

Macroeconomic Situation and Outlook

The Taiwanese economy registered a dismal negative 1.91 percent growth of real GDP in 2001, the lowest and first negative economic growth in the last 50 years. While the economy scored a healthy 5.86 percent growth in 2000, 2001 turned out to be a nightmare. The downward diving trend started in the first quarter of 2001 with the economic growth rate being only 0.91 percent. The economy further receded for a negative 2.35 percent growth in the second quarter, but the worst is yet to come. The third quarter posted a record-low negative 4.21 percent economic growth. The speed of economic recession slowed down in the fourth quarter with real GDP decreasing by 1.87 percent.

The recession has been triggered by the slumping world economy, particularly in the IT industry. Unemployment rates rose from 2.99 percent in 2000 to 4.57 percent in 2001 and curbed private consumption, which comprised about 60 percent of GDP. Private investment also posted a huge decline of negative 26.73 percent in 2001. The September 11 event further harmed the economy and accelerated the downward sliding trend. As the U.S. and world economy are expected to recover moderately, entering WTO in January 2002 will stimulate export. The lower tariff and keen competition of imports are expected to stimulate consumption. As big investment projects on the high-speed railway project and telecommunication industry continue, the Taiwanese economy is projected to grow by 3.08 percent in 2002.

However, because the unemployment rate will remain high, the real estate market will stay slumping, and public and private sector wages will remain frozen, private consumption is unlikely to get back to its previous level soon. Considering the fiscal budget deficit, government consumption is projected to grow by negative 1 percent during the period from 2002 to 2006. The admittance to WTO of both Taiwan and China has accelerated industry in Taiwan to move their production lines to China to take advantage of the low labor costs and huge product market. As a result, investment in Taiwan will not increase sharply in the next 5 years. It is projected to grow only by 0.85 percent in 2002 and remain stable at around 3 percent from 2003 to 2006. While the world economy is expected to recover moderately, trade growth remains low. The growth rate of real export goods and service exports of Chinese Taipei will be 5.71 percent in 2002 and remain stable at around 8 percent from 2003 to 2006. On the other hand, imports are projected to increase sharply in the short run due because of accession to the WTO. It will increase by 7.21 percent in 2002 and then the growth rate will slowly decrease to around 4.7 percent in 2006.

Though the New Taiwan Dollar depreciated by 8.26 percent to the U.S. dollar, the weak demand and low agricultural and raw material prices suppressed export and wholesale prices, which are down by 0.18 percent and 1.33 percent respectively. It is expected to appreciate slowly from 34.33 in 2002 to 32.11 in 2006. Imports and consumer prices also declined by 0.96 percent and 0.01 percent, respectively, in 2001. As Taiwan enters WTO in January 2002, the domestic market

will gradually open to manufacturers abroad. The WPI is projected to decrease by 0.73 percent in 2002 and then fluctuate around 1.5 percent growth from 2003 to 2006. The CPI will increase by 0.67 percent in 2002, then rise to 1.52 percent growth in 2003 and slowly decrease to 1.2 percent in 2006.

Overall, the economic slowdown certainly posts a challenge for the new government. 2002 appears to be a year for slow economic recovery. The government needs to cope with the high unemployment problem and concentrate on strengthening the competitiveness of the economy.

Food Prices and Consumption

In 2000, food and beverage prices in Chinese Taipei decreased slightly (0.98 percent), while the overall consumer price dropped 0.01 percent. The decrease was mainly the result of depressed demand from the weakened economy. Prices for rice increased about 1.05 percent. Meat prices decreased 3.17 percent after a 7 percent decrease in the previous year. Prices for fresh seafood also decreased 5.21 percent while prices for processed seafood remained unchanged. Prices for prepared food dropped slightly (0.8 percent), while prices for food-away-from-home rose 0.3 percent in 2001.

As the economy moved toward a mild recovery, food and beverage prices increased by 1.37 percent while the CPI decreased 0.09 percent during the first quarter of 2002. In 2002, the CPI is expected to increase slightly by 0.67 percent. Food prices are expected to be slightly lower in 2001 due to the cheaper imported food products after entry into WTO.

The expenditure on food and beverages was about 20 percent of total municipal consumption in 2001. This is lower than in the previous year since both food prices and demand are weakened by the overall economic downturn. Daily per capita calorie intake has remained stable in recent years at approximately 3,000 calories per capita. Per capita consumption of rice continues to decline from 65.9 kilograms in 1990 to 54.9 kilograms in 1999. Meanwhile, per capita consumption of meat increased from 62.9 to 78.1 kilograms. Per capita consumption of dairy products increased from 14.9 in 1990 to 23.0 kilograms in 1999. Per capita fruit consumption increased from 131.5 kilograms in 1990 to 142.2 kilograms in 1999. Per capita vegetable consumption also increased sharply from 93.3 kilograms in 1990 to 124.5 kilograms in 1999.

Food Processing and Marketing

The total value of food processing production in 2001 is NT\$ 430 billion, a 2.1 percent decrease from 2000. More than half the product items experienced a recession, with the exception of dairy and non-alcoholic beverages. The total export values of processed food increased slightly by 0.4 percent. The recession from increased competition of

foreign imports is not as significant as in the previous year.

Total sales of frozen seafood went down 14 percent because of the recession and competition from the Southeast Asian and Chinese manufacturers. However, the prospects for frozen food will be improved after the accession to the WTO because it will be easier for factories to obtain cheaper materials. The increases in food-away-from-home consumption and food chain-stores will also foster the development of this industry. Cooking oil production dropped more than 20 percent. The feed industry continued to suffer a 6.7 percent decline from the previous year because of shrinking demand from the hog and poultry industries. Under this market environment, the feed industry is adopting vertical integration strategies to increase their profit as well as to gain export market share.

Due to the recession in 2001, the market growth in non-alcoholic beverages has also been sluggish, in particular juice and carbonated drinks, but demand for tea, coffee, and bottled water has increased steadily. The industry is facing tough competition from imported products. New product lines and quality improvement are the key elements in scaling up their market shares.

Agricultural Production and Trade

The crop production condition was heavily influenced by the abnormal weather conditions and low prices in 2001. Due to the blast disease and enlargement of the set-aside program, rice production decreased 9.56 percent. The total harvest is the lowest since WWII. Most fruit production increased, while vegetable production went down because of heavy floods from typhoons. Floral crops were struck by the economic downturn and weakened export market. Therefore, overall growth in the crop sector is negative.

Hog production regained its momentum 4 years after the foot-and-mouth disease (FMD) outbreak. The government bought out many small, inefficient hog farms so that production increased 1.87 percent in 2001 and the average operation size was enlarged. However, development in other livestock sectors has been bleaker. Poultry production decreased 5 percent in response to the WTO accession. Lamb and milk production also declined by 8 and 3 percent, respectively.

The fishery sector experienced another recession in 2001. Far-sea fishery accounts for 50 percent of the total value of fishery production. The harvest in far-sea fishery decreased 13 percent in 2001 as the result of a 30 percent reduction in squid jigging and failure to reach a cooperative agreement with Argentina. However, production of inland aquaculture recovered 2.75 percent from the previous year, while marine culture showed an increase of 11.43 percent.

Agricultural and food imports declined 9.76 percent in 2001. The import values of fruits, meat, and seafood products decreased 13.9, 21.9, and 15.7 percent, respectively. Cereals and oilseed imports remained the same as last year while sugar and dairy increased 11.5 and 6.9 percent, respectively. During the first month of 2002, the import value again dropped 11.3 percent from the same period last year. The import is expected to increase as the economy recovers in

2002 and the WTO market access commitment is implemented.

The total value of agricultural and food exports also decreased 7.6 percent in 2001. Seafood and meat are the two major export items. Their value of exports in 2001 decreased 5.7 and 10.4 percent, respectively. Both of them are at record low levels. During the first month of 2002, seafood exports increased 22.8 percent in value, while the exports of meat and crops also increased 2.4 and 24.6 percent, respectively. The export prospect is getting better in the near future as the global economy recovers.

Food and Agricultural Policy

After 12 years of negotiation, Taiwan finally entered WTO on January 1, 2002, to become the 144th member while China formally became a member on December 11, 2001. Taiwan promised that, after joining the WTO, tariffs on agricultural products would fall from the current 20 percent to 13 percent. Local farmers and the agricultural industry have been brought to the crossroads and must choose to either stay in its old rut or undertake fundamental changes.

Over the past few years, the Council of Agriculture (COA) has established a number of measures to maintain or strengthen the competitiveness of domestic products, such as providing cash incentives to encourage rice farmers to switch to other crops or let their fields lie fallow, forming a strategic alliance or joint operation system in the livestock industry, and so forth. Nevertheless, COA predicts that more than 20,000 farmers will lose their farm jobs. To deal with this, a series of training programs for farmers employed in growing rice, sugarcane, or tobacco has been organized by the COA. The former chairman promoted strategic alliances and a knowledge-based economy as two main vehicles to transform the traditional agricultural sector into a service-oriented industry. Some of the farmers have gradually transformed themselves to farming-tourism service providers. The new chairman, a former political figure in Hsinchu County, also set as his top priority helping farmers cope with WTO participation by increasing the market competitiveness of native products in local and export markets.

While Taiwan's accession to the WTO may hurt its agricultural sector, it will bring cheaper and more diverse products for consumers. For example, the President Chain Store Corp. (the largest convenience store operator of the island and the third largest 7-Eleven franchise in the world) is planning to introduce at least 100 new items from abroad in local 7-Eleven convenience stores. The government will also accelerate talks on free-trade agreements with other WTO members such as New Zealand, Singapore, Japan, and the United States. Such arrangements will help eliminate trade barriers for Taiwan's products and services and facilitate the global expansion of businesses.

Food Safety

FOOD DISTRIBUTION SYSTEM

In Chinese Taipei, the Agricultural Products Market Transaction Law was enacted in 1981 for the purpose of ensuring stable food supply and

demand through smooth transaction and marketing of agricultural products. The law prescribes that farmers'/fishermen's co-ops, local governments, or an entity jointly owned by the former two eligible agencies are market establishers and owners of the wholesale markets.

There are about 160 agricultural wholesale markets in Chinese Taipei, most of which are set up in the producing areas mainly to serve farmers. Half of the markets are jointly sponsored by the local government and farmers'/fishermen's associations, and the other half are operated by the producers' co-ops. The average share of total transactions in the wholesale markets in comparison with the total consumption quantities is about 65 percent for livestock, 85 percent for fruits/vegetables, and 80 percent for fishery products.

As for conducting transactions, markets in the producing areas employ direct price negotiation while markets in the consuming areas prefer auctions in general. About 20 fruit and vegetable markets adopt a mixed system where direct price negotiations are allowed at the beginning of a transaction and then all commodities will be sold by auctions. A certain percentage of sales proceeds from the suppliers are collected as a market fee. The maximum rate is 5 percent for vegetables and fruits, 2.5 percent for fish, and 1.5 percent for livestock. More than 70 percent of vegetables and 60 percent of fruits in the Taipei Metropolitan wholesale market are sold by auctions.

About 20 percent of rice produced is purchased by the government, and 75 percent is circulated by the local rice millers (also the wholesalers). Most of the government rice is for export and feed uses. The price gap between producers and retailers is about 52-55 percent and has remained stable in recent years. The farmers' co-ops have become the one of the two major shippers of vegetables and the recent trend shows that they play a very critical role in price formulation in metropolitan areas. Because of competition between these co-ops and traditional shippers, the price margin has become more stable and reasonable for consumers.

More than US\$10 billion has been invested in the marketing system, including assembly plants, wholesale markets, and retail markets, and also in processing equipment for facilities such as flour mills, meatpacking plants, bakeries, cold storage, factories for manufacturing breakfast foods, as well as transporting equipment. As of today, the demands of more than 10 million consumers largely determine what the marketing system supplies. Modern food chains and supermarkets compete keenly with the traditional retail markets. The traditional role played by the shippers has been gradually taken over by the farmers' and fishermen's co-ops and supermarkets. Another potentially influential factor is the legislation passed by government to ensure food safety for the consumers. However, implementation has lagged behind, and no government agency is taking it seriously in protecting consumers. Therefore, the governing of food sanitation has become a major problem in modernizing the marketing system.

FOODBORNE ILLNESS

According to the statistics published by the Department of Health (DOH), foodborne illness has increased substantially during the last 5

years. About 30 percent are caused by unknown sources. The major known source is *Vibrio parahaemolyticus* through take-out lunch boxes and seafood. Due to the rapid increase in demand for ready-made food and restaurants, the proportion of food from eating outside the home is much higher than that of home cooking. There is no estimate or study on the cost of the foodborne illness to the society.

The annual statistics on food sanitation inspection show that the number of disqualified cases each year is around 3,000 cases out of 500,000-600,000 cases checked and 38,000 tested. The disqualified rate is about 2-3 percent. The main source of disqualification is the coliform contained in lunch boxes, prepared food, ice products, uncarbonated drinks, and bottled water. This may partially explain the increasing food poisoning cases from ready-made food.

FOOD SAFETY SYSTEM

Currently, the two major food certification systems in Chinese Taipei are the GMP (Good Manufacturing Practices) and GHP (Good Hygiene Practices). Both are certified by the DOH. So far, more than 350 factories have received GMP accreditation on more than 3,500 items. The Law Governing Food Sanitation, promulgated since 1975, has been amended twice recently. The current version was promulgated on February 9, 2000. Chapter II describes the control of food sanitation and Chapter III, the control of food labeling and advertisement.

In Article 20 of Chapter IV (Sanitary Control in the Food Industry), it requires that *"the operation sites, facilities or quality assurance system used by a food business for manufacturing, processing, preparing, packaging, transporting, storing, and selling foods or food additives shall meet the food good hygienic practices (i.e., GHP) code prescribed by the central competent authority."* In addition, *"the food business belongs to a designated category designated by the central competent authority in a public notice, the food safety control system prescribed by the central competent authority shall also be observed."* Therefore, the GHP has become mandatory but the HACCP has not. Right now, the DOH has requested the lunchbox businesses and large restaurants to comply with the HACCP on a voluntary basis. The frozen seafood union also adopted the HACCP system voluntarily because of their export purposes. The DOH wishes to enforce the HACCP within the next 4 to 5 years by sponsoring many training courses, but progress has been very sluggish.

The Council of Agriculture also initiated a CAS (Chinese Agricultural Standards) in 1989 with the aim to promote the quality of processed food products. Meat products are certified by the National Animal Industry Foundation, and non-meat products are certified by the Food Industry Research and Development Institute. Both are non-profit organizations sponsored by the COA. The funding of the CAS system mainly comes from the COA. So far, more than 186 food processors have received certification for more than 3,000 items. Because CAS is a local certification system, it will not meet the future trade development and consumers' demand for food safety. COA started to promote the HACCP 5 years ago. It is hoped that those factories that adopted the CAS will eventually upgrade to

the HACCP system.

The COA also initiated some safety logos such as “Good Agricultural Practice (GAP)” for pesticide-safe and organic vegetables and “Hai Yan” for frozen seafood to boost consumers’ confidence on domestic products. All of them are based on voluntary participation and therefore similar to brand labeling instead of food safety certifications. The officials in the DOH expressed their concerns that too many labeling schemes will be confusing for the consumers and may not be useful to gain their confidence.

INCENTIVE, ACCOUNTABILITY, AND OVERSIGHT

According to Abadouch (2000), it is recognized worldwide that the development of food safety systems like HACCP and their implementation is the responsibility of the food industry while government inspection agencies are responsible for monitoring and assessing their proper implementation. In Chinese Taipei, it applies to the case of the frozen seafood industry. It exports a considerable amount of processed and frozen products to Japan and the United States and therefore must meet the requirement of their clients. The DOH also selected a number of food industries, including lunchbox, restaurant, dairy, and canned foods, as the prime target for establishing the HACCP system. Therefore, both the development and monitoring are conducted by the government instead of forming a partnership between industry and government. The government officials wish to start with the enforcement of GHP and then transform it into the HACCP-based system using GHP as a stepping stone. After 4 to 5 years of adaptation, the HACCP will eventually be added into the Law Governing Food Sanitation so that compliance on the part of industry can be enforced.

As for the GMP system, a new system was proposed in 2000 in which private involvement would be increased. The government and private sectors (including the accreditation parties and representatives from consumers’ groups and the food industry) will formulate a partnership in the accreditation and technical development. The government will focus more on on-site inspection and monitoring.

According to an interview with the CEO of a food company, the adoption of HACCP in Chinese Taipei is very slow because many food companies are mainly producing for domestic consumers, and the HACCP would crowd out many of the small and medium-size businesses in the market. Therefore, there is a strong resistance from the industry to adopting this system. Furthermore, the government does not have enough manpower to enforce or monitor the implementation of the law. The only way to speed up this adoption process, as suggested by the interviewee, is to request the supermarkets and all the food outlet stores in the downstream to sell only products with the certification. However, consumer awareness and support are critical to the success of this action. Right now, the government is not doing enough to educate consumers, and there is no strong consumers’ organization to lobby for this action.

As for the inspection, to encourage private testing institutions to participate in governmental affairs, the Bureau of Standard Metrology and Inspection (BSMI) designates by contract well-equipped, independ-

ent, and impartial testing institutions to carry out inspection on behalf of the BSMI. The BSMI conducts assessments of designated institutions at least once every 6 months. To meet businesses’ trade needs, the BSMI provides a service called “Contracted Inspection” to a buyer or seller who wishes to have a commodity inspected and certified in accordance with the specifications of a contract. Contracted inspection is available for all product types. It is conducted upon the request of a buyer, seller, or any other person who requires verification of the quality of a commodity. The seller applies for a contracted inspection by submitting a purchase order, letter of credit, or other relevant documents to the local inspection agency. After the application is reviewed and accepted, the BSMI proceeds with the inspection. In consideration of the nature of the products, contracted inspection is conducted in one of two ways: a) by inspecting samples of the finished products and b) by inspecting production, which includes inspection of the production plan, raw materials, in-process products, and other relevant records.

POLICIES AND REGULATIONS

The COA has established a sanitation and safety inspection system for agricultural products that includes rapid inspection methods for food safety, the collection of sanitation and safety inspection data for domestic and imported products, intensified management of drugs used on animals and animal feeds, and the control of residual pesticides on vegetables and fruits. A monitoring system for aquacultural products is also being established to reinforce sample testing and enhance the analyzing capability of fishery products inspection and service centers, improve pond management training of fishermen, reduce the use of drugs, and ensure product quality and wholesomeness.

As for the pesticide residues in processed food, the current limits were amended on March 30, 2000, by the DOH and posted on the DOH website. They apply to rice, grains, tea, fruits and vegetables, and all animal products. Since July 16, 2000, the BSMI has been inspecting imported fruits and vegetables for pesticide residues in accordance with the limits provided by the DOH. Testing is normally completed within 3 working days. If a sample is found to have pesticide residues that exceed the relevant limits, the next five shipments from the same origin will be subject to testing.

In recent years, the flow of commodities across borders has often been obstructed due to the need to comply with different technical regulations or conformity assessment procedures adopted by different countries. To reduce the impact of these measures on trade and prevent repeated inspection, the BSMI actively seeks cooperation with renowned testing and certification bodies of other countries. Via such cooperation, the BSMI hopes to assist domestic manufacturers in obtaining product marks of the importing countries and to enhance the testing capability of the BSMI.

Furthermore, to unite consumers’ efforts to protect their own rights, the BSMI has enacted the “Points of Operation for Consumers Assisting with the Monitoring of Illegal Commodities.” In March 1991, the BSMI launched the program of “Monitoring-Consumer-Goods Volunteers.” Volunteers selected from various districts help

monitor illegal or inferior commodities on the market. In order to offer a proper channel for consumers to file complaints, the BSMT has established a Consumer Complaint Center to help resolve conflicts between manufacturers and consumers.

The Bureau of Animal and Plant Health Inspection and Quarantine (BAPHIQ), founded in 1998, is the inquiry agency of Chinese Taipei for the SPS agreement under the WTO. To promote the healthy development of the animal husbandry industry, the BAPHIQ has established an integrated disease prevention system, and oversees production and use of veterinary medication. As for the imported animal products, BAPHIQ will send a delegation to the origin country to inspect the designated establishments annually. If the quarantine requirement is not fulfilled, then the BAPHIQ will suspend shipments immediately.

The Salmonellosis is the largest cause of infection and death in the hog industry historically. An outbreak of foot-and-mouth disease occurred in 1997 and more than 3.8 million hogs were incinerated. There were only five cases in 2000, and the disease seems to be under control. As for poultry, cholera, New Castle disease, and bursal disease are the main causes of infection and death.

FOOD SAFETY INFORMATION

Article 17 of the Law Governing Food Sanitation requires that *“prepackaged foods or food additives shall conspicuously indicate in Chinese and common symbols the following material facts on the container or packaging:*

- *product name;*
- *name, weight, volume, or quantity of the content or, in the case of a mixture of two or more ingredients, each of the ingredients;*
- *name of food additive;*
- *name, telephone number, and address of the company; in the case of imported food, name, telephone number, and address of the responsible domestic company;*
- *expiry date; if the product is designated by the central competent authority in a public notice, the date of manufacture, shelf life, or storage instructions shall also be indicated; and*
- *other material facts designated by the central competent authority in a public notice.”*

Therefore, the consumers can obtain the nutrition content and manufacturing information from the label. However, since the information on food additives is based on their generic chemical name, it is very difficult for consumers to understand the exact components inside the packages. Also, some manufacturers may change the label of their additives to avoid the government regulation. Therefore, inspection and enforcement are the main problems, and the law itself does not provide enough guarantees for the consumers.

FOOD SAFETY RESEARCH

The Bureau of Food Sanitation of the DOH has established databases of food compositions for reference in nutrition education and in food nutrition labeling. Some 200 samples of foods commonly consumed

by the population have been analyzed for 25 nutritional components. A complete and systematic list of food compositions has been established. Studies on food habits and health have also been conducted to establish data on national nutrition and needs for nutrients. Serum lipids in children, for instance, were found to be significantly associated with diet and genetic factors. Studies of commercial milk powder fortified with both calcium and iron found that children's iron bioavailability was low, and that the potential effect of such commercial products to improve iron status was questionable.

The establishment of rapid detection methods for microbes such as *Staphylococcus aureus*, *Vibrio parahaemolyticus*, and hemorrhagic *Escherichia coli* is most useful in food safety. Testing methods for the amount of lead and copper in edible oils have also been developed. The use of deoxidizer films for food packaging could prevent accidental swallowing of the small deoxidizer sachet placed in food packages by manufacturers. Crab analogs could be easily contaminated by pathogenic agents if they were not properly packaged and sold at low temperatures. Chicken legs, whether fried or heated with a microwave may develop heterocyclic amines of high carcinogenicity and mutagenicity, with their kinds and total amount increasing with increases in temperature and duration. These findings would be useful in understanding microbial contamination of foods on the market and should serve as a reference for manufacturers in the quality control of their products.

Sets of computer programs have also been developed to help food industries in developing new low-salt, low-sugar candied fruit products to ensure their safety and sanitary conditions. Functional and safety studies have been conducted on health foods and non-traditional edible plants, such as barley leaf extracts.

In the economic literature, a recent study done by Huang, Kan, and Fu (2000) shows that consumers in Chinese Taipei are willing to pay a price premium in the range of 5-10 percent on certified residue free (CRF) produce. However, there is no study on the cost of producing CRF produce, and therefore it is hard to know if this price premium is attractive enough for farmers to certify their produce.

TESTING STANDARDS

Laboratory testing of drugs, foods, and cosmetics is conducted at both the national and local levels. The National Laboratories of Foods and Drugs is responsible for national laboratory services with more emphasis on the research and development of test methods. The Laboratories, in addition to performing routine testing of all drugs and some foods, provides technical services in laboratory testing, training, and necessary manpower support according to the policies of drugs and food administration. Laboratories of municipal health departments and county/city health bureaus provide local laboratory services, primarily for testing food specimens collected on inspections for the supervision of food sanitation at the local level.

For administrative purposes, specimens from food poisoning outbreaks are analyzed and investigated to identify their causative agents. Findings are immediately submitted to health authorities for follow-up and supervision to protect the health of consumers.

Each year, based upon program needs and in consultation with administrative organizations, plans are made to systematically sample test drugs, foods, and cosmetics sold on the market to analyze and assess issues related to their quality and safety. Studies such as "survey of the aflatoxin residual in Chinese herbs," "survey of the contents of formaldehyde and sulfites in mushrooms sold on market," "survey of residual pesticides in rice," "study on the status of *Listeria monocytogenes* in ice products and their rapid testing methods," "analysis of residual streptomycin in poultry and animal meat," "study on the rapid testing methods for lactic acid bacteria," "study on the HACCP system of frozen or chilled chicken products," "study on the verotoxin-producing *E. coli* in Taiwan," and "study on the foreign bodies in the preserved fruit manufactured by mainland China" have been conducted. Findings are submitted to health authorities for regulatory reference. The Laboratories has also conducted "proficiency testing for residual pesticides" for the laboratories of county and city health bureaus, branch laboratories, and other organizations concerned.

To improve the quality of laboratory testing, a special committee for the promotion of GLP has been set up in the Laboratories to draft procedures and promote GLP to standardize laboratory testing. Operational procedures and experiences of the Laboratories are available to academic institutions and pharmaceutical industries for reference to upgrade the standards of pharmaceutical science and technology and laboratory testing. The Laboratories is trying to meet the ISO/IEC Guide 25 criteria, an internationally recognized GLP standard.

CHALLENGES AND STRATEGIES

In recent years, Chinese Taipei has been active in seeking ways to join international economic and trade organizations. With a more open market, Asia-Pacific Economic Cooperation (APEC) advocates that commercial products of all member states shall meet the international standards to promote mutual recognition. Food is one priority item.

The international standardization of laboratory testing for foods and drugs is a future trend. Experts from Australia NATA have been invited to two workshops on the assessment of laboratories to train trainers in this respect. The Laboratories will also participate in establishing an accreditation system for food and drug laboratories, hoping to upgrade the standards of domestic laboratory testing of foods and drugs to improve the sanitation and safety of foods and drugs, and to facilitate Chinese Taipei's further participation in the international community.

In pursuing the objectives of the Agreement on Technical Barrier to Trade of WTO, all local food safety certifications shall comply with relevant international standards. It is also necessary to harmonize all certifications with international ones in accordance with APEC's free trade goals by 2010. In order to prevent illegal or inferior commodities from being displayed or sold on the market, the government needs to strengthen ex-factory and import inspection, implement market surveillance and market sampling inspection, and the like. Violators will be taken to court, fined, or notified to recall and improve their products. Products which do not meet inspection requirements should be

prohibited from being displayed or sold immediately.

Currently, the government of Chinese Taipei is promoting its international cooperation program at both bilateral and multilateral levels. Bilaterally, it has concluded cooperation arrangements with 28 organizations of 21 countries. Multilaterally, active participation in APEC and WTO on issues related to standardization and conformity assessment systems is underway. It should be stressed that international harmonization and collaboration in training and assessment procedures is necessary to form the basis for mutual recognition and reduce costs to society due to duplicated efforts.

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CHINESE TAIPEI

	Units	1998	1999	2000	2001	2002 ^e	2003 ^f
FOOD CONSUMPTION PATTERNS ^a							
Per capita caloric intake	Cal/day	2974	3048	3047	3050	3053	na
From animal products	Cal/day	792	808	776	747	718	na
From vegetable products	Cal/day	2182	2240	2271	2303	2335	na
Protein	% of calories	13.21	13.05	12.73	13.30	13.50	na
Fat	% of calories	38.03	37.85	36.44	37.40	37.10	na
Carbohydrates	% of calories	48.76	49.10	50.83	49.30	49.40	na
INCOME AND FOOD PRICES							
Per capita income	US\$/capita ^b	11333	12101	12916	11820	11769	na
disposable income spent on food	Percent	19.06	18.50	18.46	18.30	18.50	na
disp. income food away from home	Percent	4.82	5.10	5.30	5.20	5.30	na
Food price index	Index 1996=100 ^c	103.49	102.97	103.13	102.12	103.14	na
General price index (CPI)	Index 1996=100 ^c	102.60	102.78	104.07	104.06	104.03	105.00
POPULATION ^d							
Total population	Million	21.9	22.0	22.2	22.3	22.4	22.5
Urban	Million	16.4	16.5	15.5	16.5	16.7	na
Non urban	Million	5.5	5.6	6.7	5.8	5.7	na
Share of population in each age group:							
0-4 years	Percent	7.05	6.82	6.99	7.16	6.14	na
5-14 years	Percent	14.91	14.61	15.19	15.79	13.78	na
15-19 years	Percent	9.07	8.78	8.80	8.82	8.18	na
20-44 years	Percent	42.62	42.60	44.37	46.21	42.41	na
45-64 years	Percent	18.09	18.74	15.62	13.02	20.59	na
65-79 years	Percent	7.05	7.17	7.61	8.08	7.45	na
80-over	Percent	1.21	1.28	1.42	1.58	1.49	na
Median age of population	years	31.20	32.00	32.10	32.20	32.30	na
Female labor force participation	Percent	45.60	46.03	46	45.97	45.94	na
LIFE EXPECTANCY AT BIRTH ^d							
Males	Years	72.1	72.2	72.6	72.4	72.5	na
Females	Years	77.9	78.1	78.3	78.3	78.4	na
FOOD INFRASTRUCTURE							
Trade capacity ^f							
Grain exports	1000 Tons	96	155	166	203	na	na
Grain imports	1000 Tons	6262	6274	6469	6616	na	na
Total food and agricultural trade	Million US\$ ^f						
Total food and ag. exports	Million US\$	3155	3102	3278	3031	3200	na
Perishable products exports	Million US\$	215	236	224	196	176	na
Fishery exports	Million US\$	1092	1023	1211	1143	1200	na
Total food and ag. imports	Million US\$	7794	7629	7591	6850	6508	na
Perishable products imports	Million US\$	552	570	564	506	557	na
Fishery imports	Million US\$	541	594	595	502	477	na
Port Capacity	Incoming and outgoing vessels, 1000 tons ^g	988886	1014420	1051403	998833	1018810	na
Road Access	Kms ^g	34102	35765	35751	35737	35723	na
Rail Access	Kms ^g	1156	1156	1150	1156	1156	na
Telecommunications	1000 subscribers ^g	11500	12040	12642	13021	13672	na
Power Generation	Gwh ^h	147141	153027	171950	163353	168253	na
Percent of population w/refrigerators	Percent ⁱ	99.30	99.35	99.45	99.45	99.50	na
Post harvest losses	percent of production ^a	6.97	5.43	5.65	5.40	5.30	na
FOREIGN INVESTMENT IN THE FOOD SECTOR ^j							
Inward FDI in the food sector,total	Million US\$	60	18	49	na	na	na
From other PECC economies	Million US\$	44	13	17	na	na	na
Outward FDI in the food sector,total	Million US\$	126	59	50	na	na	na
To other PECC economies	Million US\$	91	43	38	na	na	na
ROLE OF AGRICULTURE AND TRADE IN THE ECONOMY ⁱ							
Agriculture as share of GNP	Percent	2.47	2.56	2.09	1.91	1.85	na
Self sufficiency in grains	%, energy base	19.8	19.20	19.10	18.80	18.30	na
Self sufficiency in horticultural products	%, energy base	86.73	83.50	81.30	78.00	75.00	na
MACROECONOMIC DATA							
GDP Growth	% ^k	7.33	3.93	4.02	-1.25	3.08	5.5
Interest rate	% ^l	6.89	5.12	4.62	3.00	3.00	3
Exchange rate	Currency/US\$ ^l	33.46	32.27	31.23	33.81	34.33	33.64

^e = estimates

na = not available.

Sources:

a. Council of Agriculture, Food Balance Sheet

b. Directorate-General of Budget, Accounting and Statistics, Report on the Survey of Family Income and Expenditure

c. Directorate-General of Budget, Accounting and Statistics, Commodity-Price Statistics Monthly

d. Council of Economic Planning & Development, Urban and Regional

Development Statistics

f. Council of Agriculture, Monthly Statistics of Agriculture

g. Ministry of Transportation and Communications, Statistics Abstract of Transportation and Communications

b. Energy Commission, Ministry of Economic Affairs, Monthly Statistics of Energy

i. Council of Agriculture, Basic Agricultural Statistics

k. Directorate-General of Budget, Accounting and Statistics, Quarterly National Economic Trends

l. Directorate-General of Budget, Accounting and Statistics, Monthly Statistics