



Agriculture & Food Agency

Introduction to Taiwan(ROC) Sustainability

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Agriculture & Food Agency
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Outline

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- Agricultural Sustainability
- Green Agriculture in Taiwan
- Conclusion

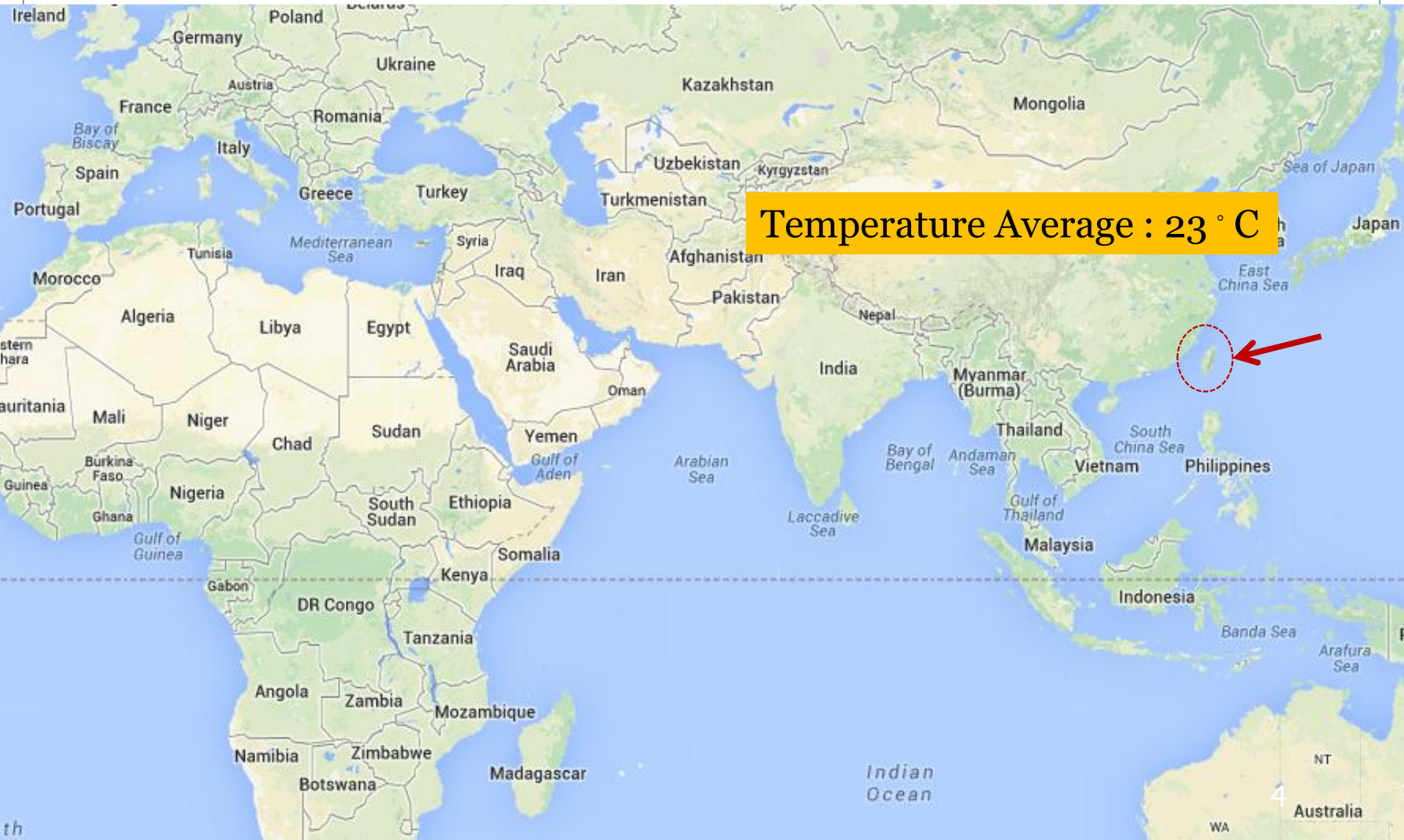
Taiwan

WHERE IS TAIWAN??

**THE CURRENT STATUS OF
TAIWANESE AGRICULTURE??**



Geography & Climate





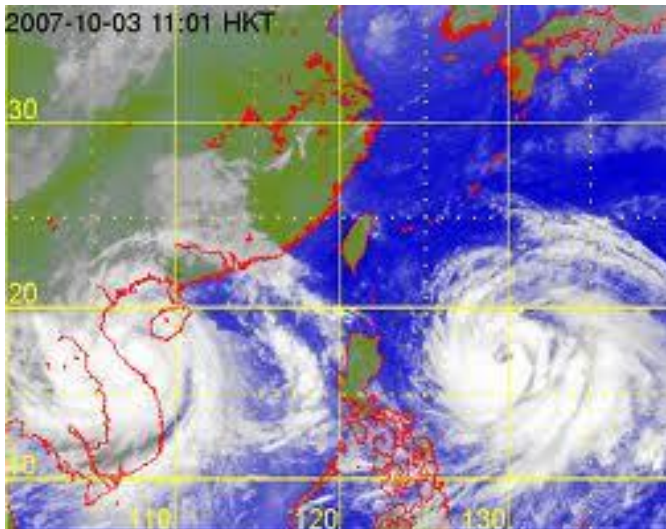
Geography & Climate



1. The weather is wet and warm which is good for crop, pest, and weed growing.
2. The topography affect the movement of water & soil nutrient. (The highest mountain : Yushan 3,952 meter)

The climate

- Tropic of Cancer crosses through
- Tropical in southern counties
- Sub-tropical from middle to northern counties
- Temperate in high mountains
- Typhoon pass in summer and autumn



Satellite Image of Taiwan

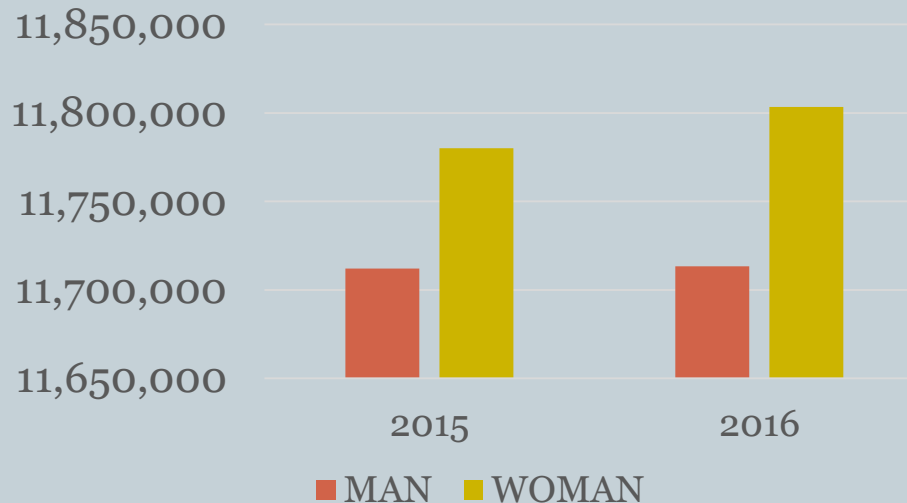


Source: <http://www.cwb.gov.tw/>



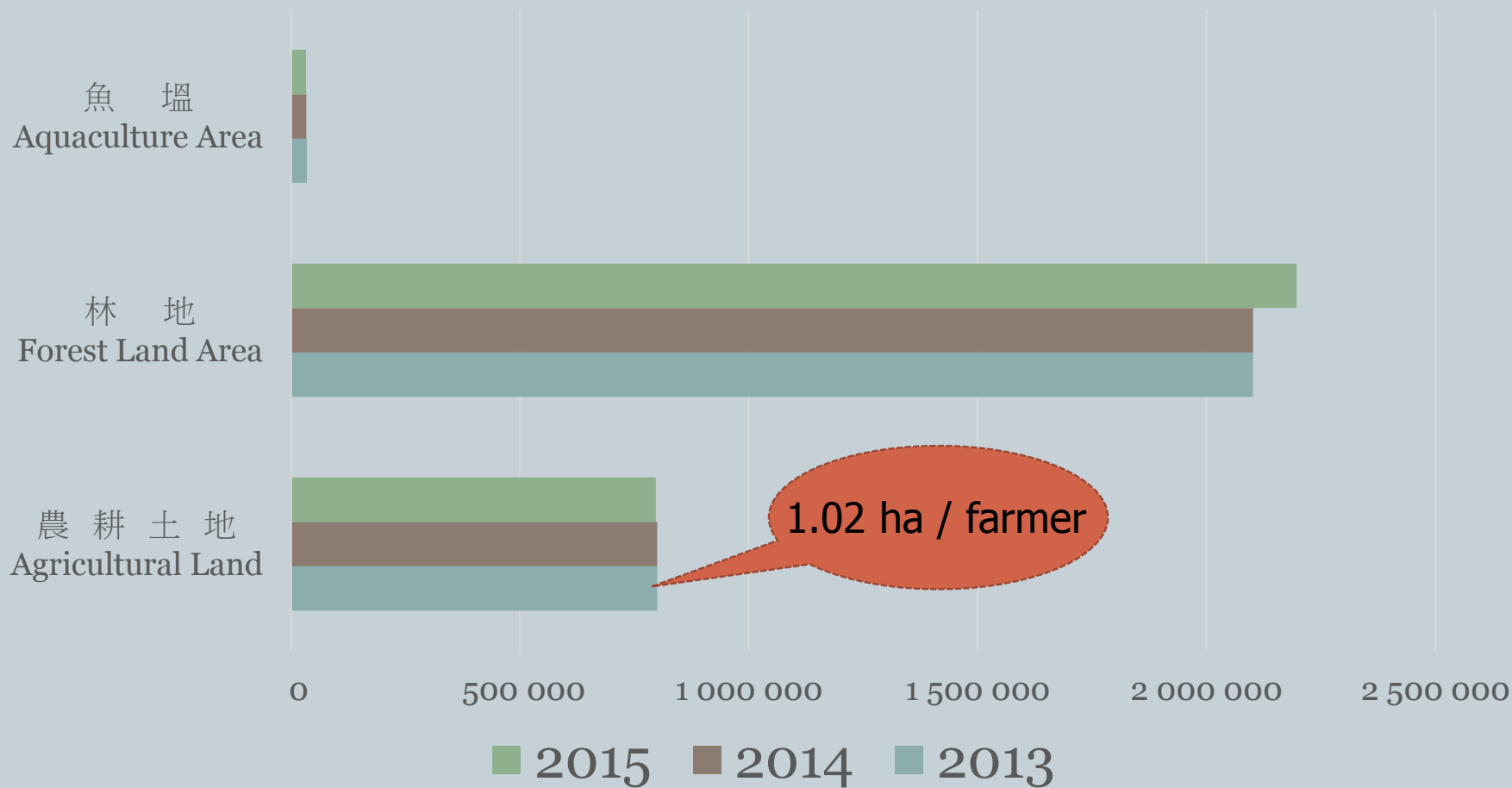
People

- There are around 23 millions of people living in Taiwan.
- Taiwan's land area: $36,197 \text{ Km}^2 = 3,619,700 \text{ Ha}$
- There are 650 people per square kilometer.





Agriculture (unit: Ha)



Major crops products

- Paddy Rice
 - the major product
 - holds the largest area
- Vegetables
 - Cabbage, Cash vegetables
- Fruit
 - Pineapples, Bananas, Mangos
- Special Crops
 - Tea, Sugarcane
- Ornamental Plants
 - Orchid, Chrysanthemum



Phalaenopsis cultivated in green house with Environmental control system

What is the NCSD?

**NATIONAL COUNCIL FOR
SUSTAINABLE
DEVELOPMENT**

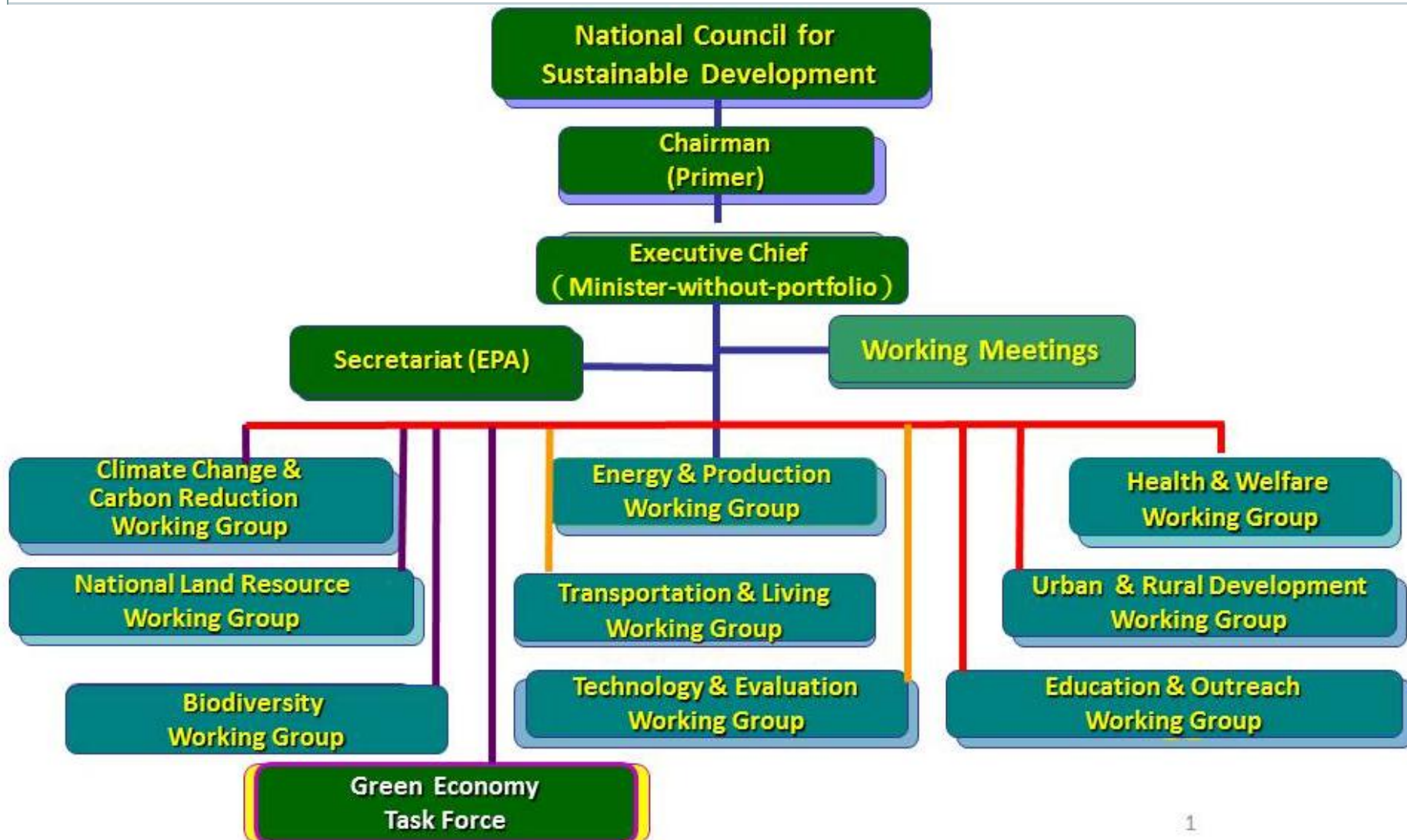


NCSA

- The NCSA is the most important government organization of Taiwan to promote environmental sustainability.
- The NCSA has 9 functioning working groups, namely:
 - Climate Change and Energy Conservation & Carbon Reduction Working Group
 - National Land Resources Working Group
 - Biodiversity Working Group
 - Energy and Production Working Group
 - Transportation and Livelihood Working Group
 - Technology and Evaluation Working Group
 - Urban and Rural Development Working Group
 - Health and Welfare Working Group
 - Education and Promotion Working Group



Organization of the NCSC



Agricultural Sustainability



Agricultural Sustainability

- The main goal of agricultural sustainability is:
 - ensure basic food security
 - agricultural production capacity
 - sustainable use of lands and solid economical outputs



To make sure the production is long-term sustainable.

Avoid damaging the production environment.

How to make the production is long-term sustainable ? How to avoid damaging the production environment ?



Advising farmers to fertilize reasonably



- To maximize their harvests, **farmers tend to use excessive fertilizers**, which to be rectified.
- To achieve this goal, the Research Institutes under the COA formed the **Advisory Group for Reasonable Use of Fertilizers** in 2008.



Eutrophication and paddy lodging
due to over-fertilization

Damages caused by improper fertilization

- ❑ Soil acidification
- ❑ Desertification
- ❑ Soil fertility decline
- ❑ Soil contamination
- ❑ Eutrophication of lakes



Result of salt damage
— plants showing
uneven growth pattern

Advising farmers to fertilize reasonably

- 1. Use fertilizers rationally: in respect to the characteristic of each soil and crop.**
- 2. Use domestic organic fertilizers and cultivate green manure crops to increase land fertility.**
- 3. Eco-friendly farming: decrease of fertilization, proper use of pesticides, and reasonable use of fertilizers.**
- 4. Gradual transition into organic farming & achieve agricultural sustainability**

What is reasonable fertilization?

- **Taking all aspects into consideration, from the place, crop, timing, amount, to method.**
- In respect to each individual crop's and its nutrition requirements in growth cycles, on top of fertility tests, the amount and method of using fertilizers should be adjusted accordingly.
- Too much fertilization can be harmful to the crop, which not is wasteful in both financial and agricultural sense.

N, P, K



Promotion efforts on reasonable use of fertilizers through 2008-2015

Year	Promotion Event (session)	Demonstration Spot	Fertility Test (case)	Total Chemical Fertilizer Used (10k MT)
09	384	300	35,059	104.2
10	312	300	33,110	103.1
11	488	309	44,406	100.8
12	550	311	42,947	101.0
13	406	100	41,053	99.9
14	254	60	34,359	97.2
15	285	50	38,095	96.0
Tot.	2,555	1,534	285,586	Average 1000k MT

As the chart shows, the average yearly chemical fertilizers used from 2005-2007 was 1140k MT, and the initiative has since **dropped this number to 1000k MT.**

Green Agriculture in Taiwan

- **ORGANIC AGRICULTURE**
 - Promote strategy



Strategies for Promoting Taiwan's Organic Agricultural Products

1. Set Up Promotion Objectives

2. Improved Relevant Management Regulations

3. Designing designated area and cultivating through groups

4. Technological and Development, Education and Promotion

5. Provide counseling on processing to extend the industry value chain

6. Strengthen certification management and expand organic marketing channel

7. International Cooperation, Technological Exchange



1. Set Up Promotion Objectives

- 1) Multiplying the organic land, Taiwan organic lands increased from 2,342 hectares in 2007 to over 5,000 hectares in 2012.
- 2) It is projected that the land will expand by another 7,000 hectares by 2020, reaching a total of 12,000 hectares.



3. Designing designated area and cultivating through groups

- 1) Establishing public organic area
- 2) Providing counseling for farmers and cultivation through groups
- 3) Integrating “production, life and ecology” to develop organic villages



2011 08 17 11:34

1) Public Organic Area- Kaohsiung Yongling Organic Agricultural Zone





2) Counseling Farmers to Establish Group Cultivation Area

Farmer Shun-Nan Chen from Caotun has increased his cultivation land from 1.8 hectares to 10.12 hectares, 4.62 times greater.

3) Develop Organic Village



Combining production, life and ecology, there are 12 organic villages (settlement) established in Northern and Eastern Taiwan by the end of 2014. Currently 593 hectares of land have been certified with gradual expansion, encouraging the young people to return home and invigorate vitality to the rural village.



4. Technological and Development, Education and Promotion

- 1) Establishing organic research and technology service team
- 2) Holding organic farmer professional training
- 3) Conducting research on organic crops and key technology
- 4) Developing new technology and farming material



Growth on fields after the organic fields have undergone on-site fertilization diagnosis and recommended with fertilization



5. Provide counseling on processing to extend the industry value chain





6. Strengthen certification management and expand organic marketing channel





(1) Counseling for Organic Farmer Market



有機農民市集秉持四大原則：

1. 扶植弱勢小農

協助小農建立新的銷售管道。

2.

節提鮮



(2) Counseling on the establishment of organic farm e-shops and counseling restaurants to join the "Organic Gourmet Food."

有機電子商城 ORGANIC ESHOP

首頁 | 有機雲端入口 | 有機農業全球資訊網 | 有機農夫市集 | 有機農場整合系統 | 有機之心·美食餐廳 | 好书推薦

有機健康

- 有機蔬菜農場
- 有機水果農場
- 有機茶、咖啡農場
- 有機米、五穀雜糧
- 有機花草農場
- 休閒教育體驗農場
- 有機加工、分裝及流通業者

嚴選有機蔬菜農場

- 九九峰有機農場：有機蔬果
- 純青農場：有機轉型期蔬菜
- 翩翩有機農場：有機蔬果
- 參龍有機農場：有機蔬菜
- 尚麻吉有機農場：有機轉型期南瓜
- 雅歌園教育農園：有機轉型期蔬菜

嚴選有機水果農場

- 鳳禾有機農場：有機轉型期水果
- 安安有機農場：有機蔬菜水果
- 小小自然農場：有機蔬果
- 農春鎮農場：有機蔬果

有機紅龍果(B級)

- 品名：有機紅龍果(B級)
- 售價：...
- 規格：...
- 售期：6月~10月

有機蘆筍

- 品名：有機蘆筍
- 售價：請電洽農場(聯絡人：0937-756066)
- 規格：...
- 售期：4月~11月

有機資訊網會員專區

2000年·2001年·2002年·2003年·2004年·2005年·2006年·2007年·2008年·2009年·2010年·2011年·2012年·2013年·2014年·2015年·2016年·2017年·2018年·2019年·2020年·2021年·2022年·2023年·2024年·2025年·2026年·2027年·2028年·2029年·2030年·2031年·2032年·2033年·2034年·2035年·2036年·2037年·2038年·2039年·2040年·2041年·2042年·2043年·2044年·2045年·2046年·2047年·2048年·2049年·2050年·2051年·2052年·2053年·2054年·2055年·2056年·2057年·2058年·2059年·2060年·2061年·2062年·2063年·2064年·2065年·2066年·2067年·2068年·2069年·2070年·2071年·2072年·2073年·2074年·2075年·2076年·2077年·2078年·2079年·2080年·2081年·2082年·2083年·2084年·2085年·2086年·2087年·2088年·2089年·2090年·2091年·2092年·2093年·2094年·2095年·2096年·2097年·2098年·2099年·2100年

<http://eshop.organic.org.tw/supergood/front/bin/home.phtml>

The Result



Development Status of Taiwan's Organic Agriculture

Beginning

- 1996 Taiwan started promoting organic cultivation
- **2007** the land of promotion reached **2,013** hectares and the number of organic farmers was **936**.

Law

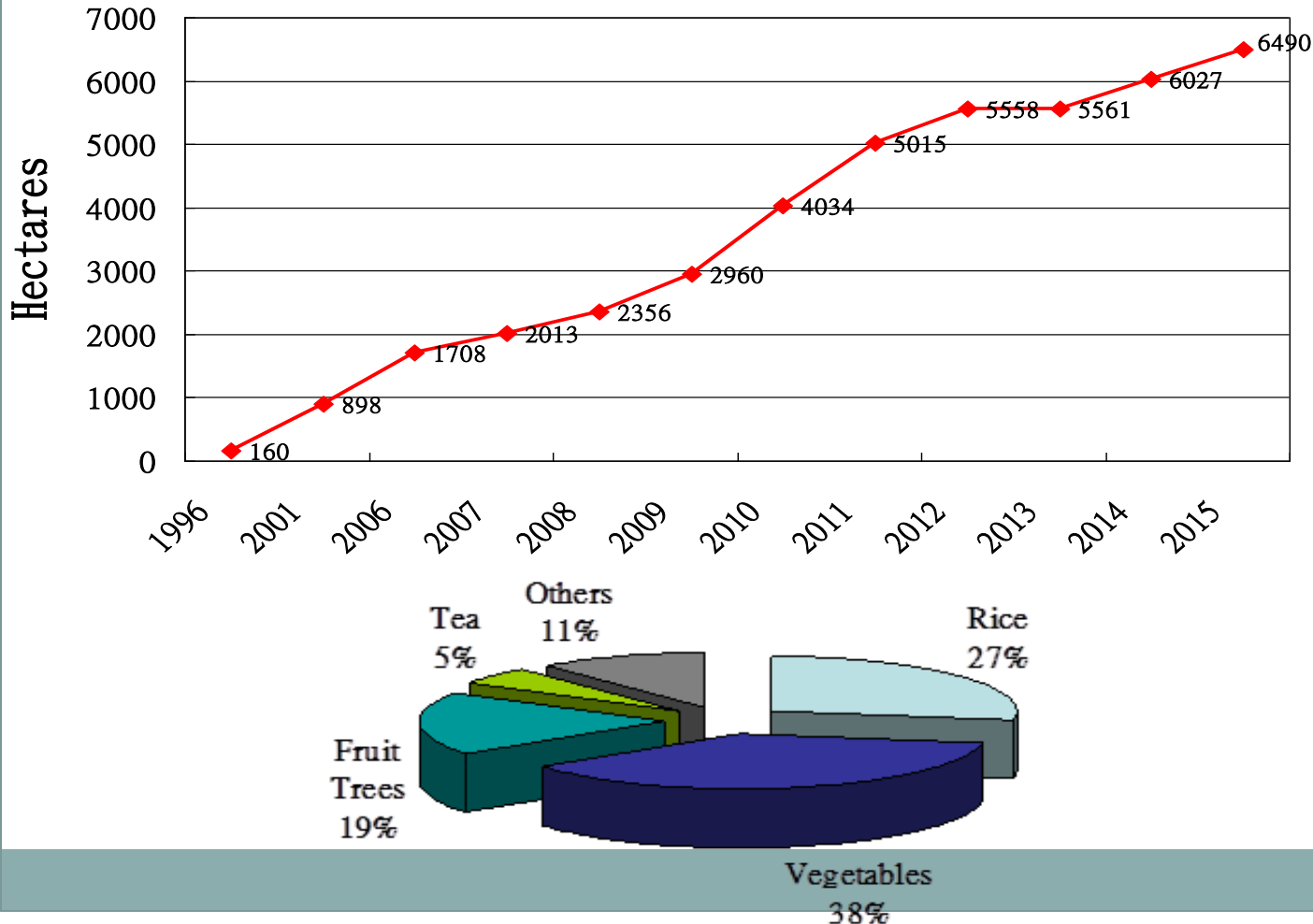
- 2007 the “Agricultural Production and Certification Act” was official implemented to administer organic agricultural products.

Program

- 2008 the Executive Yuan approved the “Quality Agriculture Development Program ” to include organic agriculture as the main appeal in healthy agricultural policy, and set the goal of multiplying the land in 4 years.
- 2012 The Government incorporated “the Golden Decade -LOHAS Agriculture” to continue promoting.

- At the end of **2015** a total of **6,490** hectares of land have passed organic certification and the number of certified farmers is **2,598** with an average scale of 2.5 hectares. There are 360 organic process and distribution companies.

Taiwan's Certified Land for Organic Agricultural Products Over the Years





Conclusion



- Taiwan has island ecology with a dense population in a small land area that two thirds of which is mountainous terrain, as well as an uneven distribution of rainfall by region and season.
- In addition, the heavy burden on the environment caused by economic development has been comparably higher than in other countries.
- Regarding national land use, forward-looking and holistic thinking is needed, including careful consideration of the fragile nature of the island ecosystem that is easily damaged but difficult to repair.

The End.

THANK YOU FOR LISTENING