the same time provide food supply.
- Thus, AvKg provides a good opportunity for developing an integrated, standalone system for cultivating green vegetables.

INVENTIVENESS AND NOVELTY

This technology provides integration of standalone; green energy using solar PV system (to power up the fertigation pump) with crops cultivation in the concept of the kitchen garden.

USEFULNESS AND APPLICATION

The AvKg's structure is designed to fit any planting pots and vertically farming. The design is suitable for individual residential house with 50Wp generating capacity, with 40AH battery system complete and this standalone system is equipped with fertigation tanks. Besides, the height of the planting panel can be adjusted accordingly. For industrially purposes, AvKg system can be used in Domestic and Urban Agriculture.

IMPACT OF THE PRODUCT

- To optimize the cultivation of vegetables and herbs through sustainable and green energy systems for better ecological performance especially at urban area which suffer of land scarcity issue.
- To increase the economic of rural communities due to the lack of electricity generation at the same time adaptation of agrivoltaic technology.

MARKET POTENTIAL

- Community or everyone that been affected during CoV19 due to the lack of fresh food supply.

TRL : 5 - Validation in real environment



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