Topic 1: Quality Agriculture

Presentation:
A Plan of Action for the Quality Agriculture Development Program

Council of Agriculture

Executive Yuan

2 November 2009

Overview

1. Introduction
2. Healthful Agriculture
3. Excellent Agriculture
4. LOHAS Agriculture
5. Conclusions
6. Discussion

1. Introduction

Focused on Healthful Agriculture, Excellent Agriculture and LOHAS Agriculture, the COA Agricultural Action Plan is designed to enhance domestic quality of life by promoting such goals as healthy & residue-free agriculture; superior productivity; and the infusion of LOHAS concepts into the recreational agriculture sector in order to move Taiwan agriculture toward a better, brighter future. Typhoon Morakot, which hit in early August and devastated Taiwan farmer land, livelihoods and lives, caused policymakers to revise policies in order to respond to immediate rural reconstruction & financial needs while continuing to develop new technologies, more productive techniques and new markets. Revisions will also made to growth goals in order to foster recovery in the agricultural sector as soon as possible so it is able to breathe new life into or transform traditional farming categories, and so infuse competitiveness and establish the conditions for sustainable agricultural growth.

2. Healthful Agriculture

A. 'Healthful Agriculture' Sector – Current Status

☑**Good Agricultural Practice (GAP):** As of 08/2009, the COA has helped 1,275 production units earn GAP certification. GAP-certified production now covers 17,000 hectares of farmland & annual production volumes in excess of 350,000 tons.

☑**Organic Farming:** As of 08/2009, Taiwan had 2,509 hectares of certified organic farmland and 1,029 farming families producing about NT$1.5 billion (US$46 million) worth of organic crops, including rice, vegetables, fruit, tea and other produce.

☑**Good Products with CAS label:** Taiwan currently allows CAS certification in 14 major food categories, including meat, edible rice, egg, fisheries and forestry products. As of 08/2009, 6,053 products manufactured and sold by 296 companies are CAS certified. This represents an annual production volume of 700,000 tons valued at over NT$42 billion (US$1.28 billion).

☑**TAP traceability system:** As of 08/2009, 1,596 agricultural products had formally passed TAP certification procedures. These products included 126 different commercially-sold agricultural, livestock and fisheries products worth an estimated NT$3.8 billion (US$116 million) in annual revenues.

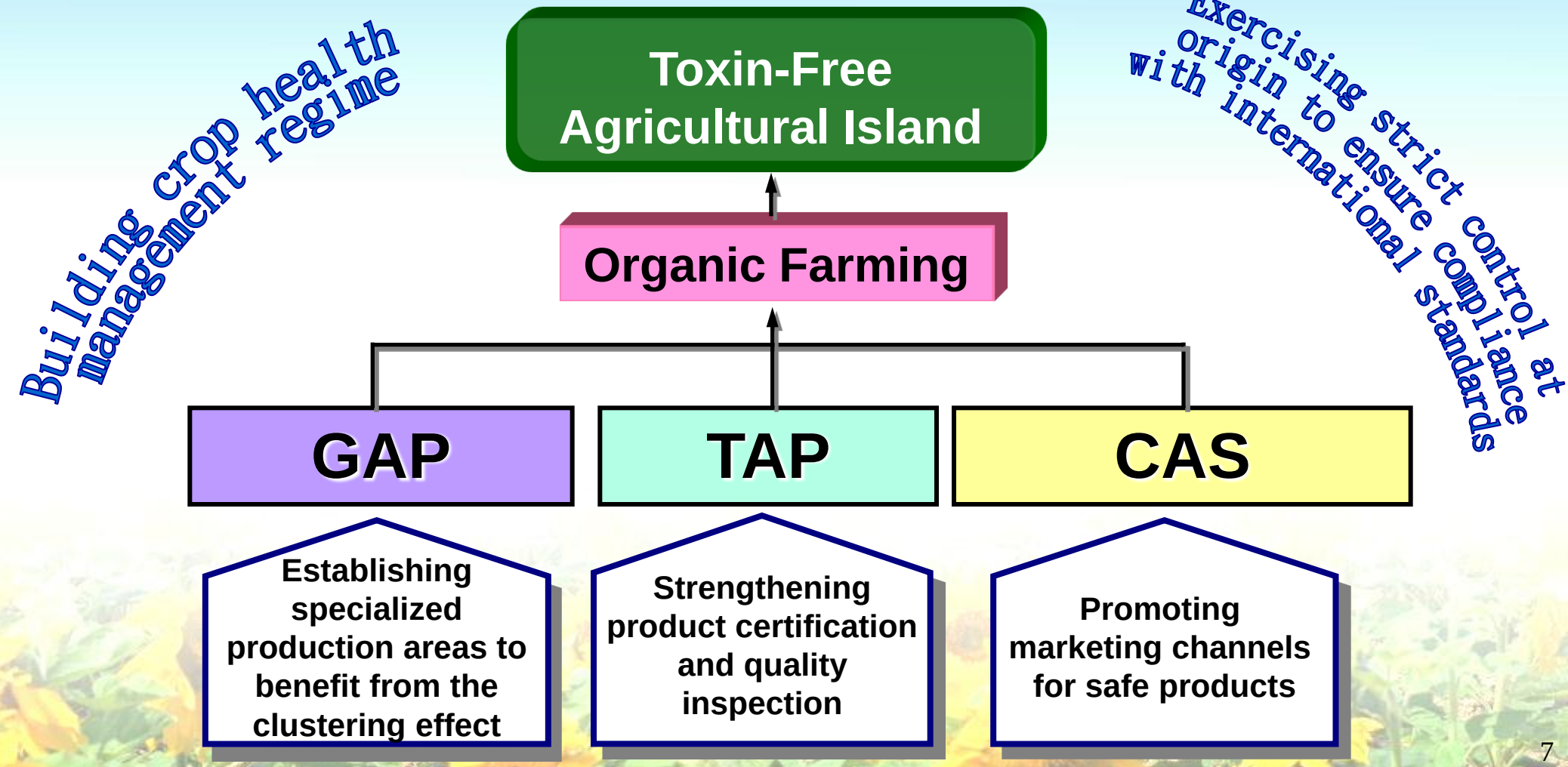
B. 'Healthful Agriculture' - Development Goals

Of the 820,000 hectares farmed in Taiwan in 2008, 25,000 (3%) were certified under organic, TAP or GAP programs.

⇨ 2012 goal sets target of 50,000 hectares (i.e., 6% of total).

C. 'Healthful Agriculture' – Promotion Measures & Strategies (1/2)

Create Failsafe Agricultural Product Safety Management System



C. 'Healthful Agriculture' – Promotion Measures & Strategies (2/2)

New technology development	New Management Model	New Market Development
• Develop non-chemical production requisites; • Develop environmentally controlled and highly efficient production systems	• Establish specific production districts for organic products; • Establish farm product distribution centers	• Establish diversified sales & marketing channels; • Develop markets catering to special groups of people
⇨Develop non-chemical technologies, materials & fertilizers; ⇨ Develop environmentally controlled green-energy and highly efficient production systems combined with remote sensing, energy-efficient and automation technology.	⇨Set up specialized production areas on farms owned by Taiwan Sugar Company or Veteran Affairs Council or large areas of fallow land; ⇨Distribution centers will integrate processing, distribution and related operations to improve efficiency and branding.	⇨Assist the development of local farmers' markets, corporate purchases and e-commerce; ⇨Develop outlets for fresh food at convenience stores and markets for family meals; ⇨Assist religious and volunteer groups to produce organic products; ⇨Select a day for promoting organic products to strengthen consumer awareness.

3. Excellent Agriculture

A. 'Excellent Agriculture' – Current Status (1/4)

i. Agricultural Biotech

- ☑ The production value of agricultural biotechnology in the world reached US$ 41.1 billion in 2007, which is expected to rise to US$ 63 billion in 2013.
- ☑ In 2008 Taiwan's agricultural biotechnology had a production value of NT$ 3.5 billion (US$ 107 million), which amounted to 15.4% of the total value (NT$ 22.6 billion = US$ 107 million) of new technologies.
- ☑ Ping-tung Agricultural Biotechnology Park now has given approval to 67 companies for operation in the Park and twenty have set up shop there, with a total investment of NT$ 3.67 billion (US$ 112 million).

Taiwan's florescent ornamental fish were selected by Time magazine as one of the 40 best inventions in 2003.

A. 'Excellent Agriculture' – Current Status (2/4)

ii. Orchids

- ☑ In 2008, Taiwan had 579 hectares engaged in orchid cultivation, representing NT$ 2.65 billion (US$ 81 million) in production value. Over 70% of production is exported.

A. 'Excellent Agriculture' – Current Status (3/4)

iii. Groupers

- ☑ **Taiwan is the world's largest producer of artificially-propagated grouper fish, with 6 of the 7 varieties of groupers subject to successful artificial propagation raised here. Producing 17,234 metric tons annually, Taiwan accounts for 25% of the world total. The NT$3.8 billion value of domestic production represents over half (58%) of the total global production value of this commodity.**

Giant Grouper

A. 'Excellent Agriculture' – Current Status (4/4)

iv. Ornamental Fish

- ☑ The global ornamental fish trade is worth US$5.8 billion (US$14 billion including peripheral products) annually. Domestic production in 2008 reached US$2 billion (US$61 million). Southern Taiwan's climate & water are favorable to continued growth. Domestic breeding technologies are well developed, and Taiwan's crystal shrimp & angel fish have taken first place in prestigious international competitions;

v. Planting Seeds & Seedlings

- ☑ In 2008 Taiwan produced planting seeds and seedlings worth approx. NT$8.11 billion (US$247 million), of which NT$1.08 billion (US$33 million) was exported. Control & further improvement of key technologies suggest a continued bright future for the sector;

vi. Breeding Animals

- ☑ Commercial livestock represents a booming sector in many countries in Southeast Asia. In 2008, Taiwan's production of breeding animals reached NT$1 billion (US$30.5 million). Systems in place provide formal registration of births, breeding ability verification test results, breeder registration, and breed farm evaluations, essential to building buyer confidence in the breed, quality and 'brand' of Taiwan-produced breeding animals.

B. 'Excellent Agriculture' – Development Goals

As illustrated in the areas of Agricultural biotechnology, orchids, groupers, ornamental fish, seeds/seedlings, and breeding animals, agricultural technology in Taiwan has already achieved remarkable results.

Total production value (2008): NT$21.06 billion (US$642 million)

⇨ (est. 2012): NT$28.67 billion (US$874 million)

※Est. time needed to recover from damage caused by Typhoon Morakot:

- **Orchid production should attain pre-typhoon levels by 2010. Production should double by 2014.**
- **Grouper production should attain pre-typhoon levels by 2012. Production should double by 2015.**

C. 'Excellent Agriculture' – Promotion Measures & Strategies (1/4)

Taiwan Agricultural Technology Advantages

Geographical location

- ⇨ Taiwan leads the world in tissue culture technology for propagating ex-vitro orchid plantlets;
- ⇨ Taiwan has developed technology for artificially propagating 6 out of 7 grouper varieties that can be thus propagated.

IPRs for plant varieties have been established

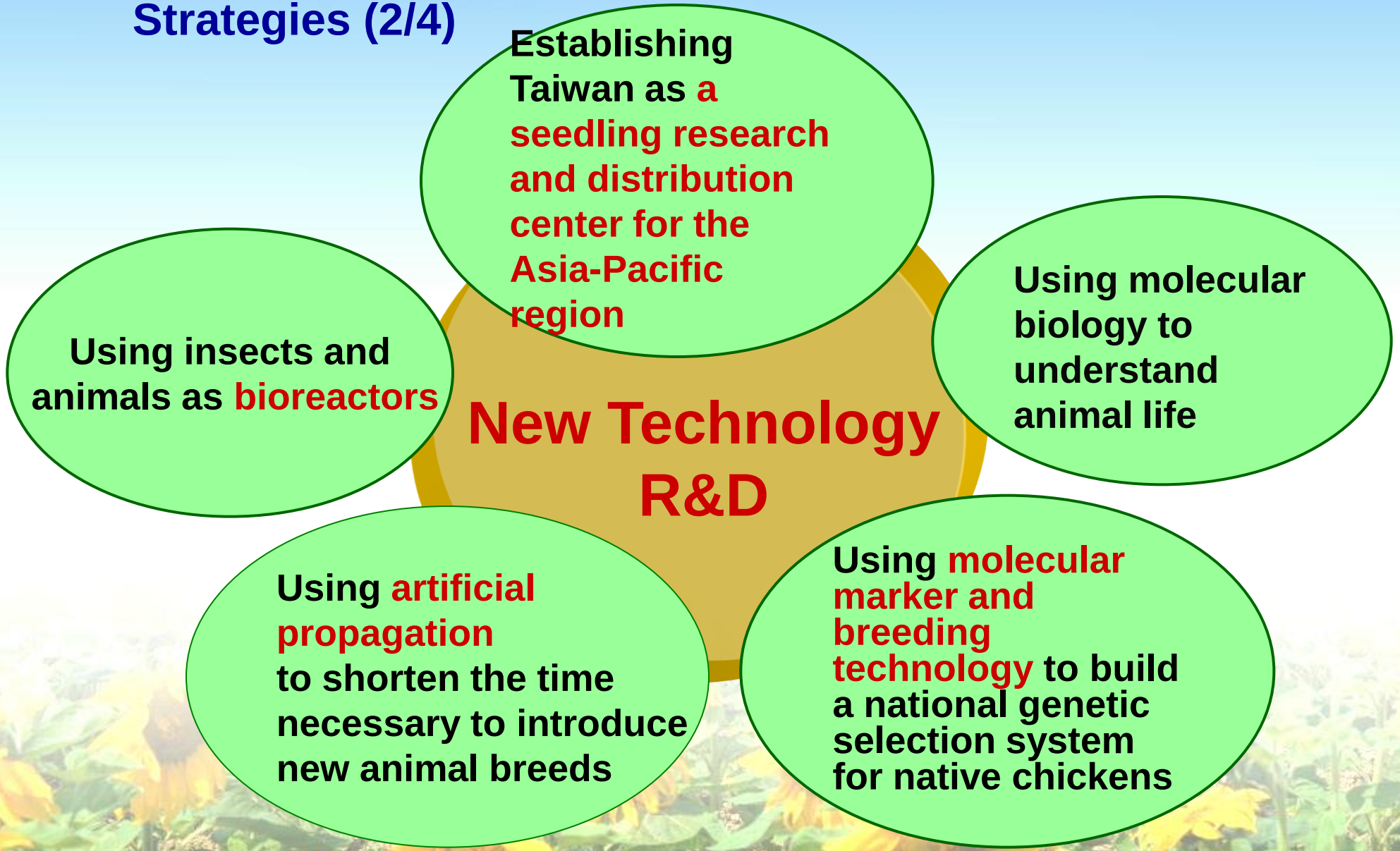
- ⇨ EU, Japan, U.S.A. and Australia have recognized Taiwan's right to apply for plant variety rights protection;
- ⇨ EU has signed bilateral with Taiwan to mutually accept DUS test report results.

Taiwan ranks 12th in agricultural technology development in the world

- ⇨ Taiwan owns the most orchid varieties in the world;
- ⇨ Taiwan has won many awards for developing new ornamental fish varieties.

The easing of tensions between mainland China and Taiwan will help the sale of quality agricultural products in mainland China

C. 'Excellent Agriculture' – Promotion Measures & Strategies (2/4)



C. 'Excellent Agriculture' – Promotion Measures & Strategies (3/4)

Establish a research institute for agricultural science and technology

⇨The new institution will be in Chung-hsing New Village, which is being developed as a science and research park. It will integrate all research resources.

Establish 3 new incubation centers at the following institutes:

⇨Livestock research institute
⇨Agricultural research institute
⇨Fishery research institute

New Management Model

Establish 5 commercialization platforms for:

⇨ Crops
⇨ Fish fry
⇨ Breeding animals
⇨ Safe agriculture
⇨ Molecular farming

Establish 6 GM and biosafety evaluation facilities for:

⇨GM crops, GM animals, GM fisheries products, and vaccines

C. 'Excellent Agriculture' – Promotion Measures & Strategies (4/4)

4. LOHAS Agriculture

A. 'LOHAS Agriculture' – Current Status (1/2)

i. Agro-Tourism

- ☑ **Agro-Tourism Industry:** Totally there are 63 agro-tourism areas and 177 certified agro-tourism farms. In 2008 the market value created by agro-tourism was NT$7.4 billion (US$226 million) , and the total of visitors was 10 million, of which 63,739 were from abroad.
- ☑ **Forest & Eco-Tourism:** There are 18 forest recreational areas and 8 nature education centers and hiking systems. In 2008 the market value was NT$ 3.3 billion (US$101 million), and the number of visitors 4.8 million in total.
- ☑ **Coastal Fisheries Tourism:** Fishing ports total 77, accommodating a total of 266 recreational or sport fishing boats, which carry a total of 1.2 million visitors a year for whale watching or sport fishing. The Fishermen's Wharf in Damshui has over 1 million visitors annually.

A. 'LOHAS Agriculture' – Current Status (2/2)

ii. Exquisite Agricultural Products

- ☑ **Finest tea:** The yearly production is 17,000 M.T., of which 900 M.T. carries origin and traceability certificates with a total value of NT$900 million (US$27 million) .
- ☑ **Farm-brewed wine:** 23 wineries produce 200 thousand liters, worth NT$ 100 million (US$3 million).
- ☑ **High-quality rice:** Taiwan's annual brown rice production is 1,170 M.T., of which 962,000 M.T. is good quality rice. The best quality rice is about 2,500 M.T. valued at NT$400 million (US$12 million).
- ☑ **Fine bamboo products:** The traditional bamboo industry has an annual production value of about NT$ 10 million (US$300,000). New bamboo commodities including bamboo charcoal products, bamboo art articles and other fine products fetch over NT$ 2 billion (US$61 million) a year.
- ☑ **Choice fishery products:** The total value of 11 fishery products including tuna frozen at ultra-low temperature, clam essence, mullet roe, and cobia reaches NT$ 880 million a year (US$27 million).
- ☑ **Safe and quality livestock products:** High-quality products such as chicken essence, black-boned chicken gelatin, ham and gelatinized eggs post a production value of about NT$2.9 billion (US$88 million) annually.

B. 'LOHAS Agriculture' – Development Goals

Develop in-depth Agro-Tourism

- Forest recreation
- Sport fishing and whale viewing
- Recreation in rural areas

Goals for 2012:

⇨More than 30 million visitors
⇨Market value will be doubled to about NT$ 19.9 billion (US$ 607 million)
⇨25,000 new job openings created by end of 2012.

Exquisite agricultural products

- Finest tea
- Farm-brewed wine
- High quality rice
- Fine bamboo products
- Choice fishery products
- Safe and quality livestock products

Goals for 2012

⇨Production value: NT$ 12.3 billion
⇨4,500 new job openings created by end of 2012.

C. 'LOHAS Agriculture' – Promotion Measures & Strategies (1/4)

i. Agro-Tourism (1/2)

Promote 4 demonstrational agro-tourism areas

Establishing agrotourism certification and service certification

Establish 3 flatland forest recreational areas of over 1,000 ha. each

They will serve as energy-saving, carbon-reducing eco-educational centers

New Management Model

Revitalize & beautify 310 rural communities

Establish 4 yacht berthing areas and 2 model recreational fishing harbors

Establish a dynamic and user-friendly global information platform using modern information technology

C. 'LOHAS Agriculture' – Promotion Measures & Strategies (2/4)

i. Agro-Tourism (2/2)

Develop New Market in-depth agro-tourism

Develop theme itineraries catering to different groups of travelers	
For health	Trips for promoting health, inside forest, on bike
For parents and children	DIY farming, whale viewing and ecosystem experiencing
Learning and experiencing	Off-school teaching, agri-business experiencing, and farm stays
Cuisine trips	2 meals and one night stay to enjoy delicious meals and culture
Relaxation and healing	Herbal and flower healing
Number of foreign visitors will double by 2012	
Attract group visitors from Japan, South Korea, Malaysia and mainland China and backpack travelers from Singapore, Hong Kong , U.S.A. and Europe	
Promote airport to farm travel plans	

C. 'LOHAS Agriculture' – Promotion Measures & Strategies (3/4)

ii. Exquisite Products (1/2)

New Tech R&D

- ☑ Develop **preservation at room temperature and freezing technology** to prolong shelf life.
- ☑ Integrate **traditional, wine-making method** with **biotechnology** to manufacture fine wine commercially.
- ☑ Develop core technology for producing **fine bamboo products** for use in industries such as semi-conductor, medicine or energy.

New Management Models

- ☑ Expand **labeling products with origin and traceability certificates** to diversify marketing channels.
- ☑ Establish **integrated marketing platform** to strengthen farmer group contacts and interactions with super-markets and warehouse retailers.
- ☑ Work with industry to create common **'Taiwan' brand image**. Create strategic alliance joining farmers, processors and channel managers.
- ☑ Promote food **quality accreditation** in order to link up with **ISO**.
- ☑ For the convenience of mainland China tourists, promote an **"order in Taiwan and take delivery in China"** scheme.

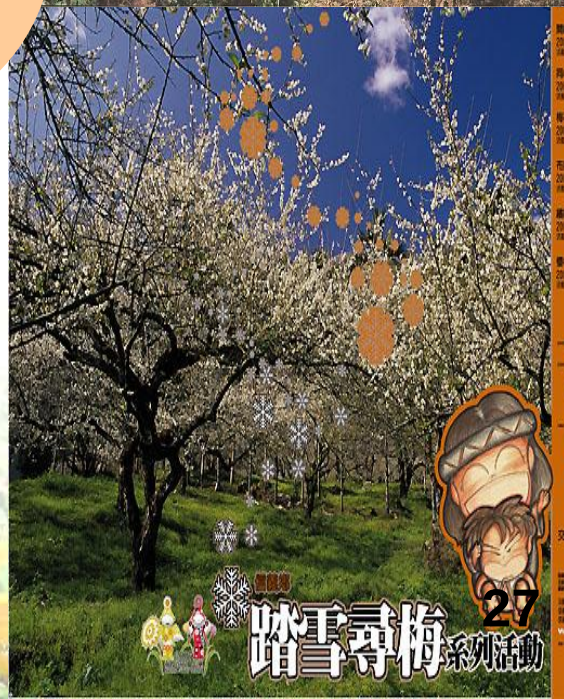
C. 'LOHAS Agriculture' –
Promotion Measures & Strategies (4/4)
ii. Exquisite Products (2/2)

New Market Development

Integrate local industrial culture, rural beauty, agro-tourism and e-commerce to promote exquisite agricultural products

To meet the needs of agro-tourism and consumers, develop gift products with local characteristics

The plum factory of Hsin-yi farmers' association sells beautifully packaged plum products. Plums are purchased from farmers, processed by the association, and sold to consumers at reasonable prices.



5. Final Remarks

The Quality Agriculture Program Will Create a High Quality of Life

Agriculture is not just an economic industry; it also creates such noneconomic external effects as contribution to both physical and mental health, help in social stability, and increase in green national income. Such effects have a value far beyond the GDP calculated traditionally.

Tree planting, reborn coastal areas, and rural renewal all help revive the agricultural sector and promote agro-tourism.

Most important of all, this program will leave future generations with ecological beauties and pleasant living space.

Besides economic benefit, the quality agriculture program will contribute to:

- ✓ **Safer food products.**
- ✓ **A greener environment.**
- ✓ **A more attractive local culture.**
- ✓ **More creative technology.**
- ✓ **Less pollution.**
- ✓ **Better quality of life.**

6. Points for Discussion

A. Utilizing Technology to Achieve 'Healthful Agriculture' Nationwide

i. How may we best employ current technologies to enhance critical facilities and so streamline production management and create a product-based healthy management model?

ii. How may we best employ biotechnology to develop advanced bio-fertilizers, pesticides and bio-control of pests able to promote further expansion of organic agriculture?

iii. How may we best employ communications technology to create product traceability systems able to help support achievement of a seamless product safety management system?

B. Developing Advanced Technology for 'Excellent Agriculture'

i. Discuss and determine the direction and intended functions of the future the research institute for agricultural science and technology in order to expedite vertical integration of agricultural resources and realize effective commercialization of agro-biotech.

ii. How may we best employ biotechnology to develop critical technologies and raise core competitive advantages in the agricultural sector?

iii. How may we best strengthen core functions of Agricultural Technology Parks, expand industry scale and create more clusters of Excellent Agriculture?

C. Utilizing Technology to Create a 'LOHAS Agriculture' that Bridges Comfort & Fashion

i. How may we best use communications technologies and go about training rural IT specialists in order to create an interactive, user-friendly global portal for Taiwan agro-tourism?

ii. How may we best use communications technologies to innovate operation & management models able to expand sales and marketing channels for Taiwan agriculture?

The End

We Welcome Your Comments

Points for Discussion

1. **Quality Agriculture Development Program**
   - a) How may we best employ current technologies to achieve healthful agriculture for all?
   - b) How may we best develop technologically-advanced excellent agriculture?
   - c) How may be best use current technologies to a create comfortable and fashion-conscience LOHAS agriculture?
2. **Utilizing Technology to Achieve 'Healthful Agriculture' Nationwide**
   - a) How may we best employ current technologies to enhance critical facilities and so streamline production management and create a product-based healthy management model?
   - b) How may we best employ biotechnology to develop advanced bio-fertilizers, pesticides and bio-control of pests able to promote further expansion of organic agriculture?
   - c) How may we best employ communications technology to create product traceability systems able to help support achievement of a seamless product safety management system?
3. **Developing Advanced Technology for 'Excellent Agriculture'**
   - a) Discuss and determine the direction and intended functions of the future the research institute for agricultural science and technology in order to expedite vertical integration of agricultural resources and realize effective commercialization of agro-biotech.
   - b) How may we best employ biotechnology to develop critical technologies and raise core competitive advantages in the agricultural sector?
   - c) How may we best strengthen core functions of Agricultural Technology Parks, expand industry scale and create more clusters of Excellent Agriculture?
4. **Utilizing Technology to Create a 'LOHAS Agriculture' that Bridges Comfort & Fashion**
   - a) How may we best use communications technologies and go about training rural IT specialists in order to create an interactive, user-friendly global portal for Taiwan agro-tourism?
   - b) How may we best use communications technologies to innovate operation & management models able to expand sales and marketing channels for Taiwan agriculture?