ERICSSON | LG

01 ● Hello, We are

• 02

• 03

• 04

Girls in IoT 2019

Team Guardians of Agriculture

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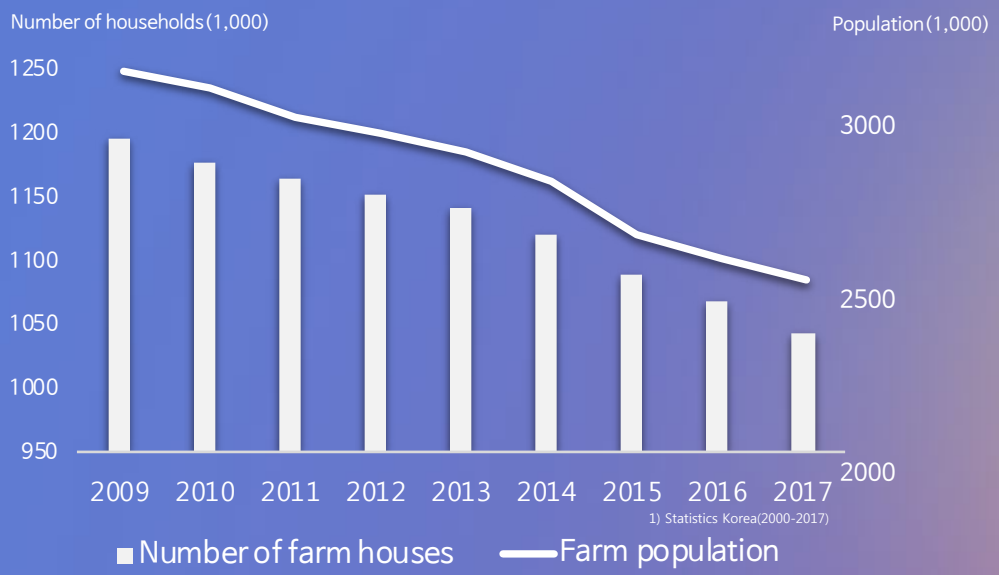
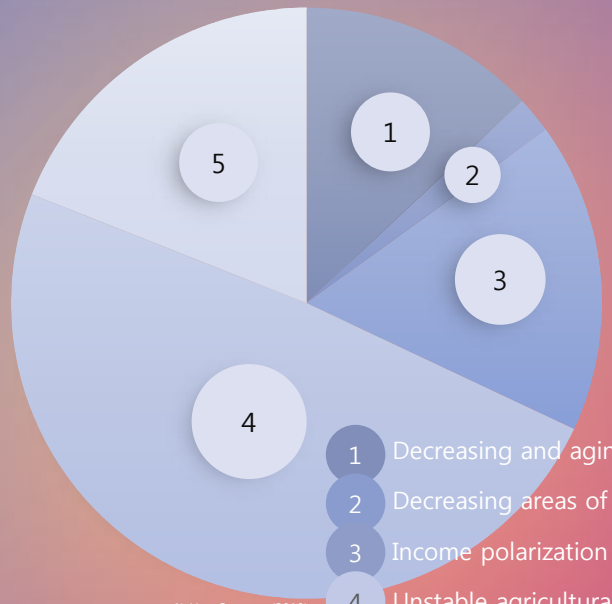
Decreasing and Aging the Population of Agriculture



Biggest Problems in Agricultural Society



1. Decreasing and aging the population of agriculture
2. Decreasing areas of farmland
3. Income polarization
4. Unstable agricultural prices and supply & demand
5. Increasing the import of foreign agricultural product

- The age of people working in agriculture is getting older
- Young people tend to avoid working in agriculture
- The population in agriculture is getting decreased

IoT Scarecrow

- Supposing alternatives to vitalize agriculture
- Increasing the convenience of current agricultural people
- Encouraging various age groups to engage in agriculture

1) Statistics Korea 「Agricultural research」,「Agriculture census」 2000-2017

2) Heo Suyeong, "What is the main agriculture problem for farmers?", 「Minplus」, Feb/17/2019

IoT scarecrow

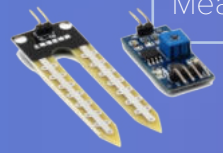
Sensor or input part

Solar panel
To get solar energy to run the scarecrow system

Recorder
Recording arable field for monitoring

Motion sensor
Sensing the motion especially birds or intruders

Soil sensor
Measuring a condition of soil



Activation part

Agricultural sprinkler
Sensing the moisture content of the soil and spraying water to the field

Pesticide sprayer
Being attached to the both hands and Spraying pesticide

Alarm buzzer
Making sound to drive birds out

Soil nutrient sprayer
Sensing the nutritional state of the soil and spray nutritional supplements

a. We consider the **environment and energy** utilization using solar panel because of its trait that is always exposed to the sun.

b. We use the soil sensor to measure condition of soil and **spray water or soil nutrient automatically.**

c. it also can spray **pesticide regularly.**

d. It **monitors the field** through the recorder, even if it cannot take a large area, however, we can install many scarecrows on cultivation areas, so it does not matter.

e. It also has a buzzer to drive harmful intruders **especially birds away.**

01

Increasing **convenience** by the automation:
Supplying water, supplements, and pesticide

➔ Decreasing agricultural labor intensity

➔ Making an **influx** of **young people**

➔ Helping **the mitigation** of **aging**

02

Monitoring arable field

➔ Being able to **save time**

– Managing the field when needed only

03

Measuring a soil condition &
Injecting a plant supplement

➔ Being possible to supply **optimal nutrients** to each product

➔ Improving & Keeping the quality of the product

04

Combining **IoT** with current scarecrows

➔ **Enhancing abilities** of playing roles

05

Producing **sustainable energy** for IoT sensors:
Solar energy

➔ Maximizing the **efficiency** of energy use

⇒ A lithium battery needed for drones

– High price & Opaque safety