

# **The Framework of Agricultural Policy and Recent Major Agricultural Policies in Taiwan**

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## **Abstract**

In the past years, the changing factors of agriculture developments in Taiwan are influenced greatly both internally and externally. Facing the challenges of new environment, it is critical to establish industrial value chain operation to expand the breadth and depth of agriculture in order to replace the traditional thoughts of production-oriented agriculture. To achieve a healthy, efficient and sustainable agriculture for all citizens, we develop a holistic plan and connect the plan with human, earth, water, and industry when implementing agriculture policies. The main strategic goals of recent agricultural policies include: raising the competitiveness of industry and leading the internationalization of Taiwan's agriculture; adjusting the agricultural structure and integrating the value-adding development of resources; ensuring food security and strengthening agricultural product safety; vitalizing the use of agricultural resources and ensuring sustainable development; and taking care farmers' well-being.

Keywords: Agricultural Policy , Value Chain , Industrial Competitiveness,  
Food Security and Safety, Sustainable Development

## **Preface**

Taiwan is located in the subtropics. Mountains and rugged hills cover two-thirds of the land, only about 830,000 hectares of land are suitable for agriculture. The average farm covers 1.1 hectares, thus the agricultural sector is largely composed of small farms. However, Taiwan is working to develop its agriculture by introducing advanced technologies and modern equipment. Agricultural products in Taiwan are highly diverse, and output is high. Agriculture industry has laid the solid foundation for the soaring economic growth that Taiwan has enjoyed in recent decades.

In 2012, annual agricultural output was about US\$16.14billion, or 1.90% of GDP. Farm crops account for 46.64% of this figure, followed by fisheries at 22.22%, livestock at 31.06% and forestry at 0.08%. About 544,000 persons was employed in agriculture, and average annual income per agricultural household was about US\$33,628. Agriculture accounts for 1.9% of Taiwan's GDP, but its share of rises to 13% if we include agriculture-related secondary and tertiary industries, such as food processing and leisure. Agriculture plays an extremely important role in providing food, supporting rural development, and contributing to environmental conservation.

Agricultural development in Taiwan has taken a unique path. In the early years, the government carried out land reform to provide "land to the tiller," and then made policy adjustments as agriculture progressed, seeking at first to spur greater productivity, and then to develop exports of both raw and processed agricultural goods. These developments in turn ushered in an era of rapid economic growth. Taiwan's success in the development of small-scale agriculture had become a model for developing economies the world over.

In recent years, the core principles of "healthfulness, efficiency, and sustainability" form the backbone of the Taiwan's agricultural policies. Agricultural policies will be rooted in the present and looking to the future, we seek to build a modern agricultural sector with a strong global presence.

## **The Framework of Agricultural Policy**

Agriculture is a biologic industry, and an important business to support people's livelihood; its development is not only limited by nature, but also influenced by the change of social environment, as well as the trends of economic and trade system. In the past years, the changing factors of agriculture developments are influenced greatly both internally and externally; such as: (1) International economic development which focused on the regional integration and the further liberalization of agricultural trade; (2) Climate change dramatically which threatens our food security; (3) Fast advancement of new agricultural and related technologies; (4) Food safety and consumers' habit become highly important in the future.

Facing the challenges of new environment, it is critical to establish industrial value chain operation to expand the breadth and depth of agriculture in order to replace the traditional thoughts of production-oriented agriculture. To ensure a healthy, efficient and sustainable agriculture for all citizens, it is important to develop a holistic plan and connect the plan with human, earth, water, and industry when implementing agriculture policies.

### **Vision and Mission**

Agriculture is the foundation of the development of a country. To ensure the long term sustainability of agricultural development; a holistic view of agriculture and diversified effort needs to be placed in to ensure safe foods, maintain eco system, manage natural resources, revitalize idled agricultural elements, integrate with agriculture cultural elements, adjust policies, improve agricultural structure and modernize agriculture operation to increase the competitiveness at the international level.

Agriculture policy deployment needs to continuously drive the promotion of industry, operational scalability and improve structural of human resource; also to improve the competitiveness of agriculture by leveraging interrelated industries to create innovative agriculture policies, collaborations with up and downstream industries to optimize utilization of resource, create agricultural value chain, expand leisure agriculture business, and integrate agricultural product traceability and certification with international organization. Meantime, fully utilize modern technologies to develop green technology based agricultural environment, to expand technology export business, and to create green technology based agricultural business opportunities. Transforming traditional agriculture into a green based eco industry and service oriented operation is also transform agriculture from a local industry into an international green gold industry.

The framework of agricultural policy of Taiwan is briefly described as Figure 1.

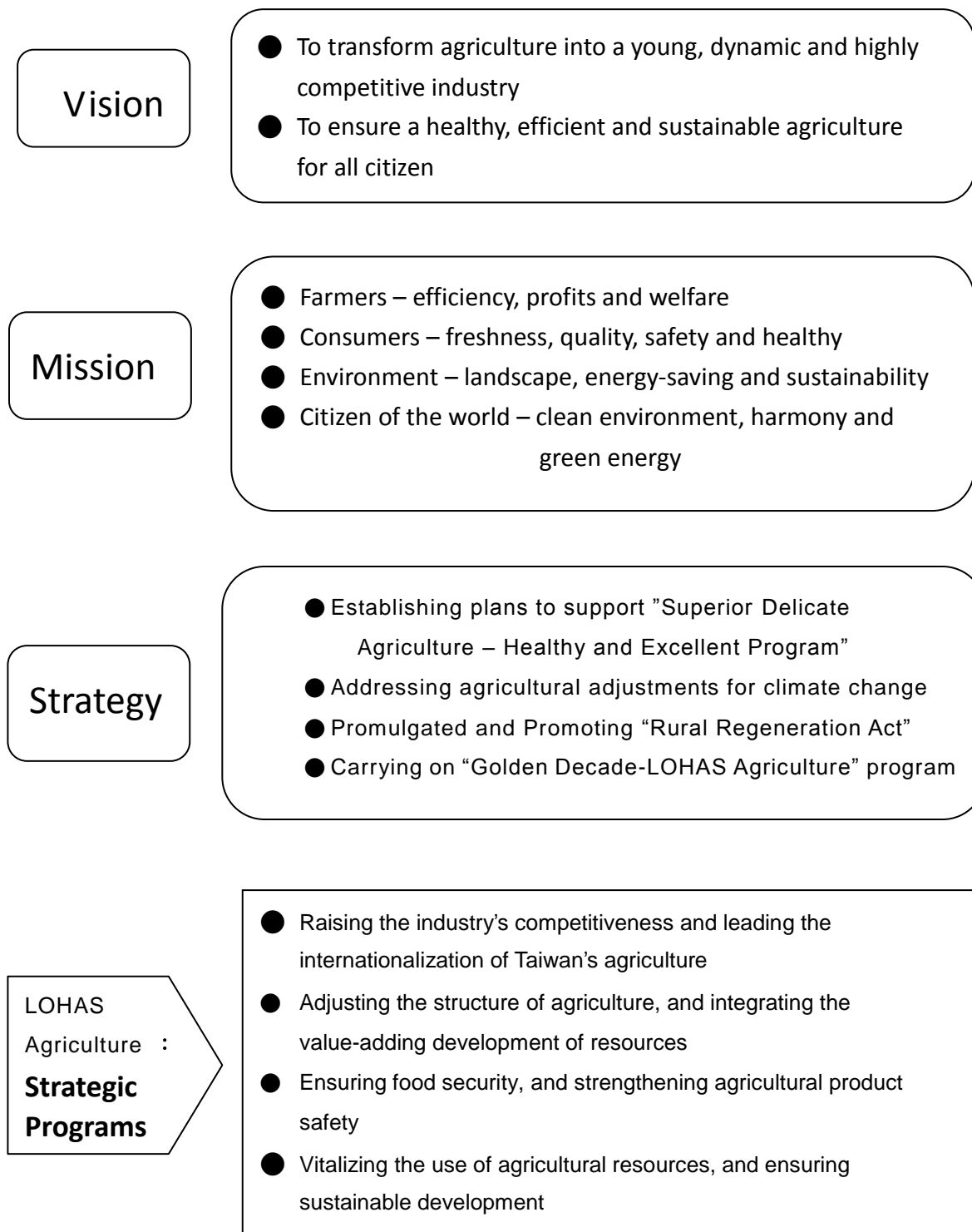


Figure 1: The Framework of Agricultural Policy of Taiwan

## Focal Points of Agriculture Policy Deployment

Based on the core goals, 'Healthy, Efficient, Sustainable', of policy deployment, several important policies were designed: 2009, formation of "Exquisite Agriculture" policy; June 2010, conference called to address policy amendment for agricultural impact by climate change, by August, policy to 'Rejuvenation of Agricultural Community' was announced and deployed; and January 2011, a symposium was organized to establish common understanding of policy directions, address agricultural land utilization, plan for agricultural academy, and phase-approached plan for industry upgrade, structural adjustments and agricultural community rejuvenation.

Agriculture is the foundation of a country, facing a number of issues, such as: free trade, rapid economic growth globally, climate changes, competition of land and resource utilization, food safety, production and sales, it is inevitable for administration to create a superior agricultural environment, attract younger workforce, and accelerate the structural adjustments of industry and human resource in order to develop effective agricultural operation, maximization of resource usage and industry sustainability.

To lead Taiwan into a sustainable agricultural operation at the international level, the future policy design needs to thorough, it should,

- base on overall goals, 'affluent citizen and peace of mind', of the administration
- follow the core agricultural values ' Healthy, Efficient, Sustainable'
- leverage advanced agricultural technologies and rich agriculture cultural
- integrate land, technology and human resource
- reinforce collaboration between departments and industries
- utilize information and green technologies
- manage the industry with modern concept

Diversified agricultural functions have become one of the focus areas by many governments; other than increase competitiveness, related subjects: food safety, eco system, scenery and culture have become part of the focus. Water and land are the key resource to agriculture, thus, management to water and land become important to ensure the food safety and proper utilization of resource. The quality of agricultural community needs to be considered as part of 'Agricultural Community Rejuvenation' policy design, deployment and the management of industry.

Key points for future agricultural policies:

### A. Competitiveness at International Level

1. Establish agricultural specific cloud based, integrated service system, service catalog as follow:
  - Production, marketing, and sales
  - Product traceability
  - Agricultural leisure, travel
  - Organization resource management of agricultural operation
  - Real time emergency natural disaster report
  - Farm and ranch management in dedicated production zone
2. Strengthen on early warning and adjustment to ensure stabilization of agricultural production and marketing
  - Realize assistant programs and stabilization measures for agricultural production and marketing
3. Cross industry collaboration and expedite the establishment of agricultural industry value chain operation
4. Promote the development and industrialization of innovative agriculture technologies to enable agricultural upgrade
  - Selection of qualified technologies and products
  - Shortening fund-raising schedule of agricultural listed company
5. Integrate with green technologies to drive the high efficiency and energy-saving innovative agricultural technology
  - Modern equipment
  - Assist fishery upgrade and subsidize electric usage
  - Improve forestry operation
  - Utilize green and newly developed agricultural technology
6. Strengthen international agricultural business
  - Promote export-oriented agricultural products
  - Develop international marketing programs
  - Promote ornamental fishery, grouper, livestock, poultry
  - Developing bamboo products innovation and applications
7. Promote internationalization for leisure agriculture
  - Promote in-depth agricultural travel
  - Strengthen the SQC(Services Quality Certification) for leisure farms
8. Participate international trade negotiation, realize agriculture structural adjustments
  - Remove obstacles of tariff and non-tariff
  - Join international organizations and bilateral negotiation

- Establish cross- strait fishery operating order and cooperation mechanisms
- B. Adjustments of Agricultural Structure, Talent Development, Develop Value Add Resource Consolidation
1. Improve Agricultural Talent and Operational Efficiency
    - Establish retirement system for aging farmers
    - Promote ‘Small Landlord, Big Tennant’
    - Drive Agricultural Academy
    - Establish young farmer consultation center
  
  2. Combine industry development with rural rejuvenation, improve living quality of agricultural community and production environment
    - Drive agricultural rejuvenation
    - Establish agriculture production zone
    - Create collaborative business opportunities
- C. Ensure Food Security and Enhance Agricultural Products Safety
1. Improve Domestic Food Self-Sufficient Rate, Establish Diversified Food Security Mechanisms
    - Develop diversified food production and supply system
    - Develop management system of classification of food security
  2. Promote Exquisite Agriculture with Traditional Cultural Elements
    - Combine origin characteristic of agricultural product with traditional and local culture
    - Assist the development of diversified utilization and innovative packaging
    - Develop tea industry as Exquisite Agriculture
    - Promote efficient high-value livestock production systems
  3. Promote ‘Consume at the Production Location’ and Diversified Marketing Channels
    - Develop new demand of local produced products
    - Promote the concept of ‘Consume at the Production Location’
    - Promote dietary education
  4. Drive Rational Fertilization and a Friendly Business Model, Create Low Carbon Green Energy Environment
    - Assist farmers in rationalizing fertilization use
    - Reduce energy consumption and carbon reduction in livestock industry, prevent pollution and reuse

5. Drive Certification System for Agricultural Products
  - Promote multiple recognized certification system
  - Drive and establish localized specialties and value-added livestock marketing system
6. Improve Animal and Plant Health Inspection and quarantine
  - Sound adjustment of FMD prevention measure
  - Strengthen animal disease detection, warning
7. Pesticides and Animal Drug Safety Inspection with International Standard
  - Define drug testing guidelines
  - Establish testing stations
  - Strengthening agricultural pesticide residue detection technology development and the integration of surveillance systems
  - Leverage advanced technology to test and monitor pesticide usage (field, work areas, market)
  - Develop test plan based on production zone, production date and product traits
  - Outline process to handle drug test failed products to prevent flow into the marketplace
  - Determine penalty for violators (training, legal actions)
  - Conduct drug test and heavy metal testing for unlisted fishery products to ensure sea food safety

#### D. Reactivate Agricultural Resource, Maintain Ecological Sustainability

1. Adjust Farming Systems, Promote Diversified Food Production
  - Strengthen the promotion of the continuous fallow reactivation
    - i. Replace idle land compensation with reward of production
    - ii. Expand short term economical forestation and eco maintenance
    - iii. Encourage the fallow farmland divertive uses
  - Encourage the fallow farmland diversified use
    - i. Encourage local specialties in demand for crop rotation local
    - ii. Reward contractual farming
    - iii. Promote domestic feeding crops to replace imported crops
    - iv. Raise domestic grains self-sufficiency rate
2. Preserve Premium Agricultural Land and Focus on 'Agricultural Land for Agricultural Usage'
  - Plan out agricultural land resource, classify agricultural land
  - Develop long term agricultural land resource survey system
  - Maintain premium agricultural land and resource
  - Enhance communication between departments to support local management of premium land



3. Promote Rational Planning of Quantity and Quality of Agricultural Water
  - Promote drought resistant crops for dry land
    - i. Leverage innovative technologies and modern operations to promote energy or resource saving agricultural production
    - ii. Drive agricultural diversity to reduce agricultural water consumption
  - Plan rational usage of agricultural water
    - i. Strengthen facilities and hardware to support rational usage
    - ii. Establish land appropriated, energy and resource efficient management system
    - iii. Consider cross region model for water management and adjustment
    - iv. Assess rational water usage based on crops and regional food production
  - Establish monitoring and warning systems to handle water quality and emergency management
    - i. Establish water management information system
    - ii. Expand operational environment for mobile irrigation
    - iii. Rollout eco protection of water fields
    - iv. Enhance water adjustment mechanisms for water fields
  
4. Improve and upgrade Irrigation Facilities
  - Leverage eco-friendly system when upgrading irrigation systems
  - Improving and updating irrigation and water conservancy facilities
  - Expand drought resistant crops with modern management
  - Rezone with rejuvenation of agricultural community
  - Improve irrigation and drainage channels of prior rezoned land
  - Monitor irrigation water quality and management survey facilities
  
5. Strengthen the Conservation of Fishery Resources, Lead Fishery Industry for Sustainability
  - Enhance aquaculture in harmony with the environment
    - i. Improve fishery production site and associated public facilities
    - ii. Expand supply of clean sea water
    - iii. Strengthen and expand the conservation of coastal and offshore fisheries resources
  - Expedite recovery of fishing resource and sustainable utilization
    - i. Manage number of fishing boats
    - ii. Build scalability in fishery and establish premium fishery environment
    - iii. Establish ocean protection zone and associated management and monitoring

- iv Establish fishing region/class operational management
  - v Strengthen education of ocean conservation
  - Participate and cooperate in conservation of international fishery resources
    - i. Join international organization of three oceans
    - ii. Strengthen assessment of ocean resources
    - iii. Compete for quota of fishery results
    - iv. Emphasis on collaboration for both sides of the strait
    - v. Deliver international obligation and expand diplomacy of fishery
    - vi. Support international compliance of fishery
    - vii. Continue to mechanized monitoring of fishing boats
    - viii. Prevent illegal activities
    - ix. Expedite the deployment of energy efficient boats
6. Strengthen Afforestation
- Strengthen reforestation and restoration of degraded coastal woodland forest
  - Maintain natural habitat
  - Promote afforestation
  - Cash reward for hillside and plains afforestation
  - Strengthen management of afforestation and sustainability
7. Establish Forest and Sustainable Development of Natural Resources
- Strengthen woodland and sustainable forest management
    - i. Establish nationwide forestry resource monitoring system
    - ii Strengthen maintenance and conservation of forestry history
    - iii Survey nationwide ownership of forestry (country, public, private)
    - iv Maintain forestry growth content and changes
    - v Strengthen forestry rental control mechanisms
    - vi Strengthen patrol and monitoring of forest
    - vii Prevent arson, abuse and stealing
  - Maintain natural ecosystems
    - i. Outline management system for nationwide protection zones
    - ii Develop cadence to evaluate management results
    - iii Outline R&D to drive sustainability of bio resources
    - iv Promote natural heritage to be recognized by World Heritage Centre (UNESCO)
    - v Promote education and training on plant diversity
    - vi Address issues related to released animals and foreign species which are endangering to domestic species

- vii Promote management of converted wetland from subsidence land
- viii Strengthen recreation zones, public facility and tour guide service
- ix Maintain walking path
- x Establish flat land forest

8. Strengthen Animal Protection and, Implement Pet Management

- Enhance law enforcement intensity and monitoring
- Enhance pet registration and sterilization
- Reduce stray cats from the beginning
- Strengthen public animal shelters and quality
- Promote economic and humane treatment for laboratory animals

9. Promote Holistic Watershed Conservation and Disaster Prevention

- Strengthen watershed sediment disaster management
- Combine hardware and software on disaster prevention
- Strengthen local voluntary disaster prevention capabilities
- Integrate advanced technologies to enhance landslide warning system
- Promote "preventive management" and localize the "self-management" policies
- Provide technical consultation on conservation of water and soil
- Accelerate the overall state-owned forests, watershed conservation

E. Strengthen Farmers' Organization, Care for Farmers' Well-beings

1. Taking Care of Farmers

- Provide relief due to agricultural natural disaster and impact by imported products
- Subsidize fishing boats oil
- Guarantee purchase price
- Subsidize idled season for fishermen
- Release cash benefits for aging farmers
- Subsidize allowances to farmers and fishermen children schooling expenses

2. Plan Income Support System for Farmers and Agricultural Insurance

- Design policy adjustments to support agricultural income support system
- Plan agricultural and vessels insurance

3. Strengthen Operational Efficiency and Service Functions of Farmers' Organizations

4. Improve Agricultural Financial System

- Promote jointly use of agriculture and fishery information system
- Develop sound credit department of farmers and fishery organizations

## Conclusion

The agricultural policies of Taiwan continue to promote the industry, along with the restructuring of agriculture resources in order to increase its competitiveness. At the recent years, the policies also put emphasis on integration with related primary, secondary and the third industries to drive innovation and extend the scope of agriculture. In order to advance agriculture, leveraging business intelligent information and green technologies to create new agriculture production environment are employed to increase food production. Additional effort should transform agriculture toward green focused operation and promote service-oriented development.

With the designed policies, agriculture in Taiwan is not just a local industry, but an international green gold industry. With the transformation, agriculture in Taiwan will become energetic, competitive, and provides stable income to attract younger workforce. The ultimate goal to increase the value of agriculture and related value-chain of agriculture can be realized.

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