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Food Security in Taiwan under WTO

In order to understand what policies Taiwan should adopt to improve the agricultural security of the small farmer, it is important to understand the make-up of the country. It is also important to understand the challenges that Taiwan and the world face. Taiwan is an island in East Asia which has a very high density rate. Taiwan has traditionally had a very self-sufficient agricultural tradition, but in this crowded society, the simple agricultural system is diminishing. In recent years, the worldwide economy has been developing and globalizing rapidly, and of course, Taiwan is no exception. Because of this, the demand for food is increasing. Since Taiwan joined the World Trade Organization (WTO) in 2002, January 1, things have changed even more. The labor force plays a very important role in maintaining the agricultural industry in Taiwan. Through the changes that are occurring in the industry, the labor force must further educate themselves and develop their skills by learning the new generation technology and methods. Rice is the main crop in Taiwan. To increase rice farming and rice production, it is important that farmers and government cooperate. Imported crops and products are appearing everywhere in the market.. Comparatively, the domestic crops are harder to sell. As competition increases, crop prices and farmers' incomes decrease. Some farmers even lose their jobs. There are three ways that the government can and should fix these problems. First, Taiwan can produce biofuel by improving their recycling policies and techniques. Recycling the waste can produce fertilizer and increase the productivity of Taiwan's farmland. Second, the government should provide a complete social security program. It will provide stability to farmers and their families. This program is especially important for the senior citizens. Government provided social security allowance and retirement benefits are essential. Health care insurance should also cover all of the medical expenses. Third, continuing education of our farmers is essential, especially for the newest generation of farmers in Taiwan. It is essential that this young group understands the tradition of Taiwan's agriculture and realizes the industry needs their contributions and support. Promoting agricultural development includes educating the farmers and incorporating technological advances in the scientific community. Educating the older generation of farmers about new technology can also let them stay in-step with the tendencies of the market. For the government and citizens to surmount these challenges will not be an easy job. However, the fate of the country and the world's food security depends on it.

Taiwan is located in Eastern Asia. It's an island approximately 160 kilometers southeastern between Taiwan Strait from Mainland China and South of Japan. The population of Taiwan is around 23 million spread across a total land area of 35,980 km² with a population density of 635 people per km². Although only about one-quarter of Taiwan's land area is arable, virtually all farmland is intensely cultivated, with some areas suitable for two and even three crops a year. Taiwan's main crops are rice, sugarcane, fruit, vegetables, and high-mountain tea. Taiwan's total employment in 2007 was 10,294,000 people. Agriculture employment was 543,000 people with 19%. The average number of people in farm families in 2006 was 3.82 with two parents and two children. Rice is their major food staple. Education through middle school has been compulsory since 1968. In 2006, the average of farm families' income was \$28,520 USD, and the non-farm family income was \$35,458 USD. Average tillable land area per farming household in 2005 was 0.72 hectares.

As economies of emerging countries develop rapidly, the global food demand increases. The global climate anomalies that have occurred in recent years have increased the instability of food production. This has resulted in decreased exportation of grain among the major grain producing nations. Also, rising oil prices have caused the promotion of grain crops as energy substitutes in the form of biofuel. This raises the price of grain and decreases the amount available for human consumption. All of these factors

are contributing to the international food crisis. In an effort to combat this growing crisis, Taiwan's food policy should continue to be strengthened, and Taiwan must be prepared to cope with the global food supply shortage and the crisis of rising prices. Of equal importance is enhancing the competitiveness of domestic rice.

The labor force is an important factor of production and resources in agriculture. However, with the development of new technology, mechanization is gradually replacing human labor, resulting in fewer jobs. The agricultural sector is decreasing in number compared to industrial and service sectors. In 1980, agriculture rose to 20% of the industrial labor force. In 2005, agriculture comprised only 6%. In recent years, due to Taiwan's membership in the WTO, the agricultural sector labor force has experienced many changes. In an effort to maintain the vitality of the agricultural employment sector, Taiwan has promoted sustainable agricultural development through attention to human resources training and development.

Rice is Taiwan's major cash crop and food source. The rice industry is the most important industry in Taiwan's agriculture sector. The value of production, land, labor and water resources are all important. Over the past few decades, the government has protected the rice industry to maintain the stable development of aiming towards self-sufficiency. But in 2002, Taiwan joined the WTO and opened the rice market. Different kinds of rice are being imported into Taiwan. It brings new options for consumers, but has also impacted the domestic rice industry and provided it with new challenges. However, the Taiwanese government has adopted relevant measures to enhance competitiveness. Farmers and industry have also adjusted in order to ensure that the damage from the opening of the rice market is minimized.

Since Taiwan joined the WTO, the average number of people employed in the agriculture sector has reduced annually by 29,000, which is the only decrease employment in the three major industries (agriculture, industry, and services). The reasons for the reduction are varied. One reason is that there are a disproportionate number of farmers in the older generation, and they are dying off. The youth are choosing to immigrate to the cities and without the elder farmers, strong laborers are not available to manage the farms. Also under the outer face of liberalization and digitalization of the industry, the employment opportunities in agriculture are fewer. Workers in the agricultural sector do not have sufficient employment, welfare, or retirement benefits to ensure their family's economic security. Understandably, the youth of Taiwan find more opportunities in the cities.

Taiwan's government should implement the three following public policy initiatives so that farmers can improve their situation in many productive ways which will help their agriculture development and economy. One important strategy is to strengthen the use of farmland and other natural resources, such as the development of land-based service businesses in rural areas to create more jobs for farmers. A second strategy is to build a welfare program for farmers which will give them enough supplies and ensure elderly farmers a respectable and comfortable life after retirement. The third strategy is to educate young farmers by establishing agricultural training colleges which will teach them management skills with the implementation of agricultural technology.

Taiwan has recently attempted the implementation of biomass crops. Biomass crops are used for energy rather than for human consumption. The utilization of biomass energy is expected to raise self-sufficiency of small farmers in Taiwan. The use of idle farmland to plant biomass crops not only lets the farmland be utilized, it also promotes economic development. That will have an inevitably large effect regarding an area's development. Through medical progress and increased birth rates, the world population is increasing quickly, which reduces the area available for growing biomass crops. This inverse relation must be addressed. One way to address this situation would be to only use the non-consumable part of the crop for biofuel. Producing energy by using the rejects may not only solve the problem of garbage disposal, but may also produce energy. Simultaneously, it can also reduce the carbon dioxide output. The reject energy in Taiwan would be plentiful because of the high population density,

but recycling in Taiwan still needs some improvement. If approximately 70% of the waste from every household were recycled, and transferred to make a liquid state fertilizer and a solid state organic matter fertilizer, it would help to improve the fertility of the cultivated land. Also it would improve enormously the beauty and purity of the farming community environment. Therefore, the government should strengthen policies to implement recycling, improve the output of the recycled material.

Taiwan's social security program for farmers is very important because most of the farmers in Taiwan are elderly. The government provides senior citizen farmers a social security allowance. One important element of Taiwan's social security policy is that every five years, the allowance adjusts for inflation. This provides more security to Taiwan's senior citizen farmers. The government also provides stipends for the peasant family's children which helps low income families to give proper care and education to every child. The most important element of Taiwan's social benefit system for farmers is the health insurance program. The medical services are incorporated into the National Health Insurance program. Birth, disease, injury, disability, funeral allowance, or other health-related expenses are all included. Taiwan must continue to support and expand this system as the population increases, so all farmers can ensure a stable life for themselves and their families while staying in the agricultural industry. Their hard and essential work should be recognized and rewarded in Taiwanese society. They should be entitled to aid from the government so they don't have to worry about the security of their industry and the security of their family. If they trust that the government has their interests in mind, they will cultivate industriously for their career and their country.

Educating the farmers will lay a stable foundation for the future. The purpose of education is to develop a more versatile and prepared younger generation in the rural part of Taiwan. Education will enhance their desire to continue the farming tradition, and will promote the continuing development of agriculture. Country counseling and outreach should work with elementary, middle, and high schools students to teach them about their heritage. Through education, the youth of Taiwan will learn to appreciate and preserve their local culture, language, lifestyle, and agriculture. This outreach and sharing of knowledge will inspire youth to seek careers in agriculture who in turn will find ways to incorporate technology into agriculture. Also, Taiwan must educate older farmers to adapt to today's technology by taking classes provided by the government at no cost to the farmers. They also must be educated about healthy lifestyles, nutrition, and health care to promote physical and moral integrity. The government agencies must train the farmers to hold the post of the volunteers, serve the countryside residents, provide information about village life, and seek answers for their own questions. Raising the farmers' level of responsibility can improve the agricultural industry internationally. Farmers can use their skills to become more inquisitive about the problems they face in agriculture and they will have the confidence to solve these problems through research and international networking.

After extensive research, I believe that with government assistance, Taiwan is capable of moving their agricultural industry to a new level. Bringing the youth of Taiwan into agricultural occupations will bring innovative ideas and the use of new technology. The government must implement proper policies and assistance for farmers, which should include education and public assistance. Government assistance rather than intervention will allow farmers to keep their competitive power. To face the new pressure of competition, the farmers also have to help themselves by facing the problem. Even if the congenital condition is bad, placing the responsibility on the farmers will provide them with the necessary level of integrity to pursue classes offered by the government and to implement their ideas. It will also provide them the foundation to better prepare the youth who will seek their advice as they seek careers in agriculture. The attitude to transform must come from the bottom as agricultural laborers learn to infuse traditional farming methods with current methods which better utilize technology. The youth will become an integral factor in these changes. Without government educational support and public assistance, Taiwan will continue falling into the WTO storm.

In Taiwan, some people regard agriculture as a liability rather than an asset. This negatively impacts the perception of the profession of farming. In fact, agricultural development is essential to Taiwan's food security, social security, countryside employment, effective resource use and preservation of the environment. Although agriculture transforms along with the economic structure, ecological and societal values have difficulty keeping up. Any country with a developing economy cannot neglect agriculture's importance. After Taiwan joined the WTO, agriculture faced a great deal of pressure from competition. The organizational structure must be remade to adjust to the new environment. Taiwan's agriculture has remarkable leadership, which includes the implementation of new ideas and methods. Taiwan's current policies are proving to be successful. They must ensure that they do not deviate from these policies and that they keep moving forward so they can be dispersed among an ever-growing population. Any questions might have multiple answers; any policy also has many kinds of options and many risks. The way to discover the future of Taiwan's agricultural development and condense all of its strengths to achieve this goal will be difficult. It will be the responsibility of everyone who cares about agriculture.

Bibliography

“Statistic” Council of Agriculture, Executive Yuan, R.O.C. 09 Sep 2009
<http://eng.coa.gov.tw/list.php?catid=8821>>

“Relation between Taiwan and the US” American Institute in Taiwan 13 Sep 2009
<http://www.ait.org.tw/zh/economics/>>

“Measures and Strategies in Response to the WTO Impact on Taiwan's Agriculture”
Council of Agriculture Executive Yuan R.O.C 13 Sep 2009
http://eng.coa.gov.tw/content_print.php?catid=9123>

“Guidelines of the New Agricultural Policies”
Council of Agriculture Executive Yuan R.O.C 16 Sep 2009
http://eng.coa.gov.tw/htmlarea_file/web_articles/coa/10154/970730-Guidelines%20of%20Agricultural%20Policies.ppt>

“Taiwan-Fukien Area Farmer Health Insurance and Allowance”
Council of Agriculture Executive Yuan R.O.C 16 Sep 2009
http://eng.coa.gov.tw/htmlarea_file/web_articles/coa/10055/288.pdf>

“Taiwanese Journal of WTO Studies 2009 Volume XII Contents” Taiwan WTO Website 18 Sep 2009
<http://www.wtostudy.nccu.edu.tw/english/epublication/ewtojn12.htm>>

“Old-Age Farmers Welfare Allowance Program Id-Age Farmers Welfare Allowance Program”
Bureau of Labor Insurance Website 18 Sep 2009
<http://www.bli.gov.tw/en/sub.aspx?a=OIh29p8B3CU%3D>>