

# Tano Intelligent Agriculture GACP CMS



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## 01. Tano Secure Inc. introduction

# Tano

Intelligent Agriculture GACP CMS

<https://www.tanosecure.com.tw>



## From seedlings to the table, defenders of food safety

- **To resolve food safety issues**

- The Tano team has been composed of a group of senior IT professionals and scholars. In view of the roots of food safety rely on cultivation of agricultural products, the team was built up with talents in IoT, AI, new optical materials, biotechnology, standardization of modern agricultural planting, block chain and other comprehensive technologies to solve problems in traditional agricultural, abuse of pesticides and fertilizers, harmful heavy metals and phosphide residues of agricultural products and environmental pollution. Consumers will get truly non-toxic green and secure agricultural products.

- **Pragmatic and professional team**

- In order to truly understand the causes of harmful heavy metals and phosphide residues in agricultural products, as well as the problems and needs encountered by farmers in planting management, the Tano team set up non-toxic organic demonstration farms and become farmers. In 2017, the Tano security team and the National Chiao Tung University jointly cooperated with the Ministry of Science and Technology to implement a non-toxic smart technology agricultural system to implement the non-toxic smart technology agricultural system and product development.



AND





## 02. Bottleneck of customary agriculture and consumer food safety requirements

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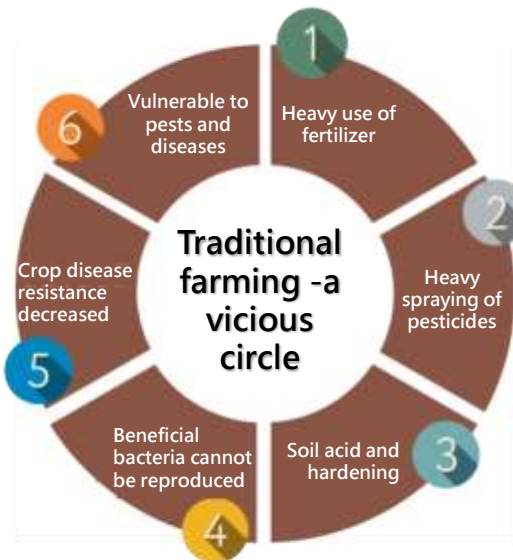
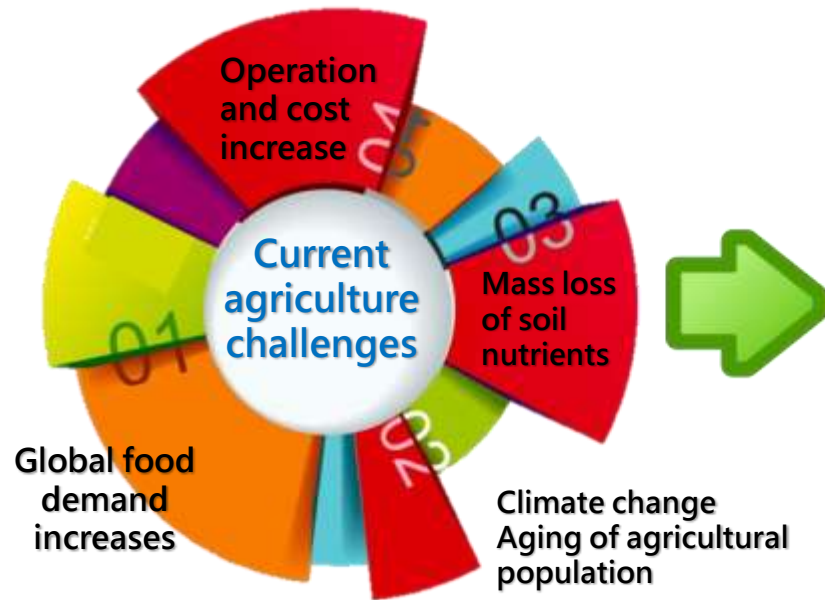


# Customary agriculture can not meet modern agriculture demands for safety

Farmers problem  
and food safety  
doubts

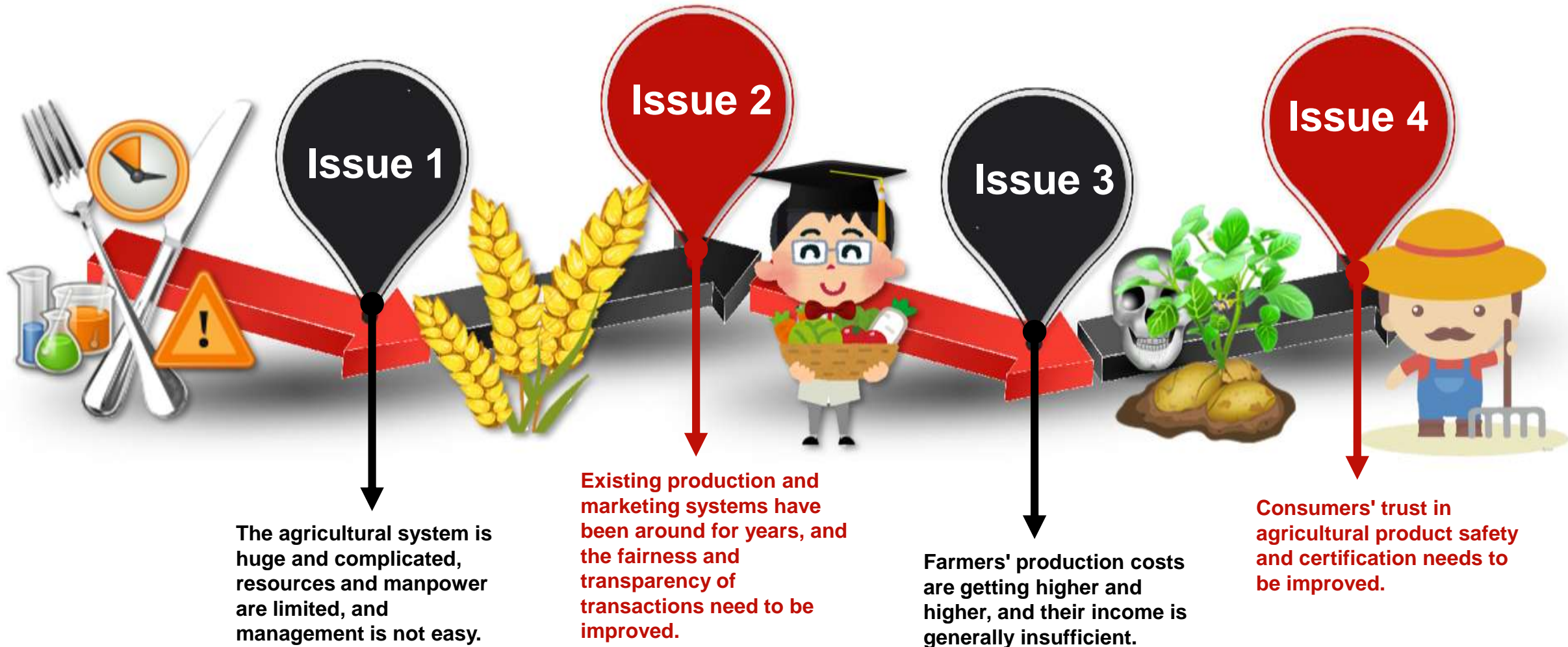


# The current development difficulties and challenges of modern agriculture



**Food Safety and the Environment Facing Double Loss**

# Four Issues in the Development of Modern Agriculture





# Smart agriculture will solve the dilemma of modern agricultural development

Utilize modern cold chain \ new materials \ electronic tags \ Internet of things \ blockchain ...  
Set up an irreversible traceability system from seedlings to the dining table



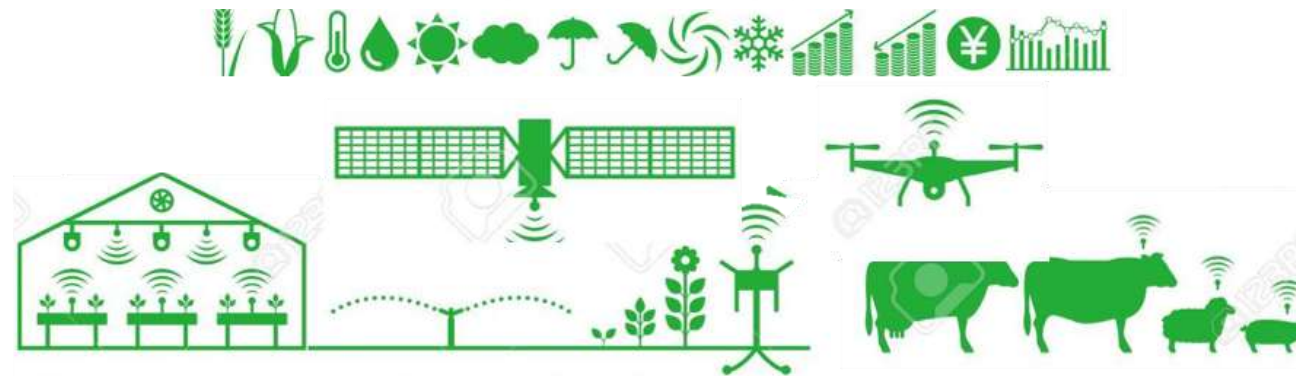
Spraying pesticides using automated agricultural machinery and unmanned machines to reduce labor costs to reduce costs



Using big data analysis and artificial intelligence to increasing productivity and optimizing quality



Using remote sensing, networking, remote control and other technologies to established Real-time intelligent networked agricultural precision management monitoring system



# Smart agriculture with big data from the blockchain will completely solve the main problems

Agriculture + Blockchain = Consumer (ABC formula)

## Consumer

Through the information of the chain, consumers can better screen their suppliers, understand the origin of agricultural products, and transportation process to check food safety.

## Farmer

The blockchain may reduce transaction costs, reduce middleman exploitation, increase revenue, and open new markets. For example, subsidies are often not delivered in full because of system corruption. Through the blockchain, the subsidy process is expected to become more transparent and prevent farmers from being squeezed.



# Blockchain will effectively solve the problem of food safety traceability and increase the value of agricultural products



## Seed supplier will be protected

The blockchain info will avoid false seedlings \ inferior seedlings and may forecast the final efficacy of herbal medicine and in charge of the overall market sales °



## Prevent excessive use of fertilizers and pesticides

The blockchain will prevent fake fertilizers and pesticides , effectively control excessive use of fertilizers and control food safety and environmental pollution.



## Help farmers generate income and wealth

Farmers can get information about seed quality, soil moisture, climate and environment, as well as real-time data such as payment, demand and sales price on the platform. This will allow small farmers to obtain the actual price of the products and help reduce the problem of low income for farmers.

# Development Dilemma for Digital Agriculture / Smart Agriculture



The cost of building a smart farm is too high

## Main Issue 1

Fragmented development of IT application technology

## Main Issue 2

IoT standards move towards consolidation

Information security concerns

The overall quality of farmers is not high

## Main Issue 3

# Three steps necessary to develop digital / smart agriculture

**1 STEP Standardization**

Tano Intelligent Agriculture  
GACP CMS



**2 STEP Automation**



**3 STEP Intellectualization**

GACP生產履歷溯源



Tano GACP CMS  
Intelligent Agriculture

31.52 土壤溫度 (°C)	24.01 土壤濕度 (%)
6.1 土壤pH	0.014 土壤EC (mS/cm)
87.3 光照 (lx)	0 室內CO2 (index)
40 濕度 (%)	7.5 風速 (m/s)



GACP優良葉食作物生產履歷

商標名稱: 百興農天有機農場  
商標地址: 龍潭區  
商標號碼: 00630021600153-0001  
00630021600153-2000  
產品名稱: 紅薯米粉  
產出總數: 200kg  
每包包裝: 100g/罐裝/2000罐

龍潭區 30°C 晴天 降雨機率0%

泥構段/0579/0000  
租賃, 台灣省有機農業生產協會, 0.8468公頃

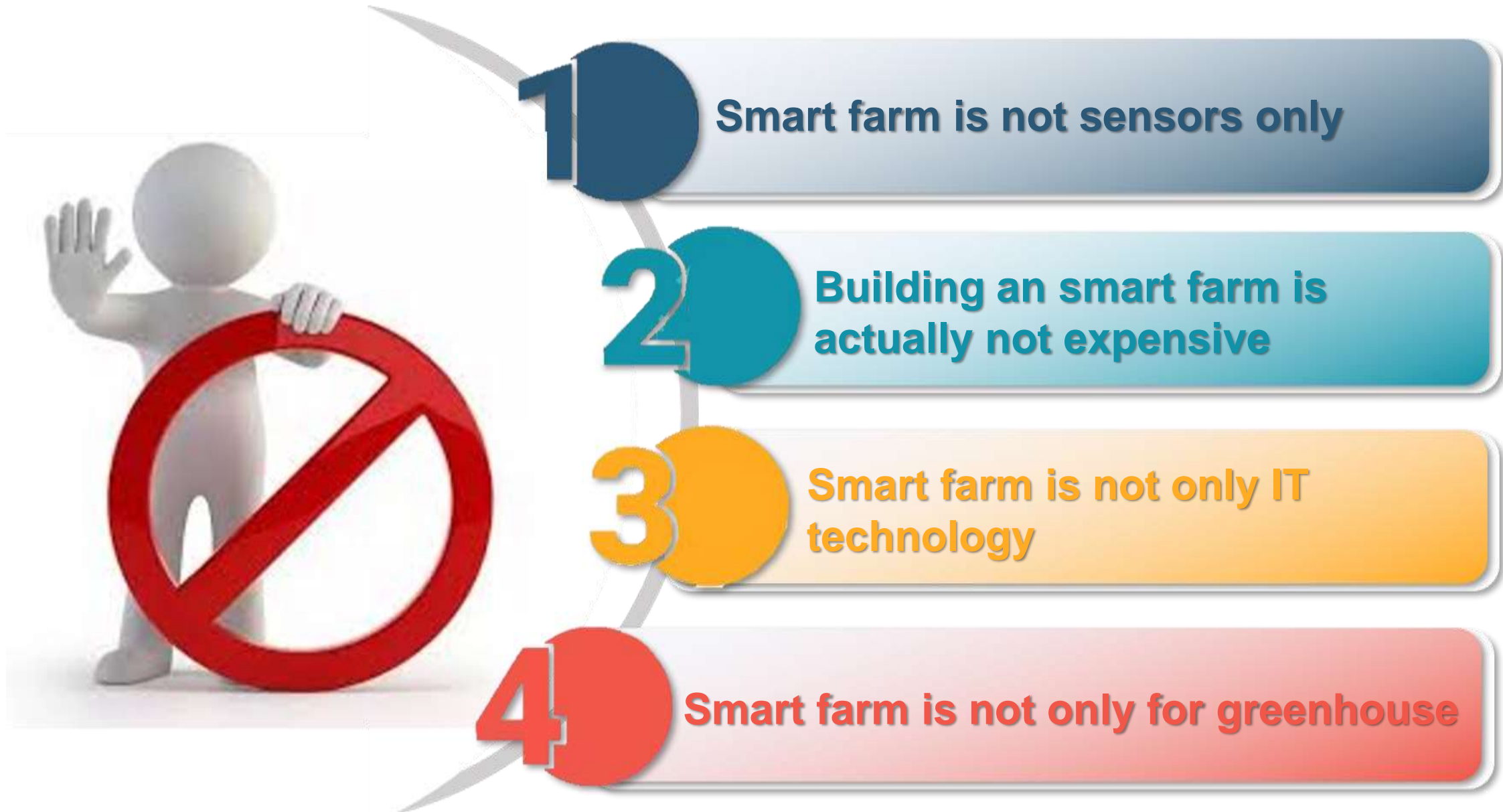
種苗培育 栽種管理

作物: 紅薯黃-自培品種  
面積: 0.2842公頃  
種植: 2018/04/03

採後加工 檢驗報告 農資資訊



# Misunderstandings of the public during the development process



**1** Smart farm is not sensors only

**2** Building an smart farm is actually not expensive

**3** Smart farm is not only IT technology

**4** Smart farm is not only for greenhouse



## 03.Tano Intelligent Agriculture GACP CMS description

### Tano

Intelligent Agriculture GACP CMS

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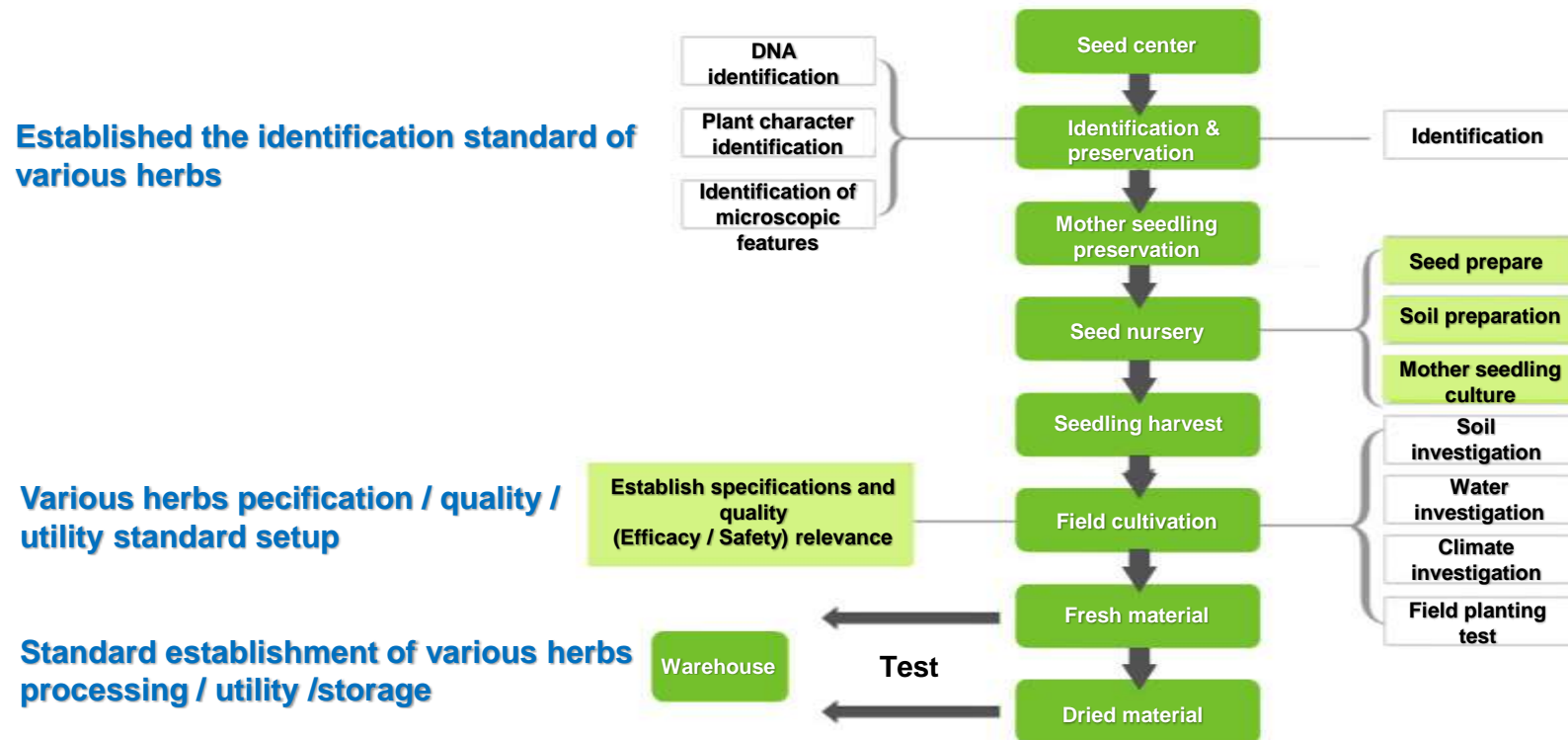


# GACP Medicinal and food crops planting, harvesting and processing quality control

## Good Agricultural and Collection Practices

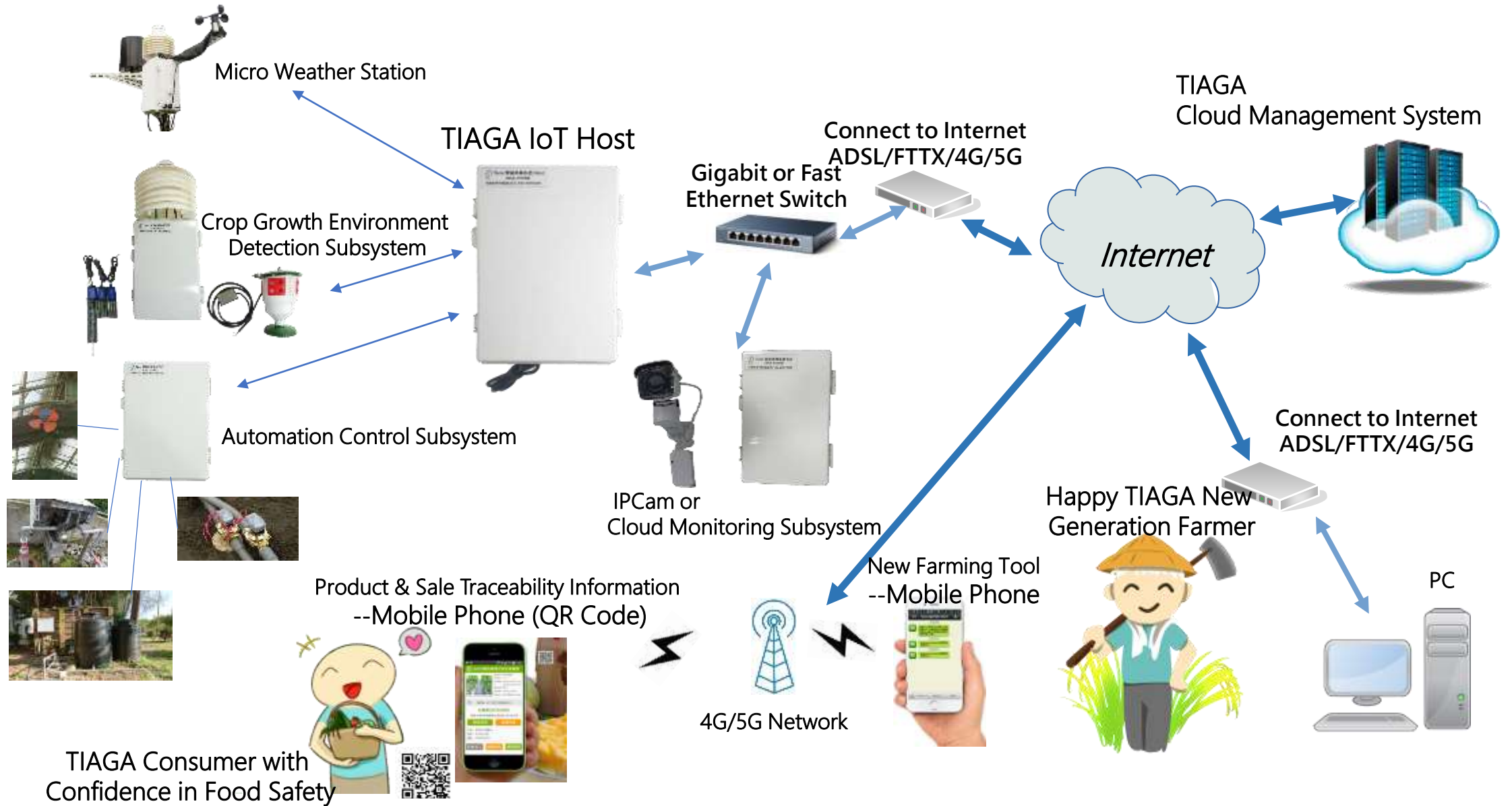
Based on WHO GACP standards, the herbal medicine planting and collection standards is easy to integrate with the international market

GACP is not only a full record of agricultural processing to production, but also a standard management.





# Tano Intelligent Agriculture GACP CMS Overview



# Tano Intelligent Agriculture GACP CMS


Mobile phones are new farm tools




Farm crop growth control and full process recording




3-7 days disease prediction & reduce pesticide use and agricultural losses by 70%




Precision Fertilization Reduce fertilizer use by more than 50%



Cloud robot Dr. Lin providing 24 hr. management



3-7 days disease prediction & reduce pesticide use and agricultural losses by 70%

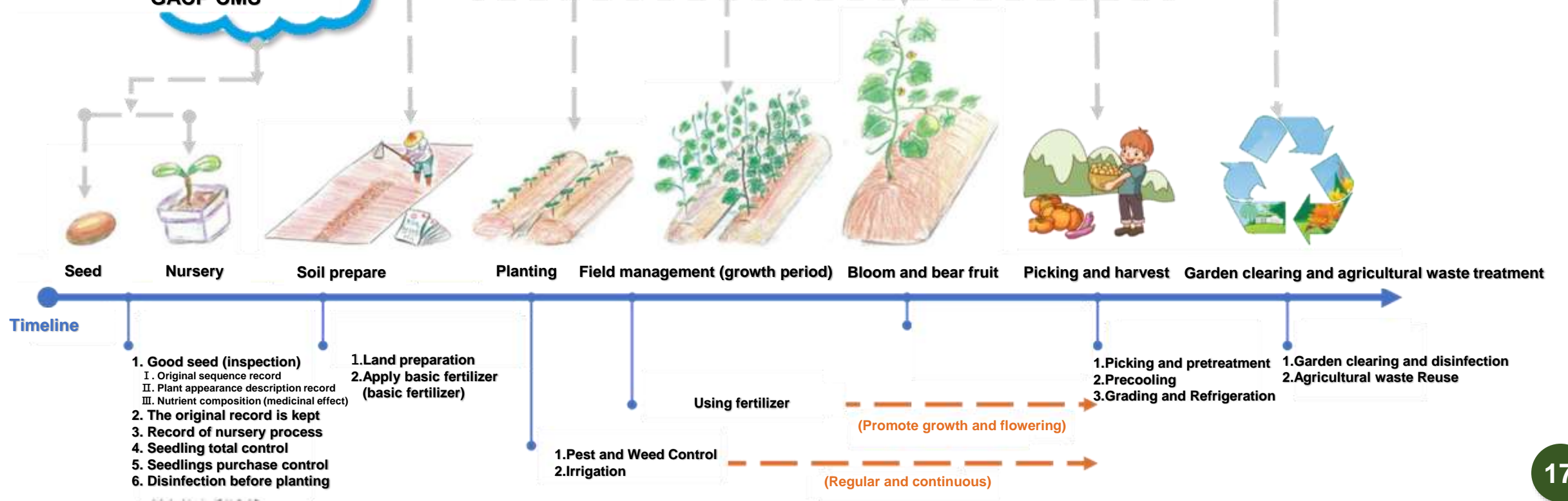


Precision water supply Reduce irrigation water by more than 70%



Line cloud robot Dr.Lin Full record and instant farm management

GACP Excellent Crop (Medicinal) Planting and Collection Standards / Digital Traceability Recording System from Seedling to Collection



# Tano Intelligent Agriculture GACP CMS Line cloud robot Dr.Lin

The system uses the line cloud robot Dr. Lin and AI to analyze farm crop big data and to provide farm managers professional advice and reminders.



**1** STEP Conversation

**2** STEP Real time

**3** STEP Zero Professional

Timely information and interpretation on farm management



# Tano Intelligent Agriculture GACP CMS- Farm management

Monitor crop growth environment conditions at any time for precise management



Real time monitor farm crops to reduce manpower



3-7 days predict the incidence of pests and diseases



Reduced manpower by farm automation facilities



AI smart control can save at least 70% water



AI intelligent control can save 50% of farm fertilizer



Line system is easy to get started



# TIAGA IoT Devices



Crop Growth Environment Detection Subsystem



Tano Micro Weather Station



Tano IoT Host



Automation Control Subsystem



IPCam or Cloud Monitoring Subsystem



## 04.Tano's achievements in developing smart agriculture

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# Hsinchu Baoshan Smart Demonstration Farm



# Hsinchu Wufeng Smart Demonstration Farm





# Hsinchu Baoshan Dufu Smart Demonstration Farm



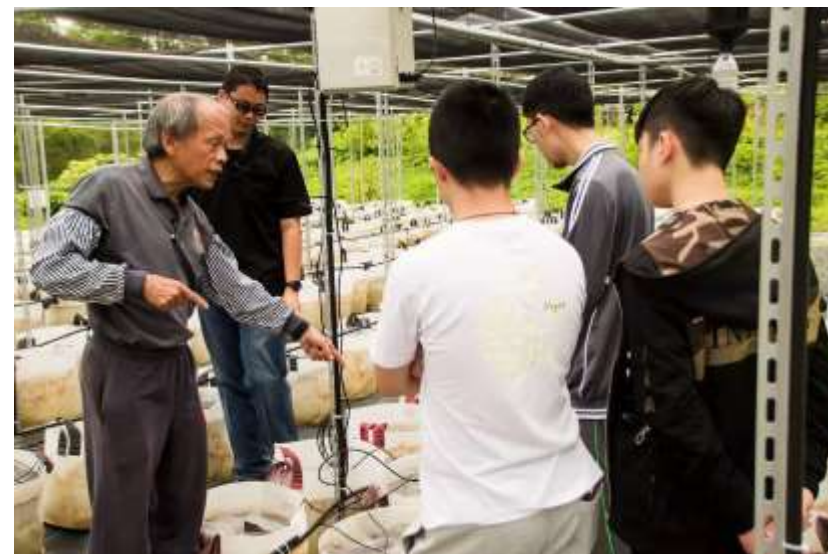
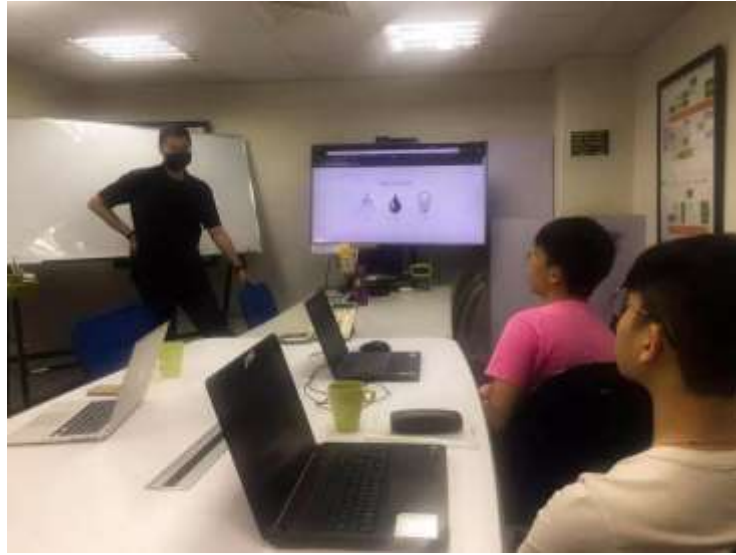
# Yilan Shinnan Smart Demonstration Farm



# Taoyuan Longtan Smart Farm



# Tano has incubated a new farmer with smart technology and talents



T H A N K S

SESSION