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EFFECTS OF AFTA AND APEC TRADE POLICY REFORMS ON INDONESIAN AGRICULTURE

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between

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**CASER/CSIS/CIES/ANU
joint research project on**



**Policy analysis of linkages
between Indonesia's agricultural
production, trade and
environment**

Rapid economic growth in Indonesia has been accompanied by significant structural changes, including for its agricultural sector and its unique natural environment. Recently questions have been raised about the impact of Indonesia's agricultural, industrial, trade and environmental policies on sustainable rural development. The nature of interactions between the economic activities of different sectors and the environment are such that an intersectoral, system-wide perspective is essential for assessing them. An international perspective also is needed to assess the impact on Indonesia of major shocks abroad, such as the implementation of the Uruguay Round agreements, APEC initiatives, or reforms in former centrally planned economies. There is increasing pressure on supporters of liberal trade to demonstrate that trade reforms at home or abroad affecting countries such as Indonesia will not add to global environmental problems (e.g., deforestation, reduced biodiversity). Again, this requires system-wide quantitative models of the economy and ecology, because typically there are both positive and negative effects at work, so the sign of the net effects ultimately has to be determined empirically.

To begin to address these issues, the Australian Centre for International Agricultural Research (ACIAR) has generously provided funds for a collaborative 3-year project (to mid-1999) involving the University of Adelaide's Centre for International Economic Studies (CIES) as the lead institution, Bogor's Centre for Agro-Socioeconomic Research (CASER) which is affiliated with the Ministry of Agriculture, Jakarta's independent Centre for Strategic and International Studies (CSIS), and the Economics Division of the Research School of Pacific and Asian Studies (RSPAS) at the Australian National University in Canberra. Being based on Indonesia with its rich diversity of environmental resources (and on which there are relatively good data) and its rapid economic growth, the project could also serve as a prototype for similar studies of other developing countries in Southeast Asia and elsewhere.

The key objective of the project is to assess the production, consumption, trade, income distributional, regional, environmental, and welfare effects of structural and policy changes at home and abroad particularly as they will or could affect Indonesia's agricultural sector over the next 5-10 years. Among other things, the analysis will focus both on the effects of economic changes on the environment, and on the impacts on Indonesia's agricultural production and trade of resource and environmental policy changes. The implications of regional and multilateral trade liberalization initiatives and Indonesia's ongoing unilateral trade reforms will be analysed, along with other potential domestic policy changes and significant external shocks such as the entry of China and Taiwan into the World Trade Organization. The analysis will draw on and adapt computable general equilibrium (CGE) models such as the national INDOGEM Model (built as part of an earlier ACIAR project) and the global GTAP Model.

The project is being undertaken in close collaboration with the Indonesian Ministry of Agriculture and ministries involved in trade, planning, and the environment. A Research Advisory Committee has been established to encourage close collaboration of representatives from those and other ministries.

ACIAR INDONESIA RESEARCH PROJECT

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Indonesia is facing commitments to international trade liberalisation through the Uruguay Round, its participation in Asia Pacific Economic Cooperation (APEC), and its collaborative effort with other ASEAN economies to form an ASEAN Free Trade Area (AFTA). As part of the Uruguay Round commitment, Indonesia has been reducing its border tariffs, opening its markets, as well as reducing other domestic distortions especially in the agricultural sector.

As a member of APEC, Indonesia is determined to liberalise trade and investment in the Asia Pacific region. In the meeting in Bogor, Indonesia, in 1994, APEC economies set the long-term goal of free and open trade and investment in the Asia Pacific. The Bogor Declaration hopes to realize the goal in 2010 for developed economies and 2020 for developing economies. Furthermore, the Bogor meeting clarified the three pillars on which APEC would be based, namely, Trade and Investment Liberalisation and Facilitation (TILF); Economic and Technical Cooperation (ECOTECH); and Development Cooperation. Import tariffs have been cut unilaterally in APEC member economies, and further tariff cuts are expected so as to implement the Bogor goal.

While considerable industrial tariff reduction has been implemented in APEC, there has not been much discussion of agricultural liberalisation. This is different from the Uruguay Round which explicitly specifies reductions of import tariffs, domestic subsidies, and export subsidies on agricultural commodities. In APEC, the tariff reduction measure is generally based on the average level of tariff. This means that sectoral classifications become less relevant. It was only more recently that the sectoral approach to tariff reduction, the so called Early Voluntary Sectoral Liberalisation (EVSL), was set out in the Vancouver meeting in 1997. However, in the following year in Kuala Lumpur, there was a disagreement among APEC member economies on the liberalisation of some sensitive agricultural sectors. As a result, APEC had to submit its EVSL problems to the WTO for resolution. Clearly agriculture remains a sensitive sector within APEC.

As a member of Association of Southeast Asian Nations (ASEAN), Indonesia is also committed to form a free trade area in ASEAN (AFTA) in 2003. Different from the most-favoured-nation schemes in APEC and the Uruguay Round, AFTA is meant to create a discriminatory trading block in ASEAN. While in general the coverage of AFTA includes both the agricultural and non-agricultural sectors, the progress of agricultural trade liberalisation has been very slow. It remains to be seen whether AFTA can be fully implemented in 2003.

This paper estimates the impacts of Uruguay Round, APEC and AFTA trade liberalisations on the economies in the Asia-Pacific region in general, as well as specifically on Indonesia, by using a quantitative economic model. The objective is to measure the potential gains or losses, and to predict the changing trade patterns and resource reallocation as a

result of these liberalisation schemes. The focus is on Indonesia even though the model treats Indonesia as part of an interdependent world economy.

This study compares the impact of each scenario on welfare, output, and resource allocation in the Indonesian economy. It uses a global Computable General Equilibrium (CGE) model known as GTAP (see Appendix 2 of this volume) which allows us to trace the impact of trade liberalisation through flows of goods and services across sectors and countries. In a global CGE framework, the world economy is classified into several regions and sectors, where quantity and prices adjust to the changing supply and demand that form the equilibrium conditions in every market. Policy changes, such as a reduction in import tariffs, lead to changing equilibrium market conditions in every sector and region involved in the model. The GTAP model measures the impacts of these policy changes on prices and quantities, structural resource allocation, as well as welfare gains or losses.

The paper is organised as follows. The first part discusses various forces of trade liberalisation that Indonesia is currently facing. This includes a discussion of the Uruguay Round, APEC and AFTA. The second part presents the modelling framework in a computable general equilibrium model, including the development of various scenarios to represent various schemes of trade liberalisation. The third part presents the results of the simulation and is followed by the conclusion.

Forces of trade liberalisation

Liberalising trade in agriculture through the Uruguay Round

The Uruguay Round has been the main driving force of agricultural sector liberalisation in the Asia Pacific during the past decade. Even though in terms of actual trade liberalisation the Uruguay Round Agreement on Agriculture seems to be limited, its achievement was quite significant. Other international trade agreements, many of which are more progressive than the Uruguay Round in terms of non-agricultural products, often fall short in terms of a push for more agricultural liberalisation. Hence, the success of the Uruguay Round in including agriculture in its agreement has become the primary source of efficiency gains from this reform. Prior to this agreement, trading economies could maintain inefficient and costly barriers since the sector was not regulated under GATT (now WTO) rules.

The Uruguay Round Agreement on Agriculture consisted of two parts: a set of general commitments on the new GATT rules on agriculture, and country schedules on the commitments of each participant on tariffs and other areas of obligations. These different areas include obligations to improve market access and reduce domestic support measures and export subsidies.

ASEAN Free Trade Area

In January 1992, intra-ASEAN economic co-operation received a major boost at the Fourth ASEAN Summit in Singapore with the agreement by ASEAN countries to achieve an ASEAN Free Trade Area (AFTA) within 15 years. Originally, fifteen commodity groups were chosen to be on the fast track.¹ For fast-track products with tariffs greater than 20 percent, tariffs were to be immediately reduced to 20 percent, and to 0-5 percent within 10 years; while for fast-track products with tariffs at 20 percent or below, tariffs were to be reduced to 0-5 percent within 7 years. To qualify for CEPT (Common Effective Preferential Tariff), goods must satisfy the ASEAN local content requirement of 40 percent. AFTA was a broader and much improved intra-ASEAN liberalisation program, but unprocessed agriculture products were initially excluded.

Various forces including the commitments under the Uruguay Round, progress in APEC and unilateral liberalisations have contributed to accelerating and deepening ASEAN cooperation. For example, the timetable by which all products in the CEPT will have tariff rates of not more than 0-5 percent was accelerated from 15 to 10 years, that is, by 2003. A number of products were also accelerated to the year 2000, by which time 88 percent of tariff lines were in the 0-5 percent tariff range. Also, the product coverage of CEPT was broadened to include unprocessed agriculture products, although they are further categorised into temporary exclusion and sensitive lists. Items in the sensitive list will be liberalised under a separate schedule, but they are expected to go beyond ASEAN's commitments in agriculture under the WTO. Based on tentative lists, it appears close to 70 percent will be on the inclusion list. The temporary exclusion list will also be phased into the inclusion list by 2003. There has been agreement that the sensitive list should be kept at a minimum and currently it comprises around 10 percent of the tariff lines in unprocessed agriculture products.

Despite that accelerated progress, difficulties have been experienced in reaching an agreement on the agricultural items to be included in the temporary exclusion and sensitive lists, and the time limit by which all items are phased into the inclusion list. At the ASEAN summit in 1995 for example, Indonesia reintroduced 15 agriculture products to its sensitive list that had earlier been in the temporary exclusion list. The majority of these products are items which are coordinated by a state logistic agency (BULOG) and included rice, sugar, wheat flour, and soybean.

Indonesia's decision to postpone the liberalisation of these 15 food items dominated the 10th AFTA Council meeting in Jakarta in September

¹ The fast track products are: vegetable oils, chemicals, fertilisers, rubber products, pulp and paper, wooden and rattan furniture, gems and jewellery products, cement, pharmaceuticals, plastics, leather products, textiles, ceramics and glass products, copper cathodes, and electronics.

1996. Indonesia, supported by the Philippines, refused to accept a 2010 deadline for including rice and sugar into the CEPT scheme. In addition to the sensitive list, Indonesia created a new list called the "very sensitive list" and included the two food items in that list. Indonesia and the Philippines demanded that the 2010 deadline be pushed back by 10 years. On the other hand, Thailand insisted that all unprocessed agricultural commodities be phased in 1 January 2003 and be totally liberalised by 2010. By the end of the meeting it was agreed that the liberalisation of sensitive agricultural commodities will begin in January 2003 and end in 2010, but Indonesia and Philippines were allowed some flexibility. For example, Indonesia can maintain import tariffs on rice and sugar above 5 percent after 2010 and introduce safeguard measures at that time to protect domestic producers.

APEC

In 1993, leaders of the APEC economies met in Blake Island, Seattle, to discuss the progress of liberalisation in the Asia-Pacific area. This meeting became a milestone of the forum's progress, since the meeting provided a vision of free trade and investment in the region. Even though APEC itself had been formed in 1989, it was not until 1993 that APEC formulated a clear picture of what it wanted to achieve. A year after the Seattle meeting, another meeting in Bogor, Indonesia, set the long term goal of free and open trade and investment in the Asia Pacific. With the Bogor Declaration, APEC economies hoped to realize this long term goal in 2010 for developed economies and 2020 for developing economies.

In the following year, APEC leaders meet at Osaka to formalise this vision, and in doing so, laid down the framework for liberalisation. This framework, known as the Osaka Action Agenda (OAA), included nine clearly defined principles for APEC. They are: (1) comprehensiveness; (2) WTO-consistency; (3) comparability; (4) non-discrimination; (5) transparency; (6) standstill; (7) simultaneous start, continuous process and differentiated timetables; (8) flexibility; and (9) cooperation. In 1996 these nine principles were further emphasised in Manila and, based on this framework, action plans were made. These action plans, known as Manila Action Plans for APEC (MAPA), served as a map towards the Bogor goal.

Basically, MAPA was a set of liberalisation initiatives conducted either unilaterally or collectively. Unilateral and voluntary liberalisation became to be known as Individual Action Plans (IAPs), while collective initiatives were called Collective Action Plans (CAPs). By promoting these initiatives, it was expected that greater benefits of liberalisation would be felt by APEC economies because of a widened scope. This widened scope was achieved by allowing APEC members to work, firstly, on the goal through the simultaneous efforts of their own action plans. But in addition, concerted actions by APEC economies would enhance its collective capacity to lead global liberalisation. Via MAPA, APEC members reinforced the

trends of liberalisation by ensuring more transparent trade regimes through the IAPs and CAPs, reducing the cost of doing business, and strengthening economic and technical cooperation in the region.

Modelling trade liberalisation

International trade liberalisation in this paper is modeled using the global computable general equilibrium model and database known as GTAP. Version 3 of the database is used here because its tariff rates represent the situation when the Uruguay Round and other regional arrangements were launched in the first half of the 1990s. To model the impact of trade liberalisation on Indonesia's agriculture in this global CGE model, the world economy is aggregated into 19 regions (in order to give a detailed coverage of the APEC members) and 12 commodity groups (four of them agricultural, three other primary sectors, four manufacturing sectors, and an aggregated services sector). Five different liberalisation scenarios are considered to capture the Uruguay Round, AFTA and APEC agreements plus two more with greater agricultural reform.

The first scenario simulates an international trade regime in which the Uruguay Round is the only available force of liberalisation. This serves as a benchmark for results from other simulations. Three different shocks are applied: domestic tax and/or subsidy reductions in the agricultural sectors by 20 percent in developed countries and 13 percent in developing countries; agricultural export subsidy reductions by 36 percent in developed countries and 24 percent in developing countries; and border tariff reductions, in both agricultural and non-agricultural commodities (as specified in the GTAP version 3 database).

The second and third scenarios simulate the additional impact of AFTA, in addition to that of the Uruguay Round, on the ASEAN economies. AFTA only deals with reductions of import tariffs, which apply only to intra-ASEAN trade. Its schedule for completing the tariff reductions in 2003 is clearly faster than APEC's 2010 and 2020 targets. In our AFTA scenario, border tariffs between ASEAN member economies are reduced to zero while tariffs between ASEAN and non-ASEAN economies are maintained at the level committed for the Uruguay Round. The only difference between the second and third scenarios is their treatment of the agricultural sectors: in the second scenario, the agricultural sectors are not liberalised beyond Uruguay Round commitments, while in the third scenario, the agricultural sectors are liberalised for intra-ASEAN trade. This allows us to indicate the importance of agricultural trade reforms.

The fourth and fifth scenarios are a combination of the Uruguay Round and APEC MFN liberalisations (of zero tariffs in 2010 for developed and in 2020 for developing APEC economies, with the additional assumption that the latter economies have tariffs of 5 percent in 2010). Similar to the second and third scenarios, in the fourth scenario the

agricultural sectors are not liberalised by APEC economies whereas in the fifth scenario they are included in the liberalisation.

The results

Welfare

The results show that broader the country participation, the wider the sectoral coverage, and the greater the tariff reductions, the larger are the welfare benefits of trade liberalisation. The welfare gain for Indonesia as a result of participating in the Uruguay Round is estimated at about US\$3.3 billion per year. The aggregate gain for the five large ASEAN countries is US\$13.6 billion.

AFTA does not contribute much to the welfare gains over and above what has been achieved by the Uruguay Round, even for the ASEAN member economies who get an additional welfare gain of just US\$270 million on top of the gains from the Uruguay Round. Indonesia would get an additional benefit of US\$50 million from the implementation of AFTA in addition to the Uruguay Round.

The inclusion of the agricultural reform in AFTA slightly reduces the welfare gain for all ASEAN members compared with the previous scenario that excludes agriculture: trade diversion is outweighing trade creation. However, Indonesia is a gainer as it becomes a bigger agricultural exporter within ASEAN. The additional welfare gain for Indonesia as a result of including agriculture is about US\$ 90 billion.

The additional benefit from implementing APEC in addition to the Uruguay Round is much larger than that from AFTA. For Indonesia the APEC liberalisation excluding agriculture would boost welfare by \$530 million per year over and above the Uruguay Round benefits. If agriculture also is included in the APEC reform, Indonesia is no better off even though most other APEC economies are. The reason is that, unlike in the AFTA preferential scenario, Indonesia faces competition from other agricultural exporters within the APEC region when it involves MFN liberalisation.

Domestic Production

The results in Table 3.1 suggest that implementation of the Uruguay Round globally would reduce some primary production in Indonesia but would boost its textile and clothing sector enormously (although China's recent accession to WTO is likely to dampen apparel growth somewhat) as well as expand slightly its output of other manufactures and services. Agricultural output is projected to decline further with AFTA if agricultural liberalisation is excluded. If agriculture is fully included in AFTA, on the other hand, Indonesia's grain output would boom as new market opportunities became available (preferentially) within ASEAN. Under APEC reform on top of the Uruguay Round, the final columns of Table 3.1 suggest that Indonesia's textile and clothing sector would grow less than

without APEC reform, reflecting the model's projected growth in competition from China (which in fact is now happening anyway because of China's accession to WTO in December 2001). That slower expansion in textiles is offset by the slower contraction of mining under APEC. Notice too that the inclusion of agriculture in the APEC reform makes little difference to Indonesia. This is because agricultural comparative advantage is stronger in some other APEC economies, and so the farm expansion that is projected under AFTA does not show up when the agricultural reform takes the form of most-favoured-nation as under APEC.

Table 3.1: Impact of various trade liberalisations on sectoral outputs in Indonesia (percentage change)

Sectors	Uruguay	UR - AFTA,	UR-AFTA,	UR-APEC,	UR-APEC,	<i>US\$m^a</i>
	Round	Excluding	Including	Excluding	Including	
	(UR)	Agriculture	Agriculture	Agriculture	Agriculture	
	<i>Scenario 1</i>	<i>Scenario 2</i>	<i>Scenario 3</i>	<i>Scenario 4</i>	<i>Scenario 5</i>	
Paddy rice	-0.8	-0.8	-1.2	-0.4	-0.7	-51
Grains	0.5	0.5	31.7	1.0	2.6	22
Nongrain crops	-0.3	-0.4	-1.2	0.0	0.1	10
Livestock	1.4	1.4	1.6	1.7	1.6	52
Forestry	-0.4	-0.6	-0.9	-0.8	-0.6	-16
Fishing	0.3	3.5	3.3	1.1	1.3	49
Processed food	0.2	0.2	-0.2	0.6	0.3	77
Petroleum, coal, chemicals	0.4	0.3	0.1	1.5	1.5	339
Other mining	-11.7	-12.1	-12.2	-9.2	-9.1	-1580
Textiles/clothing	46.6	47.0	46.4	33.8	33.2	4016
Other manuf.	0.6	0.3	-0.1	-0.4	-0.2	-60
Services	2.0	2.0	1.9	2.0	2.0	1922

^a Change in value of sectoral output

Table 3.2: Impact of various trade liberalisations on sectoral exports in Indonesia (percentage change)

Sectors	Uruguay Round (UR) Scenario 1	UR - AFTA, UR- Excluding Agriculture Scenario 2	UR- AFTA, Including Agriculture Scenario 3	UR-APEC, Excluding Agriculture Scenario 4	UR-APEC, Including Agriculture Scenario 5	US\$m ^a
	Paddy rice	-14.6	-14.8	-16.9	-6.7	145.1
Grains	41.8	42.1	1816.2	44.4	46.7	9
Non-grain crops	44.0	43.8	42.0	44.9	46.8	976
Livestock	32.2	32.2	49.6	33.5	30.4	26
Forestry	9.2	9.0	8.9	18.8	19.7	8
Fishing	0.2	10.8	10.5	1.9	2.5	29
Processed food	1.8	2.3	-0.1	-0.5	-2.6	-41
Petroleum, coal, chemicals	18.1	17.8	17.4	14.5	14.5	563
Other mining	-11.9	-12.3	-12.4	-9.7	-9.6	-1061
Textiles/clothing	86.2	86.9	86.3	67.6	66.8	4014
Other manuf.	34.0	33.5	33.0	24.0	24.3	2177
Services	2.6	2.5	2.2	3.8	3.9	96

Patterns of Trade

The impact of trade liberalisation on the changing patterns of exports and imports are more significant than those of outputs. **Error! Reference source not found.** 3.2 shows that with all trade liberalisation scenarios, Indonesia's exports increase in all sectors except Other mining, and substantially so on non-grain crops, textiles/clothing and other manufactures. Similarly, imports of all groups of commodities are expected to increase with trade liberalisation, as shown in Table 3.3.

Table 3.3: Impact of various trade liberalisations on sectoral imports in Indonesia (percentage change)

Sectors	Uruguay Round (UR)	UR - AFTA, UR- Excluding Agriculture	UR- AFTA, Including Agriculture	UR-APEC, UR-APEC, Excluding Agriculture	UR-APEC, UR-APEC, Including Agriculture	US\$m ^a
	<i>Scenario 1</i>	<i>Scenario 2</i>	<i>Scenario 3</i>	<i>Scenario 4</i>	<i>Scenario 5</i>	
Paddy rice	18.3	18.6	20.0	19.0	6.4	0
Grains	2.9	3.0	12.3	4.2	-0.0	-0
Non-grain crops	87.8	88.1	90.2	88.8	90.7	898
Livestock	12.5	12.7	15.1	11.6	1.7	1
Forestry	66.0	66.4	66.4	46.8	46.7	10
Fishing	119.9	121.0	121.1	92.9	92.6	16
Processed food	31.5	31.8	33.8	19.6	21.1	206
Petroleum, coal, chemicals	18.1	18.2	18.2	11.4	11.3	910
Other mining	9.0	9.1	9.0	0.3	0.3	4
Textiles/clothing	111.8	112.8	112.5	94.6	94.5	1475
Other manuf.	24.4	24.5	24.5	18.2	18.2	2541
Services	6.2	6.4	6.6	7.5	7.5	415

Conclusion

The result of this study has, in some ways, confirmed results of prior studies (e.g., Anderson et. al., 1996) on trade liberalisation in the Asia Pacific region. The general point is that the deeper the tariff cuts and the wider the product and country coverage of trade liberalisation, the bigger the welfare gains. This increase in welfare results from more efficient resource allocation. Among the existing liberalisation commitments in the Asia Pacific region, the implementation of the two biggest commitments, namely the Uruguay Round and APEC, would greatly benefit Indonesia. AFTA, on the other hand, is expected to contribute little to welfare gain for Indonesia. The explanation is that AFTA creates a discriminatory trading block in ASEAN, where trade diversion is offsetting potential trade creation. This suggests ASEAN would be better off economically from pursuing more open and non-discriminatory trade liberalisation through APEC or the new round of the WTO.

Agricultural liberalisation through APEC is expected to create an additional welfare gain for most economies, even though its magnitude tends to be small and it varies between economies. Its impact on Indonesia is small

except under AFTA, where it gets preferential access to other ASEAN markets.

Of course not every sector in the economy would benefit equally from trade liberalisation. In the Indonesian case, the biggest gain is expected to take place in the textile and garment sector, at the expense of the mining sector. Within the agricultural sector, resources tend to move away from paddy rice to grain crops and livestock.

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