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## **Effects of Trade Liberalization in Pakistan**

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### **Executive Summary**

#### **Institutional and Structural Aspects**

This country study is part of a major project of the Asian region initiated by the United Nations ESCAP CGPRT Centre, Bogor, Indonesia, entitled "Effects of Trade Liberalization on Agriculture in Selected Asian Countries with Special Focus on CGPRT Crops (TradeLib)" launched in Indonesia, the Philippines, India, Thailand, Pakistan, China, Vietnam, Malaysia, Japan and the Republic of Korea. This project is a continuation of the Centre's earlier project on "Market Prospects of Upland Crop Products and Policy Analysis in Selected Asian Countries (MPUPA)" implemented in seven Asian countries including Indonesia, the Philippines, India, Thailand, Pakistan, China, and Vietnam. The TradeLib project was completed in three years in three parts consisting of an institutional study, a commodity study, and a location-commodity specific agricultural study. This section is the first year study covering the institutional part of the project. The major objective of this institutional study was to highlight and analyze institutional aspects of trade

liberalization, including a review/analysis on history of the trade regime, various trade-related government policies, infrastructure related to foreign trade, and analysis of trade-related indicators.

As in most developing countries, agriculture in Pakistan also occupies an important place, because of its share in the economy in terms of its contribution to national income and employment. Although its share in the economy has been slowly decreasing (around 24% of GDP in 1996/97) and that of non-agriculture slowly increasing, agriculture employs more than 50% of the labour force, and directly or indirectly earns around 70% of the foreign exchange from exports. Crops remain the most important sub-sector, but livestock now accounts for more than 30% of agricultural GDP, and the share of minor crops, forestry, and fisheries has increased slightly.

There is no direct government intervention in the production and investment decisions of farmers in the country. However, the government indirectly intervenes through the legal, material and economic environment in which the producers of various agricultural commodities operate. In the past, the

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\* Social Sciences Institute, National Agricultural Research Centre, Islamabad, Pakistan. This paper is adapted from Effects of Trade Liberalization in Pakistan: Institutional and Structural Aspects, Working Paper No. 33, CGPRT Centre, Bogor, and Effects of Trade Liberalization in Pakistan: Commodity Aspects, Working Paper No. 44, CGPRT Centre, Bogor.

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government intervened considerably in the agriculture sector through output and input markets, fixing support prices below world prices and funding research, extension, etc. Compared to international market prices, domestic prices of most of the commodities were low, and a significant quantity of resources was transferred from agriculture to the industrial sector, which is also indirectly dependent on the agricultural sector. Government fully enjoyed a monopoly on export and import of agricultural traded goods. In recent years, direct intervention by the government has diminished considerably, and now the private sector is allowed to participate in the export and import business of many agricultural commodities. For example, now the private sector is allowed to export cotton and rice, the main export products of the country. However, the government is still involved in output markets and distorts market signals, and prices of agricultural commodities are not market determined, implying that all forms of price support controls, subsidies for import of wheat, taxes on cotton exports, duties on sugar imports and quantitative restrictions, and other trade-related distortions need to be reviewed.

Pakistan signed the final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations on April 15, 1994, which also includes the trade agreement on agriculture. As a signatory, Pakistan accepted all the Uruguay Round trade agreements under the World Trade Organization (WTO), and is currently in the process of implementing most of the components and modifying its domestic legal and administrative rules to ensure their consistency with WTO obligations. The agreement on agriculture consists of four parts: the agreement on agriculture; concessions and commitments made on market access, domestic support, and export subsidies; the agreement on sanitary and phytosanitary measures; and the decision concerning least developed and net food importing developing countries. To fully benefit from the Uruguay Round agriculture agreement, Pakistan needs to modify its extent of present involvement in the agricultural product and input markets and all other policies which discriminate against the agriculture sector, such as the price support programme, import subsidies, taxes on exports, etc. It is anticipated that after complete implementation of trade liberalization in the country, market forces might change the present low domestic output prices to the levels of world market prices. However, due to the uncertain nature of the agriculture sector

and the present economic scenario in Pakistan, it is extremely difficult to quantify fully the impacts of the Uruguay Round trade agreements. Therefore, for countries like Pakistan, most of the implications of all the Uruguay trade agreements on agriculture should be interpreted with caution.

To meet the country's obligation towards globalization of merchandised trade under WTO, the government has taken various steps including reducing tariffs from more than 90% to 45% on many products, lifting of some bans and quantitative restrictions, simplifying the existing complicated rules and procedures of export and import, privatizing many government-owned trade-related institutions, instituting market-oriented monetary and fiscal policies and outward looking trade policy and investment friendly policies for both local and foreign investors, developing a package of incentives for exporters and importers, establishing industrial and free trade zones, etc. The country may not see the impacts of these market-oriented policies in the short run, but it is expected that in the long term, the economic situation will improve considerably with these structural reforms.

With introduction of the market-oriented reform development strategy and with a strong focus on export orientation, both exports and imports have been growing steadily since the early 1980s, with exports highly concentrated in the cotton group. Total imports rose sharply compared to exports, resulting in a trade balance from US\$ -2.45 billion in 1981 to -3.1 billion in 1996, mainly due to higher imports than exports. In agricultural trade, raw cotton, rice, fruits and vegetables, and fish and its preparations are the major export commodities, and edible oil, wheat, tea and milk and milk products are the main import commodities. Pakistan exported around 17% of the total production of cotton (fluctuating between 2 and 59% during 1981 to 1996) and 40% of the total production of rice in 1995/96. Pakistan imported more than 2 million tons of wheat in the 1990s, which is around 10% of the total production of wheat in the country.

Pakistan trades agricultural commodities almost all over the world. However, its principal trade partners are limited to only a few countries. Thus, there is a need to diversify its trade partners to expand foreign exchange earnings from export of agricultural commodities. The major trade partners for its agricultural export commodities include Indonesia, Dubai, Iran, Thailand, Hong Kong, some African countries, Japan, China and Saudi Arabia.

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## ***Message from the Director***

The 56<sup>th</sup> session of ESCAP was held during 1-7 June 2000 at the United Nations Conference Center (UNCC) in Bangkok, Thailand. The session was divided into two parts: Senior Officials Segment (1-3 June) and Ministerial Segment (5-7 June).

The deliberation in the Senior Officials Segment was done in the three committees of the whole and a working group for draft resolutions. I attended the Committee of the Whole III where I presented an introductory statement of the CGPRT Centre under the agenda item 7(C) "Socio-economic measures to alleviate poverty in rural and urban areas".

Delegates of 17 countries presented statements under this agenda, of which six countries, Nepal, India, Indonesia, Japan, Republic of Korea and Thailand, touched on the CGPRT Centre in their statements. All of them were very supportive to the Centre and expressed appreciation to the Centre's current programme activities, especially to the implementation of the "TradeLib" project and its follow-up programme, i.e. the in-country seminars in the individual participating countries. All of them

urged the Centre to further strengthen its programme activities, both R&D and HRD/IS. At the same time, they noted the unstable and insufficient financial resources and urged the members and associate members of ESCAP and the ESCAP secretariat to strengthen their financial support to the Centre. Although I was very encouraged with these supportive statements, the situation indicated in the pledges of contributions for 2000 was not so sweet.

As a matter of fact, the Centre is always in a dilemma between the increasing demand for more activities and the limited financial resources. This condition will likely continue. But, at the same time, this burden does drive the Centre in many cases to fight for a breakthrough to meet the demand. Of course, the Centre can only manage with the understanding and support of the partner countries and the ESCAP secretariat.

During the Ministerial Segment, the election of the Governing Board of the CGPRT Centre was held. In addition to Indonesia as the host country, Bangladesh, France, India, Japan, Pakistan, Philippines, Republic of Korea, Sri Lanka and Thailand were elected to the Board for the seventh term (2000-2003).

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Countries from which Pakistan mainly imports agricultural commodities include USA, Malaysia, Indonesia, and Kenya.

Domestic prices of most of the agricultural commodities are below world market prices, and support prices of these commodities are fixed by the government on a yearly basis. The direction of movement of prices of various agricultural commodities shows that Pakistan has a comparative advantage in the production of Basmati rice, non-Basmati rice, cotton, and high-value crops including fruits and vegetables, and non-traditional products such as cut flowers. There is a need to considerably improve the productivity of wheat, rice, cotton and all other traded commodities, since yields are far below the potential yield levels. Also, Pakistan needs to diversify its traditional export base to fully benefit from freer trade, in terms of products and markets, and to formulate policies and

strategies that will ensure that its products are able to compete in the international market with other producing countries, especially competing Asian countries.

The WTO undertaking is very comprehensive and complicated, especially the agreement on sanitary and phytosanitary measures, environment, child labour, etc. Producers and exporters will face the challenge of competition for their products in the international market and will be required to follow the international rules of the GATT/WTO. Also, in order to smoothly proceed with the adjustment process towards a more liberalized economic environment, it is very important to analyze and identify the effects of trade liberalization on the agriculture sector in Pakistan, especially on the small farmers. In addition, in-depth study of the impacts of considerable tariff reduction and other

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concessions given in the agriculture sector may be undertaken.

### **Commodity Aspects**

This is the second part of the Pakistan country study, which attempts to quantify the impact of trade liberalization on food commodities (wheat, rice and maize) at the national level. Also it includes a case study to determine the area specific impact of trade liberalization on these commodities in the rice-wheat areas of Punjab, Pakistan.

Among the major food crops, wheat is the staple food commodity, rice is one of the main export commodities, and maize is planted for both domestic and commercial purposes. Considering the importance of these three commodities, they were selected to study the impact of trade liberalization both at national and farm levels in Pakistan.

The impact of trade liberalization on wheat, rice (both Basmati and non-Basmati rice) and maize was estimated using simple welfare analysis. To conduct welfare analysis for these commodities, producer and consumer surpluses were determined using standard regression analysis based on demand, supply and price linkage equations. To estimate producer and consumer surplus and to estimate these equations, time series data from 1981 to 1998 were used. The study by FAO (1995) entitled "Impacts of the UR on Agriculture" was used as a base to analyze the impact of increasing world prices of wheat, rice and maize on wholesale and farm level prices in Pakistan due to trade liberalization.

Wheat is the most important food crop as it is the staple food and the largest cereal crop in terms of area in Pakistan. However, its demand has often exceeded domestic production, and the country imports around 2 million tons of wheat per year (10-20% of total production). The impact of trade liberalization on wheat was estimated using the results of the FAO study, and it was assumed that international prices of wheat would increase by 7% due to trade liberalization. In addition, it is assumed that the wholesale price of wheat would also increase by another 7% due to termination of the wheat subsidy on the issue price in Pakistan. The impact of this 14% increase in wheat prices on wholesale and farm level prices of wheat in Pakistan was estimated using elasticity coefficients from

estimated supply, demand and price linkage equations. Due to this increase in wheat prices, it is estimated that wholesale and farm level prices of wheat in Pakistan would have increased by 14.295% and 13.58%, respectively, during 1997-98. The increase in the farm level prices would have raised the total production of wheat from 18.69 million tons to 19.22 million tons (increased by 2.852%) during 1997-98. This increase in the production of wheat would have generated a gain of producers' surplus of Rs. 15,771 million. On the other hand, due to the increase in the wholesale price of wheat, domestic demand of wheat would have declined from 18.67 million tons to 18.40 million tons (1.49%) in 1997-98, and caused a loss of consumers' surplus of Rs. 19,482 million. Overall, the impact of the increase in the international price of wheat would be a net loss to Pakistan of Rs. 3,711 million during 1997-98.

After wheat, rice is the second most important staple food and it is also one of the major foreign exchange earning sources of Pakistan. In terms of area, rice is the third most important crop after wheat and cotton, occupying around 10% of the total cultivated area and producing around 19% of the total food grain in the country. The impact of trade liberalization on rice (both Basmati and non-Basmati types) was estimated using the results of the FAO (1995) study. It is assumed that international prices of rice will increase by 7%, and the impact on wholesale and farm level prices of rice was estimated using elasticity coefficients taken from estimated supply, demand and price linkage equations for both Basmati and non-Basmati rice. Due to the increase in the international price of rice, it is estimated that wholesale and farm level prices of Basmati rice in Pakistan would have increased by 7.763% and 8.377%, respectively. On the other hand, wholesale and farm level prices of non-Basmati rice would have increased by 7.889% and 7.02%, respectively. The increase in the farm level price would have raised the total production of Basmati rice from 1.539 million tons to 1.572 million tons (increase by 2.123%), and total production of non-Basmati from 2.799 million tons to 2.883 million tons during 1997-98. This increase in the production of Basmati and non-Basmati rice would have generated a gain of producers' surplus of Rs. 1,872 million, and Rs. 3,393 million, respectively. Due to the increase in the international price of rice, total production of rice would have increased from 4.338 million tons to 4.455 million tons, and generated a

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total gain in producers' surplus of Rs. 5,264.96 million. On the other hand, due to the increase in the wholesale price of Basmati rice in Pakistan (by 7.763%), its domestic demand would have declined from 894.28 thousand tons to 866.74 thousand tons during 1997-98, and caused a loss of consumers' surplus of Rs. 1,190.54 million. Due to the increase in the wholesale price of non-Basmati rice (by 7.889%), its domestic demand would have declined from 1,090.65 thousand tons to 1,080.23 thousand tons during 1997-98, and caused a loss of consumers' surplus of Rs. 841.66 million. Overall the impact of the increase in the international prices of rice would have resulted in a gain to Pakistan by Rs. 3,232.76 million during 1997-98.

Maize is the third most important food crop in Pakistan occupying around 4% of the total cropped area and 7% of the total area under food crops. Pakistan is not a big trade partner in maize, and its import used to be restricted in the past. Prices of maize in Pakistan were considerably higher than the international prices. The impact of trade liberalization on maize was also estimated using the FAO study in which it is assumed that international prices of maize will increase by 4%. The impact of this increase in maize prices on wholesale and farm level prices of maize was estimated using elasticity coefficients from estimated supply, demand and price linkage equations. Due to the increase in the international price of maize, it is estimated that wholesale and farm level prices of maize in Pakistan would have increased by only 4.02% and 4.03%, respectively. The increase in the farm level price would have raised the total production of maize from 1.251 million tons to 1.254 million tons during 1997-98. This increase in the production of maize would have generated a gain of producers' surplus of only Rs. 387.87 million. On the other hand, due to the increase in the wholesale price of maize, the domestic demand of maize would have declined from 1.323 million tons to 1.315 million tons in 1997-98, and caused a loss of consumers' surplus of Rs. 452.73 million. Overall the impact of the increase in the international price of maize would have resulted in a net loss to Pakistan by Rs. 64.86 million.

To study the impact of trade liberalization on location-commodity-specific agriculture, the rice area of Punjab province was selected to analyze the effects on rice (Basmati and non-Basmati), wheat and maize. Partial budgets of these three commodities were estimated, and the impact of

trade liberalization was analyzed at the farm level. The costs of production and net returns for these commodities were estimated for the scenario without trade liberalization (using base year 1993-94) and the scenario with trade liberalization (during 1997-98) at the 1997-98 yield and input levels. For without trade liberalization, 1993-94 prices of inputs and outputs were used. On the other hand with trade liberalization, 1997-98 farm level prices of inputs and outputs were used. The difference in cost of production and net returns among these two categories was assumed to be the effect of trade liberalization at the farm level.

Using the partial budgets before and after trade liberalization, the impact at the farm level is such that the cost of production of Basmati rice, non-Basmati (IRRI type), wheat and maize increased by Rs. 7,945/ha, Rs. 7,327/ha, Rs. 5,514/ha and Rs. 5,288/ha, respectively, during 1997-98. On the other hand, net returns in the case of Basmati rice and maize increased by Rs. 630/ha and Rs. 2,152/ha, respectively, during 1997-98. In the case of non-Basmati rice and wheat, net returns decreased by Rs. 2,345/ha and Rs. 983/ha, respectively, during 1997-98 due to trade liberalization.

It is evident in the case of Pakistan that significant policy changes in the course of implementing the UR Agreement on agriculture are required. They include tariff reduction, elimination of the subsidy on wheat, phasing out all forms of price support policies and control and reducing customs duties, quantity restrictions, exemptions, non-tariff barriers, etc. Presently, Pakistan is in the process of implementing the UR agreement on agriculture, which is a very complex and comprehensive undertaking and its impacts can not be easily quantified mainly due to uncertainty in the agricultural sector. Therefore, extra precautions should be taken in the interpretation of its impacts on the agricultural sector. In the presence of the existing economic and political structure in Pakistan, it is expected that the country will face considerable policy challenges in the course of implementation of the UR agreement on agriculture. In the agricultural sector, presently most of the producers, exporters, and policy makers are not well aware about the UR Agreement on Agriculture. There is an urgent need to pursue public awareness programs on the impact of trade liberalization on agriculture, including trade policy developments, priorities, and strategies of the major trading partners of Pakistan. For example, to further expand the export of agricultural commodities, Pakistan may have to adopt

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measures and programs that would ensure that its export products compete successfully with those exported by other LDCs, particularly producers of the same commodities in Asia.

It is expected that domestic prices of wheat, the main staple food in Pakistan will increase considerably and the country will have to spend a huge amount of foreign exchange on its imports. In the case of wheat, the best strategy would be to achieve self-sufficiency by considerably increasing the productivity of the local wheat crop, which is far below the potential yield levels. Due to lower (or negative) net returns from planting food grains including wheat, the cropping pattern is becoming diversified with a shifting away from food grains towards high value crops or export-oriented crops. This is a very serious issue, since with the existing population growth of around 3%, demand for food commodities is increasing at a faster rate. In such a situation there is a need to carefully consider policies such as whether or not to shift food grain area towards high value crops, since earnings from the high value crops or crops with export potential may be used to import food grains to meet domestic requirements.

The productivity of all food crops is considerably below their potential in Pakistan, and as a result farm level returns from these commodities are not sufficient to cover the cost of production and to give a reasonable return on capital. Therefore, efforts must be made through extension to promote improved cultural and intensive management practices to increase the present yield levels. In addition, high quality seeds, cheap credit, and improved farm machinery (such as rice transplanter, zero tillage drill, etc) may be arranged especially for small farmers to increase their farm income. Also, government should promote the grow-for-export policy among rice growers, since it will help to improve the quality of rice and increase the export of rice from Pakistan.

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## Effects of Trade Liberalization in China

*Jikun Huang and Chunlai Chen\**

### Executive Summary

#### Institutional and Structural Aspects

Since the economic reforms initiated in 1978, China's economy has grown rapidly. The annual growth rate of China's GDP was more than 9% in the 1978-98 period. China's foreign trade has been expanding even more rapidly than its overall economic growth. With the rapid growth of the external sector, foreign trade has been playing an increasing role in the national economy since reforms started in the late 1970s. The annual growth rate of the total value of China's foreign trade was nearly 15% in 1978-98. China's trade to GDP ratio increased from 13% in 1980 to 36% in 1997.

With the success of the Uruguay Round negotiation on General Agreement on Tariffs and Trade (GATT) in December 1993, the movement toward trade liberalization has been positive throughout the world. It has been 13 years since China applied to resume its original membership of GATT and then the World Trade Organization (WTO) in 1986. Despite China's great efforts to make concessions and commitments in the area of market accession in terms of reduction of tariff and non-tariff barriers, reform of the trade system and regulations and trade-related investment policies as of mid-1999 is still lacking. While there is increasing evidence showing that both China and its trade partners or the rest of the world all stand to benefit economically if China joins the WTO, what is preventing its accession? What efforts has China made in liberalizing its economy and trade sector and what does China need to do in its final accession to the WTO? On the other hand, however, widespread concern about the effects of

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trade liberalization on China's economy, especially on China's agricultural production, has been growing in China. How to improve China's food self-sufficiency, the central goal of China's agricultural policies, and increase farmers' income with the process of agricultural trade liberalization have been priority concerns of the Chinese government.

To better understand the questions raised above, the efforts made by China in the trade sector, and the impacts of trade reform on China's economy, we have examined the reform process of foreign trade in different stages based on the extent of trade liberalization and measures adopted and the changes in trade patterns over the last two decades.

China's foreign trade regime can be broadly divided into two periods: the highly centralized foreign trade regime under the planned economy before 1978 and the increasingly liberalized foreign trade regime since economic reforms started in 1979. The foreign trade regime in China before 1978 was characterized as a state monopoly, with administrative management, central planning, and budget financing.

Reform and trade liberalization in China's external sector, because of its strategic role in the economy, have proceeded gradually. Gradual trade liberalization consistent with reforms in other sectors of China's economy has its logic. In the initial stage, reform was tried for some "non-strategic products" and in specialized or designated regions. The institutional structure was partially altered, and more efforts were put in the incentive and management system instead of fundamental changes in decision-making and trade control. As experience was gained from increasing reforms and the objectives of trade could be achieved through alternative settings of institutions and policies, trade liberalization has proceeded smoothly since the late 1980s.

The evidence in this report indicates that during the past 20 years the highly centralized and monopolized foreign trade operation system has been gradually reformed and decentralized through granting trade rights to more trade corporations and production firms. The trade planning system has been gradually moved from a strictly mandatory plan to a combination of mandatory and guidance plans with flexible adjustments based on the market situation. The planning system was first replaced by a quota and licensing system, and then moved to a tariff-quota system. While state trading and

decision-making processes are still concerns of many negotiators in China's access to WTO, foreign trade corporations and companies have been gradually reformed and largely commercialized by reducing government direct administrative intervention and by introducing trade instruments to manage foreign trade. Commercialization of the state trade corporations was initially promoted by introducing the trade contract responsibility system, and then by transforming trade companies into handling agents and letting trade companies trade their commodities based increasingly on market forces and implementing various other trade-related policies on monetary, foreign exchange, financial and trade controls.

The trade regime has also been gradually moving from an import substitution system to a more export-oriented system since the reforms were initiated. The major policies to improve the efficiency and responsiveness of state trading and promoting export included introducing the export tax rebate policy, implementing the trade contract responsibility system, reducing the number of commodities requiring import and export licenses, reducing tariffs, and shifting the management of foreign exchange, etc.

Moving toward a more market-oriented trade system is evidenced from various aspects of China's trade policies and trade patterns. For example, the centralized trade management and operation system was first replaced by a foreign trade contract responsibility system, which was in turn replaced by a tax system; the foreign exchange retention system was abolished and replaced by a foreign exchange bank settlement system; a single managed floating foreign exchange system was introduced in 1994; government export subsidies were phased out; and the financial system related to foreign trade was adjusted to meet the reformed trade system.

With experience gained from Special Economic Zones in Economic and Technological Development Zones, the uneven regional open strategy was revised. The regional open policies have been expanded from the SEZs in the coastal cities to the entire coastal areas, and then implementation of the open policies was gradually extended throughout China. Regional preferential policies have been gradually phased out.

Foreign exchange control, though still highly interventional, has been relaxed significantly since the late 1980s by introducing a foreign exchange

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retention system and establishing a foreign exchange swap center in the early reform period, and the two-tier exchange rate was consolidated in December 1993. The RMB became convertible on current accounts at the end of 1996.

While tariffs now are still high compared to existing WTO member countries and some non-tariff measures are commonly applied to "strategic products" such as agricultural and food products, foreign trade control in China has also been significantly liberalized since the early 1990s. China's average tariffs were reduced from 47.2% in 1991 to 17% in 1998. China's tariffs on agricultural trade have also been largely reduced since the early 1990s. The simple average agricultural import tariff decreased from 42.2% in 1992 to 23.6% in 1998.

During the 1980s China extensively used quotas and licensing to control its foreign trade. However, since the early 1990s China has progressively and drastically reduced the number of items subject to export and import quotas and licensing administration. The products subject to quota, licensing and other import control measures accounted for only 5% of the total import tariff lines in 1998.

In summary, through nearly 20 years of reform, China's foreign trade regime has gradually changed from a highly centralized, planned and import substitution regime to a more decentralized, market-oriented and export promotion regime. While significant progress has been made since the economic reform in liberalizing the trade regime, China's foreign trade regime still has major inefficiencies. China's international trade in agricultural products is still largely a monopoly.

The impacts of trade reform on the patterns of China's international trade were examined. The reforms resulted in rapid growth and significant structural changes in international trade. The importance of agricultural trade in China's total trade has declined considerably since 1980, particularly since the early 1990s. Within various agricultural commodities, this study also reveals that the gradual liberalization of China's agricultural trade has the expected impact on trade patterns. Over time, the pattern of agricultural trade has been gradually moving more closely towards reflecting China's resource endowments and exploiting China's comparative advantage in the world agricultural markets.

However, this study also reveals that room for further liberalization exists in terms of tariff reduction, limiting non-tariff measures to control agricultural imports, commercialization of state trading, and improving the efficiency of foreign trade management. Indeed, China has decided to take further steps in trade liberalization in the coming years. This is evidenced in a recent joint China-US statement signed by China Premier Zhu Rongji and US President William Jefferson Clinton on the Status of Negotiation on China's Accession to the World Trade Organization in April 1999. Besides this effort to liberalize China's trade sector, some other policy implications will be followed.

With further trade liberalization and the adjusting of China's trade regime consistent with the WTO, it is expected that China will face great challenges in maintaining its current food self-sufficiency, a central agricultural policy that has been a top priority in setting China's agricultural policies since the founding of the People's Republic of China in 1949.

Research efforts should be made to assess the impact of trade liberalization on China's agriculture and to improve the awareness of policy makers on these impacts. Grain, mainly wheat and maize, imports are expected to rise significantly with trade liberalization. If China wants to maintain the grain self-sufficiency policy and reap the comparative advantage gains from trade liberalization, China has to make a fundamental shift in its investment policy, domestic agricultural marketing policy and foreign exchange policy. Investment in agricultural research and extension, irrigation and other productivity-enhancing activities should be increased. China should allow a greater role for the market to determine trade patterns in order to reap comparative advantage gains. In the past, domestic prices and marketing prices have consistently represented a tax on farmers. The most heavily taxed commodities are the exportable agricultural commodities. If the impact of overvaluation of the domestic currency is considered, the agricultural sector is taxed even more than that shown by the NPRs.

The impacts of trade liberalization on welfare distribution, on the poor and rural labor employment and income, and social stability would be the other important policy issue for the Chinese government to consider in the coming years. With trade liberalization, most agricultural product prices, especially grain, edible oil and cotton prices, would

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certainly decline. Thus the farmers of these crops and subsistence farmers in poor areas would suffer income losses. New policies are required to minimize any adverse impact of trade liberalization on the income and welfare redistribution among the farmers and regions.

Although China has made great progress in the construction and improvement of transportation systems and trade-related physical infrastructure, China's existing transportation network and physical infrastructure still lag behind the growing needs of the rapidly expanding economy and international trade. The trade-related physical infrastructure and marketing information systems (both domestic and international) need to be improved. The policies related to food processing industry development, agricultural product quality, standards and grading are the other future concerns in improving China's agricultural trade balance under a more open trade regime.

### **Commodity Aspects**

While the negotiation is still ongoing, there has been also growing concern on the impacts of China's accession to WTO on China's domestic agricultural production, prices and markets, employment and farmers' income, particularly in the short term. How to sustain agricultural growth, achieve food security, and increase farmers' income with the process of agricultural trade liberalization are priority concerns of not only policy makers but also farmers. What are the impacts of trade liberalization on China's agricultural production? What are the implications of trade liberalization to China's food security? How will trade liberalization impact on China's domestic agricultural commodity prices, agricultural employment, farmers' income, and agricultural trade in the short run and in the long run? What are the policy implications of the changes in the economy resulting from trade liberalization in the future?

The answers to these questions are by no means clear. Some researchers claim that the impacts of China's accession to the WTO on China's agricultural production and trade are marginal. Others believe that, while both China and the rest of the world will benefit from China's WTO accession for the economy as a whole, the impacts of trade liberalization on China's agricultural sector should not be understated.

China's ability to feed itself in the 21<sup>st</sup> century has been widely discussed in the literature. The most striking feature of the projections of food surpluses and deficits is their wide range. Such a wide range of food economy predictions is perplexing. China's emergence as either a major importer or a major exporter could have enormous consequences for world grain markets and prices. Moreover, most previous studies assume that China's current trade policies will be continued in the future. Evidence from most recent work indicates that China will face a great challenge in achieving its food security in a more liberalized economy.

Based on a projection model developed at the Center for Chinese Agricultural Policy (CCAP), CCAP's Agricultural Policy Simulation and Projection Model, several policy scenarios are formulated and the impacts of trade liberalization on China's agricultural demand, supply, trade, prices, welfare, employment as well as farmers' income in local crop production are projected and estimated.

The scenarios formulated for simulation analysis include baseline, free trade, and free trade with increasing productivity enhancing investment scenarios. The baseline scenario assumes that China will continue its current domestic and external policies and not join WTO in the future. In contrast to the baseline scenario, the free trade scenario assumes that China will continue liberalizing its agricultural sector and reach the free trade environment for most agricultural commodities by the year 2005. This represents a maximum impact of trade liberalization on China's agriculture. The actual impact of trade liberalization and China's joining WTO on domestic agriculture will be in-between the simulation results of the baseline and the free trade scenarios. In order to estimate long term prospects of China's food security under a free trade regime, we project China's food supply, demand and trade toward 2020 under a free trade scenario without and with the progressive improvement in agricultural productivity enhancing investment. The latter scenario assumes that the annual growth rate of agricultural research expenditure will rise from 4% (baseline assumption) to 6%.

Our simulation results on trade liberalization conclude that the producers of most crops (except for rice and horticulture) will have reduced income from their farming activities, not only because of a decline in the price received by the farmers, but also

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a reduction in production. However, most animal product producers, particularly farmers raising hogs and poultry, will benefit from trade liberalization as the increase in the export demand raises livestock prices and the surging maize import lowers the feed price.

The impacts of trade liberalization on China's agriculture are remarkable not only on agricultural prices, but also on domestic production and consumption, and external trade. Under the free trade scenario, the fall in domestic prices of grain raises grain consumption and slows down the production. Our projection shows that China's domestic grain production will fall far behind domestic grain consumption under the free trade scenario. Compared to the baseline scenario, the grain deficit between domestic supply and demand will be further increased. China's net grain imports would rise to about 60 million mt in 2005 if the grain market were liberalized. Among these, 40 million mt or two-thirds of imported grains are maize.

Our study also concludes that maize, the third major crop just behind rice and wheat, will soon pass over rice and wheat and become a top crop in terms of the magnitude of its domestic consumption (demand), and it will soon become the number one imported crop product in China. China will likely be one of the world's largest importers of maize in the coming years if the market is fully liberalized in the future. In contrast to what many scholars' believe, while trade liberalization will raise the wheat import in the short run, the wheat import will soon decline after the initial shock of trade liberalization. China will become nearly self-sufficient in wheat in the long term (by 2020).

On the other hand, China is likely to be one of the major exporters of livestock products in the world. Pork and poultry exports will expand profoundly with trade liberalization. Trade liberalization will tend to raise domestic animal product prices to levels present in the world market. The interesting point is that feed grain consumers are the animal product producers. Thus, the producers of animal products will have double gains (lower production cost as the feed price declines and higher meat prices) with a more liberalized economy. Consequently, there will be an expansion in the production of animal products, particularly the production of pork and poultry in China after trade liberalization.

In relation to food security and grain self-sufficiency issues, our study shows that a

completely liberalized economy in the short term will challenge the current food security goal defined by the government. China's grain self-sufficiency rate will decline rapidly from 98% in the mid-1990s to less than 90% in 2005, if the free trade regime is assumed by the year of 2005. However, it is worth noting that this is an extreme case, representing a maximum impact of trade liberalization on China's grain economy. The actual impact of China's joining the WTO will be lower than the results from this free trade scenario.

In the long term, our study shows that the most effective policy that could improve China's food security and raise the grain self-sufficiency level is to increase agricultural productivity enhancing investment such as agricultural R&D, rural and agricultural infrastructure and irrigation. If these policies are formulated properly, China could achieve its grain self-sufficiency target in the second decade of the next century, even if the grain market is completely liberalized in 2000-2005.

The welfare analysis of this study reveals that trade liberalization will generally be unfavorable to grain producers but favorable to livestock and fish producers in China. In terms of consumers, trade liberalization will raise their welfare in grain, but reduce their welfare in the meat sector. For overall social welfare, our study shows that social welfare gained from liberalization within China's agricultural sector is minimal. However, the welfare changes differ significantly among agricultural products, between producer and consumer, and over time.

The impacts of trade liberalization on agricultural employment in this study are surprisingly lower than those found in other studies for China, but they are consistent with the actual employment changes observed in Mexico and other developing countries during the period when their economies were liberalizing. However, a significant impact of trade liberalization is found for maize and wheat. Maize production would lose employment by more than 2.3 million man-years and wheat by 1.14 million man-years in 2000-2005. Employment expansion in the rice and livestock sectors will not be able to fully offset the decline in employment in the crop sector. For agriculture as a whole, a rough estimate of the reduction in employment due to trade liberalization might range from 2 to 2.5 million man-years in the period of 2000-2005.

Examination of the impacts of trade liberalization at the local farm level is based on a partial budget analysis for rice, wheat and maize,

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the three most important crops in China. The results show that rice farmers in China will be one of the few winners within the agricultural sector in the process of trade liberalization. The gains come essentially from the rise in the domestic rice price and the reduction in production costs as most agricultural input prices will fall with trade liberalization. These gains from liberalization are found for all rice producers in China, but the gains vary among provinces and by variety.

The partial budget analyses also demonstrate that wheat and maize production would be much less profitable after trade liberalization. Farmer's income from wheat and maize production will decline significant with trade liberalization, as the large decline in output prices could not be compensated for by the cost reduction from cheaper imported agricultural inputs. Most maize and wheat farmers in southern China might record a negative profit if the opportunity costs of family labor are accounted for in crop production.

Based on the findings of this study, a number of policy recommendations are made. The study calls for a greater role for the market to determine trade patterns in order to reap comparative advantage gains in the course of trade liberalization. Policy steps to achieve comparative advantage gains include removing implicit taxes on farmers and reforming domestic grain pricing and marketing systems.

Further commercialization of the state trading system will improve the efficiency of foreign trade under a more liberalized economy, which is essential for China to maximize its potential gains in some sectors and/or to minimize its likely losses in other sectors of the economy due to trade liberalization. Improved grain handling, internal transport, and external port capacities will be the other important areas for policy intervention.

This study also calls for a revision of the grain self-sufficiency policy. If a food grain self-sufficiency concept could be adopted by policy makers instead of the total grain self-sufficiency concept, China would benefit greatly from realizing the full gain in trade liberalization by shifting more land from the production of feed grain to exportable products (i.e., horticultural products).

To maintain a high level of food security and to ensure that the comparative advantage of China's agriculture does not decline as far as we have projected under the free trade scenario, China has to substantially raise its investment in agricultural research and extension, irrigation, and other productivity-enhancing activities. This is one of the most effective measures to reduce China's grain imports and expand labor intensive agricultural product export.

Policies recommended for China to minimize its short term shocks from trade liberalization include measures that could be adopted under the WTO framework such as setting an adequate minimal market accession level, a reasonable level of the above quota tariffs, an acceptable length of the transition period, and a moderate depreciation of the domestic currency.

New policies on assisting farmers in adjusting their production and employment structures, and on setting up a better tax and income re-redistribution system are also suggested. This is particularly important for the poor whose income mainly depends on crop production. Access to credit and market information is another important factor that will help farmers obtain re-employment in other sectors. A further effort is needed to assess the consequence of trade liberalization on China's agriculture and farmer's income in a more detailed manner and to increase the awareness of policy makers and farmers regarding China's agriculture and trade liberalization.

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## CGPRT Centre News and Activities

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### TradeLib

The later half of the in-country seminar series was completed: China (17 May), Korea (26 May), Indonesia (29 May), Thailand (9-10 June) and Viet Nam (21-22 June). Malaysia did not join in the

series to avoid duplication with a similar meeting held previously. Seminars/workshops held in the nine participating countries were all welcomed and appreciated.

The integrated report was printed in May and distributed. In total, the TradeLib project produced 20 country reports, one proceedings and one

integrated report during the period of three years and three months.

The TradeLib project, funded by the Government of Japan, was totally completed by the end of June 2000.

## AGRIND

The AGRIND project, directly granted by ATO-DLO, a Dutch institute, stopped its activities at the end of May 2000 due to difficulties in the funding institute. Mr. Bart van Assen left the Centre accordingly.

## SouthPIC

The Food Security Strategies for South Pacific Island Countries (SouthPIC) project encountered some unavoidable constraints. Therefore, the due date of country reports of Fiji and Vanuatu was rescheduled to the end of June 2000. The draft country reports of Papua New Guinea and Tonga should have been received at the end of May 2000.

## ECOPOL

The Economic and Policy Analysis for the Eco-regional Approach in Southeast Asia (ECOPOL) project is designed to bring methodological and applied answers to the issue of sustainable income increase in rural areas. It deals with agricultural policies, economic policies having an impact on agriculture and agriculture-related sectors (agro-industry, trade, services and consumption mainly),

and institutional policies. The project started in June 1998 in Vietnam and November 1998 in Indonesia.

In Indonesia, the analysis of field data on poor agricultural households has started. Preliminary results confirm the relevance of the expert meeting based typology of poor households. Subcategories were further defined according to criteria set up during this meeting. From 118 households 114 were found below the poverty line for the time of the survey (US\$133 per capita per year). This result confirms the adequacy of the criteria set for poor rural household identification (See Palawija News last issue). The resulting categories and their main characteristics are presented in Table 1 below.

Some results can be highlighted. First, all these rural households largely depend on non-agricultural income. Although not really surprising, this stresses the limits of any development policy that separates the non-agricultural component of the rural poor households. Second, an important element of poverty is the family size as far as agricultural wagedworkers are concerned. There is a clear relation between the number of people consuming and the yearly per capita income. Third, the size of cultivated area is very small, which explains to some extent the low-income level found. The others category regroups households that present characteristics that differ from the population targeted, usually due to lack of accuracy in the sampling process at the village level. But it is quite relevant to notice that these households are wealthier than the others, partly due to a larger land area but also because of non-farm activities. Finally, land productivity varies strongly and is not related to higher net income.

**Table 1 Typology of poor farm households in southwest Java, Indonesia.**

	Unit	Landless workers			Tenant farmers			Owner farmers		Others
Group Identification number	→	13	14	15	21	22	23	41	42	5
Group size	households	10	12	9	6	16	16	11	24	14
Net income	US\$	89	63	51	55	62	109	47	118	172
Cultivated area	ha	0.00	0.00	0.00	0.06	0.18	0.15	0.17	0.20	0.43
Agr. income	% of total	0	14	0	34	50	18	40	58	49
Family workers	persons	1.20	1.58	1.33	2.50	2.88	2.63	3.45	2.50	2.21
Family size	persons	3.3	4.17	5.67	3.83	4.25	3.75	3.96	4.20	4.20
Land prod.	US\$/ha	0	0	0	2,350	1,630	1,045	910	1,640	1,244
Work prod.	US\$/day	0.8	0.64	0.69	0.48	0.78	1.25	0.79	1.16	1.66
Self consumption ***	%	0	31	0	12	46	43	36	48	45

\* Per capita.

\*\* At 8,500Rp/US\$ exchange rate.

\*\*\* Rice.

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The next step is to investigate in more detail the reasons why different types of households have different incomes and to derive implications for development policy. For this purpose, agricultural and non-agricultural activities will be analyzed to determine which are the most promising ones, and to identify opportunities and constraints according to the type of household.

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## ELNINO

The Stabilization of Upland Agriculture and Rural Development in El Niño Vulnerable Countries (ELNINO) project started in April 2000. This three-year research project aims to provide relevant policy recommendations for effective and efficient weather-related risk management by analyzing damage and existing mitigation strategies at both local and national levels. The final objective is to stabilize upland agriculture for sustainable rural development in less favored areas in the region.

Mr. Shigeki Yokoyama was appointed as the project leader and commenced his duty in April. Mr. Yokoyama, born in 1957, completed his M.S. degree in Agricultural Economics at the University of Tokyo in 1984 after completing the undergraduate courses at the Hokkaido University in 1982. Before accepting his current position, he was chief of the International Development Section, Department of Foreign Agriculture, National Research Institute of Agricultural Economics, Ministry of Agriculture, Forestry and Fisheries, Japan.

A regional advisor and five national experts of the participating countries, namely, Indonesia, Malaysia, Papua New Guinea, the Philippines and Thailand, were assigned in June.

The pre-planning consultative meeting of the project was held on 13-14 June 2000 at the CGPRT Centre, with participation of the regional advisor

from the Philippines. Further clarification of immediate objectives, rough schedule of project implementation, the data required, survey methodologies and other related issues were discussed. A planning meeting is scheduled for mid July, with participation of all related parties.

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## Database

The database activities for the quarter include:

- Acquisition of agricultural statistics on Bangladesh and the Philippines.
  - Preparation of agricultural statistics profile for Bangladesh.
  - Compilation of background materials for a research proposal on "Feed Crop Study in Selected Asian Developing Countries (FEED)".
  - Development of user friendly modules for MS-ACCESS.
  - Collection of agricultural data from FAO for countries of the Asia and Pacific region.
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### **Notice:**

Palawija News publishes information about forthcoming conferences and training courses related to agriculture, especially socio-economic aspects, free of charge according to the space available. The Centre reserves the right to select and edit submissions.

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### CGPRT Centre

The Regional Co-ordination Centre for Research and Development of Coarse Grains, Pulses, Roots and Tuber Crops in the Humid Tropics of Asia and the Pacific (CGPRT Centre) was established in 1981 as a subsidiary body of UN/ESCAP.

### Objectives

In co-operation with ESCAP member countries, the Centre will initiate and promote research, training and dissemination of information on socio-economic and related aspects of CGPRT crops in Asia and the Pacific. In its activities, the Centre aims to serve the needs of institutions concerned with planning, research, extension and development in relation to CGPRT crop production, marketing and use.

### Programmes

1. Research, which entails the preparation and implementation of studies covering production, utilization and trade of CGPRT crops in the countries of Asia and the South Pacific.
2. Training of national research and extension workers,
3. Information and documentation which encompasses the collection, processing and dissemination of relevant information for use by researchers, policy makers, and extension workers.

### Palawija News

Contributors are invited to submit concise summaries of significant social research related to CGPRT crops for publication. Figures (graphs or tables) may accompany the article. All articles are subject to editing to meet space limitations.

Please send all queries relating to articles in *Palawija News* to Publications Section, CGPRT Centre, Jalan Merdeka 145, Bogor 16111, Indonesia.

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