

2017 Taiwan-Thailand Higher Education Forum

Teaming up with Industries for Research and Innovation

Smart Agriculture, Biomedical, Biotechnology & Health Care

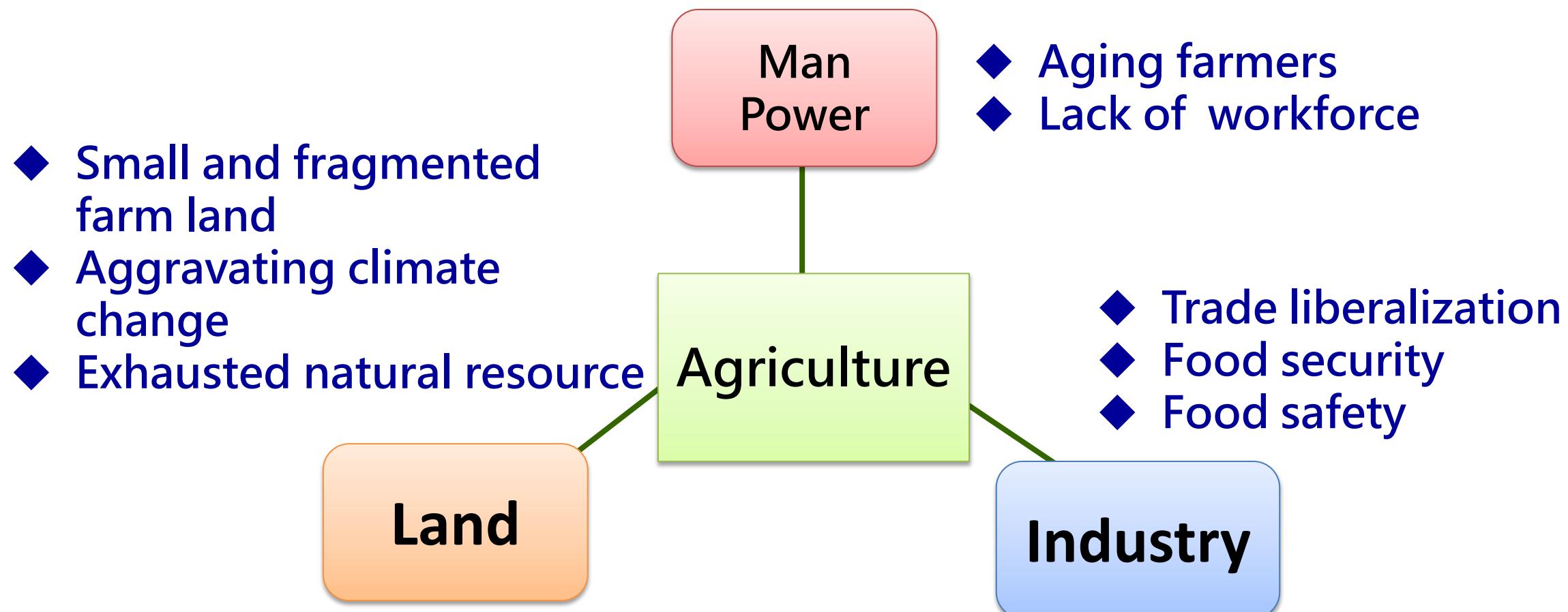
2017.6.14

Outline

- I. For Smart Agriculture
- II. For Biomedical, Biotechnology & Health Care
- III. Successful Measures of promoting Academia-Industry Cooperation

I. For Smart Agriculture

Challenges that Taiwan Agriculture Confronts with



We encourage the team-up of academia and industry for R&D and innovation to increase agricultural productivity and competitiveness, focusing on intelligent agriculture (Agriculture 4.0) and circular economy with attributes of technology-intensive and high value-added.

PABP- the cutting-edge agri-industrial cluster in the world



Residential Area



Management Center

With complete infrastructures,
PABP is built to be the new agri-
industrial cluster for the
purpose of industry
development and recreation



Amenity for living



Bank of Taiwan



Dragon Building



Tiger Village



Asia-Pacific Aquaculture Center



Animal Vaccine Industry Area
(AVIA)

Integrating various incentives and supports

Complete Infrastructure

1. Comprehensive public facilities
2. Upright and foursquare land for construction
3. Advanced equipment and sophisticated factory

Investment Incentives

1. Low interest rate loan
2. Bonded park for tax free
3. International marketing

Administrative Effectiveness

1. One-Stop Service
2. Rapid Customs clearance
3. Match-up of technology and Academia-Industry Cooperation



Aggregating outstanding enterprises to form industrial clusters

Natural Products for Health & Beauty
(Plant Seedling, Functional Food, Cosmetics)
43 companies

Aqua Breeding
(Ornamental Fish, Aqua Breeding, Aqua-related Accessory)
18 companies

Husbandry Materials & Animal Health
(Animal Vaccine, Feed Additives, Nutritional Supplement)
13 companies

Agro-Bio Materials
(Bio-Fertilizer, Bio-Pesticide, Soil Conditioner)
14 companies

Biotechnical Service
(Diag. for animal & plants, Molecular Analysis)
9 companies

Energy-saving & Ecological Agro-Production System
(Renewable Energy, Plant Factory, Aquaponics)
8 companies

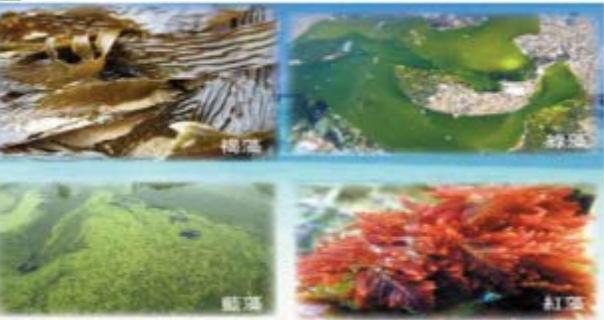


- ◆ By May 2017, 105 enterprises got approval and formed 6 clusters listed as left.
- ◆ Stimulating the investment in agro-bio industry to USD 340 M.
- ◆ Exporting to 30+ countries in the world, creating around 1,500 job opportunities and reaching over USD200M output value in 2016.

1. Natural Products for Health & Beauty



TCI Co., Ltd.
Functional Drink



High-Q Marine Biotech
Algae Functional Food



Ladies Biotech
Giant Grouper Cosmetics



Agri-Dragon Co., Ltd.
Functional Drink & Biomimicry

2. Aqua-Breeding Industry



Sky Fish Aqua Co., Ltd.
Crystal Shrimp & Rili Shrimp



IKI Taiwan
KOI Carp



Creative Way Aqua
Seahorse



Taikong Corp.
Transgenic fluorescent aquarium fish

3. Husbandry Materials & Animal Health



Reber Genetics Co., Ltd
PRRS Vaccine



HanShen Biomedical Co., Ltd.
Herbal Medicine for Pets



Richfield Biotech
Customized Feed Additives



Merit Biotech Inc.
Grouper Iridovirus vaccine

4. Agro-Bio Materials



枯草桿菌1號

植物葉面病害
的終結者



黑殼菌

作物害蟲的
強力剋星

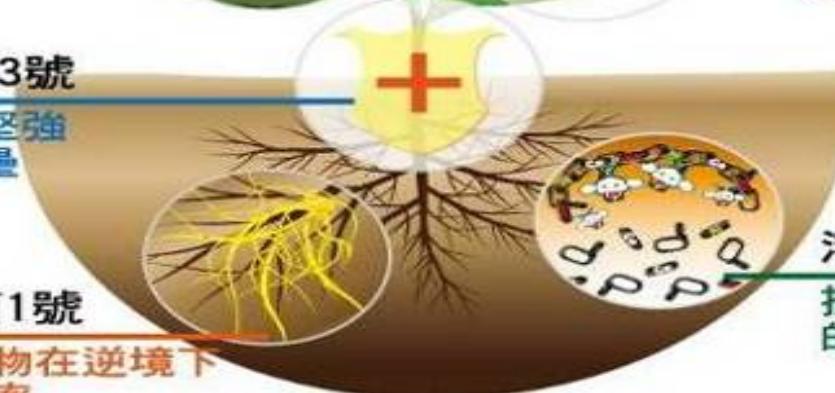


Advanced Green Biotech Inc.
Bio-Fertilizers & Bio-Pesticides



枯草桿菌3號

作物安全堅強
的防疫堡壘



菌根菌1號

提高作物在逆境下
的存活率

溶磷菌1號

提高作物產量
的最佳選擇



**DaYi Biotech
Bio-fertilizers**



**Taiwan Agricultural Biotech Co., Ltd.
Bio-Fertilizers**

5. Biotechnical Services



JBM Co., Ltd.
Supercritical CO₂ Extraction



Favorgen Biotech
Diagnostic Kits



C. J. Biotech
Diagnostic kits



Timing Pharmaceutical Co., Ltd.
Residual Examination on Pesticide and Heavy Metal

6. Energy-saving & Ecological Agro-Production System

BioRay Biotech Co., Ltd.
(indoors cultivation of Cordyceps)



Hokto Corporation

Automatic Control System
Consistent production process
(Plant factory)



Hanns Top Biotechnology Co., Ltd.
Green Water-Saving Circulating System for Agriculture
(Aquaponics)



In the future

Intelligent production & precision agriculture



In the future Big data for disease detection and control database



Records of vaccine injection



Security control for aquatic animals



Diagnosis of fish diseases and disposal records



Integrating disease monitoring, managing, and big data analyzing, we set up the quarantine and warning database of aquatic animals



Detecting records of quarantine



Functional feed and probiotics



Collection of huge cultivation data

In the future

Products Traceability and Food Safety



Big data including manufacturing and traceability will be organized through cloud computing, and be revealed to consumers



Soft-shelled turtle: controlling and monitoring the resource of raw materials



Chinese herbals: GMP pharmacy factory, passed the residual examination of pesticide and heavy metal



Flavor: GMP food factory, implementing quality control



Vegetables: Traceable Agricultural Products (TAP)



Intelligent Cold Chain Management. The information of manufacturing and traceability would be revealed to consumers simultaneously

In the future

Agricultural Circular Economy

Green Energy Husbandry



Turning fish scales to corneas



Green
Energy
Cultivation

Agricultural
Circular
Economy

Recycle
wastes and
salvage

Biogas for power generation

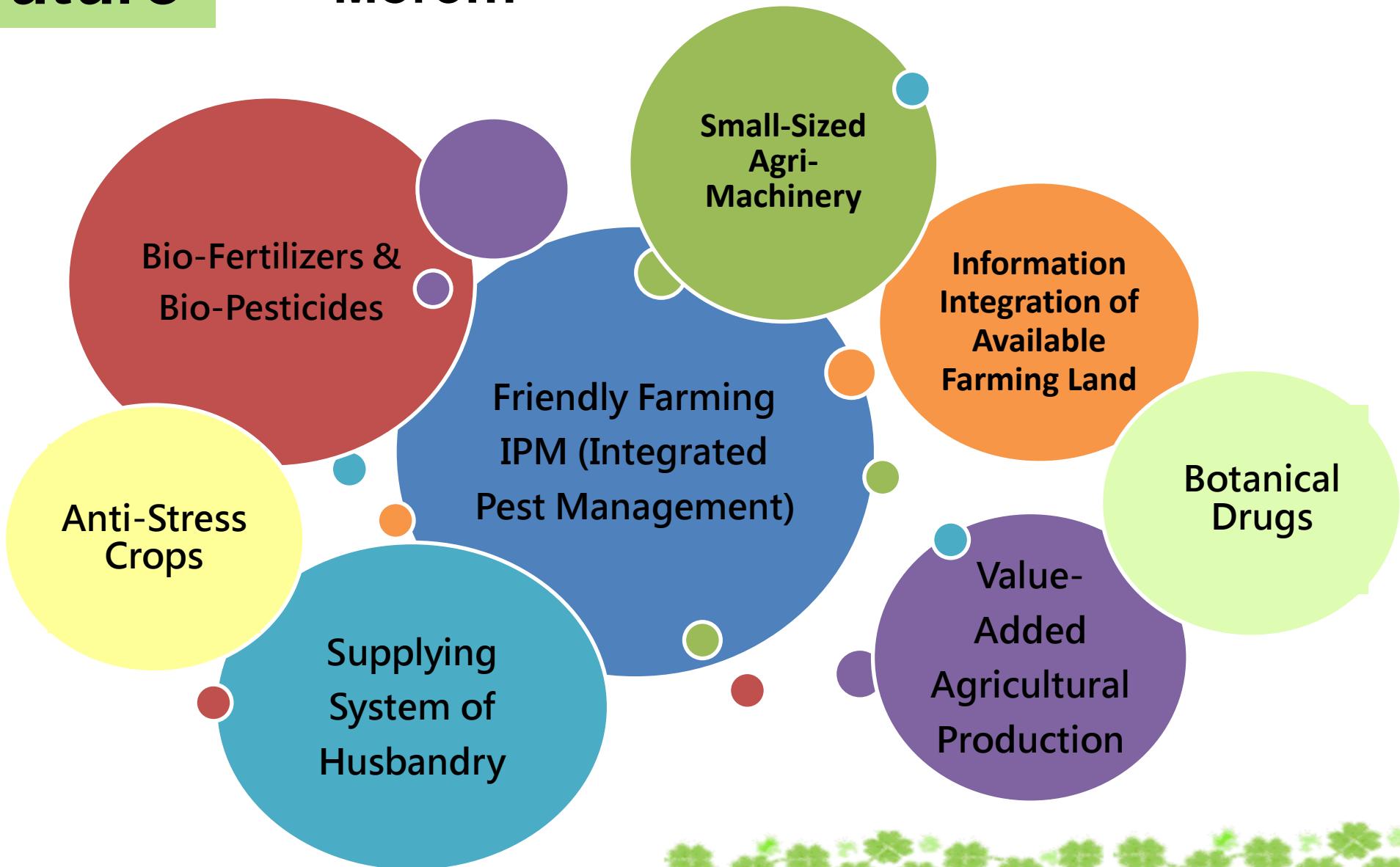
Ecological
Cultivation

Aquaponics



In the future

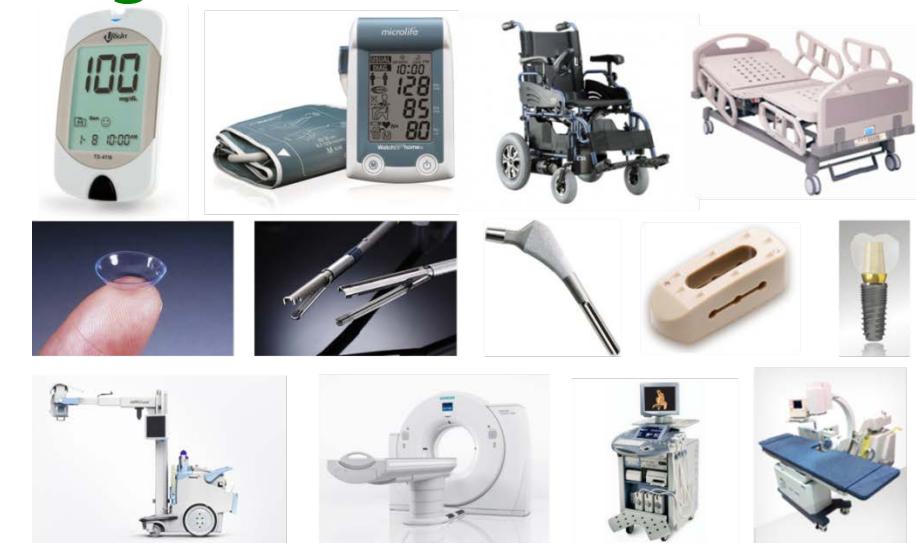
More...



II. For Biomedical, Biotechnology & Health Care

Combining with big data and IoT (Internet of Things), it can apply to the fields of :

alternative to antibiotics, biotechnology, pharmaceutical technology, medical equipment, disease prevention, nutrition food, health maintenance, diagnosis in early stage, treatment and rehabilitation, homecare, and senior nursing etc.



III. Successful Measures of promoting Academia-Industry Cooperation

1. Establishing R&D intelligence platform for information sharing
2. Customized R&D collaboration service for Park Tenants



Periodic consultation service for Park Tenants



Organizing Technology Publicizing and Transferring Symposia to facilitate the collaboration between industry and academia

3. Launching Agricultural Technology Development Program to open the gate of Academia-Industry Cooperation



Brimoon biotech Co., Ltd. &
National Pingtung University
of Science and Technology
Soft-shelled turtle cuisine
products



Taiwan Fu Shrimp Co., Ltd. &
National Chiayi University
Cultivation and propagation
skills of Caridina



HanSheng Biomedical Co., Ltd.
& Tajen University
High-Valued Herbal Medicine
(Dendrobium)

4. Reinforcing mechanism of post-incubation to foster the growth of enterprises derived from university

5. Building up the Industrial Talent Training Center

Integrating academia to cultivate industrial workforce



Creative Way Aqua Corp.
from National Kaohsiung
Marine University



Organizing linkage between
enterprises and universities
for practical training



YangDa Biotech Co., Ltd.
from National Pingtung
University of Science and
Technology

Thank you



行政院農業委員會農業生物科技園區
Pingtung Agricultural Biotechnology Park(PABP)
台灣グリーン・バイオパーク

Pingtung Agricultural Biotechnology Park
<http://www.pabp.gov.tw>

