A Smart-Farming model for Lao Agriculture

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Outline

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Background

The Lao PDR is primarily an agricultural economy. Recently the Lao PDR conducted a major agricultural census which is almost 80 percent of the total population is engaged in farming. However, the majority of farmers are engaged solely in subsistence agriculture.

Background *(cont…)*

Traditional agriculture approach consumed a lot of efforts to sufficient controlling farm, there is hard to guaranty quantity and quality of the products in every growing season, the resulting is lower price of agriculture products in the market.

The poisoning came from chemical fertilizer and pesticides are used, which is considered environmental and grower's life getting problems.

Problems

- Harden life style.
- Waste times and workforce consumptions.
- Difficult to guaranty quantity and quality of the crops.
- Got higher input volumes than lower income.
- Grower is affected by chemical environments

Project's Goal

- To demonstrate a smart-farming model for Lao agriculturist with the ability to **Smart Controlling**, **Smart Monitoring** and **Smart Planning** on their farms.
- To reduce the input volumes and the environmental impacts from agriculture production.
- To improve life quality of Lao agriculturist, and to encourage sustainable agriculture in Laos.

Broader Impacts

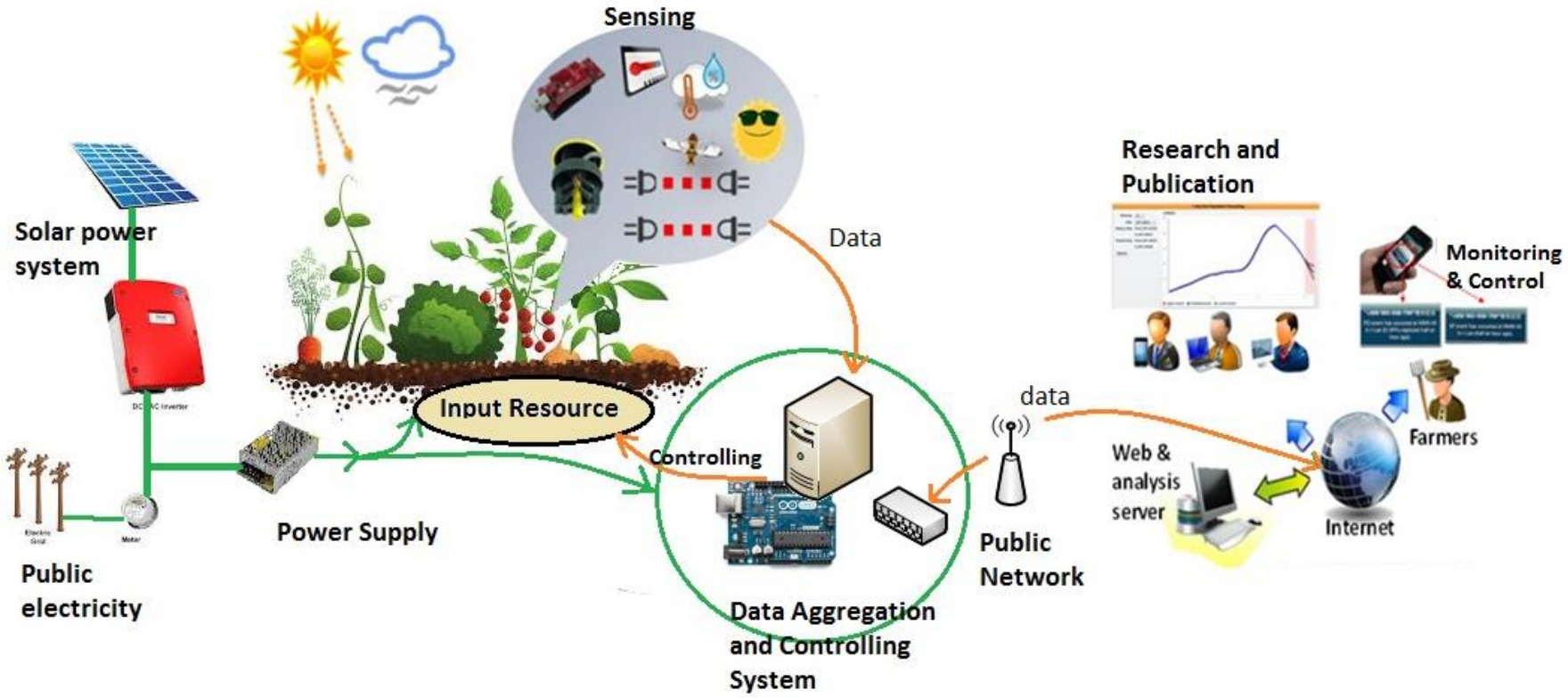
- The project will not only provide a model of smart-farming for Lao agriculturist, but also offers significant information from this research of smart controlling and monitoring system.

- The outcome of this project can be best practice reference for Lao agriculturist and/or any growers to apply in their own farm, improving their agricultural products in term of quality and quantity.

- The significant data of typical Lao agriculture can be used by other collaborative searches to improve agricultural technologies.

Targets, Methods and Implementation

Smart-Farming Model



Targets, Methods and Implementation (cont…)

- The Organic farm will be used to demonstrate a model of smart-farming, with abilities to remotely monitor and control their farm over the Internet.
- The growers will able to monitor and manually turn on/off the resources by using their smart phone, tablet or laptop.
- Multi-sensors, such as: humidity, temperature, moisture, lighting and power consuming will place in the farm to collect raw data from real environment, then send them to the local server over local network

Targets, Methods and Implementation (cont…)

- Smart controllers is used to control environmental to make sure that is appropriate for the plants.
- Raw data in the local server are emphasized and analyzed to provide efficiency static information which will be an important resource data for future research activities.
- Sola power system is used into the farm for better environment impact and to reduce the oval cost of operation.

Participants

National University of Laos, Lao PDR

- Prof. Dr. Boualinh SOYSOUVANH
- Dr. Somphone KANTHAVONG
- Senglathsamy CHANTHAMENAVONG
- Dr. Phonepadith PHOUMMAVONG
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- Assoc. Prof. Chaodit ASWAKUL

Thank you for your attention!