

Clarete, Ramon L.; Villamil, Isabela Rosario G.

Working Paper

Readiness of the Philippine Agriculture and Fisheries Sectors for the 2015 ASEAN Economic Community: A rapid appraisal

PIDS Discussion Paper Series, No. 2015-43

Provided in Cooperation with:

Philippine Institute for Development Studies (PIDS), Philippines

Suggested Citation: Clarete, Ramon L.; Villamil, Isabela Rosario G. (2015) : Readiness of the Philippine Agriculture and Fisheries Sectors for the 2015 ASEAN Economic Community: A rapid appraisal, PIDS Discussion Paper Series, No. 2015-43, Philippine Institute for Development Studies (PIDS), Makati City

This Version is available at:

<https://hdl.handle.net/10419/127057>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



Readiness of the Philippine Agriculture
and Fisheries Sectors for the 2015 ASEAN
Economic Community: A Rapid Appraisal

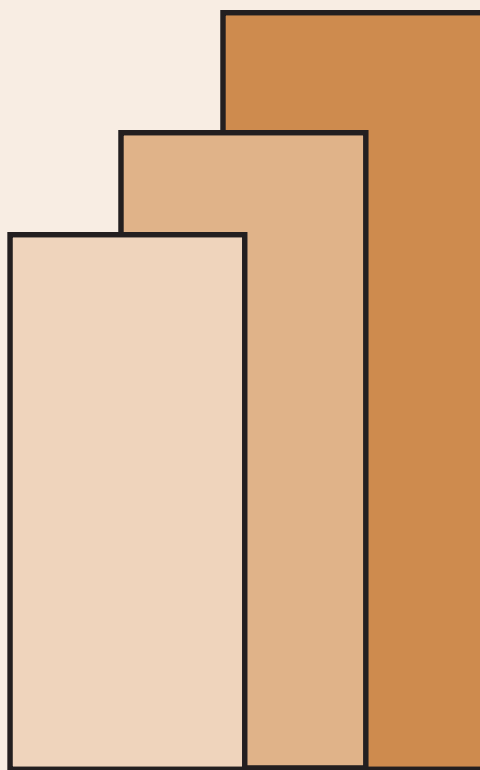
Ramon L. Clarete and Isabela R.G. Villamil

DISCUSSION PAPER SERIES NO. 2015-43

The *PIDS Discussion Paper Series* constitutes studies that are preliminary and subject to further revisions. They are being circulated in a limited number of copies only for purposes of soliciting comments and suggestions for further refinements. The studies under the *Series* are unedited and unreviewed.

The views and opinions expressed are those of the author(s) and do not necessarily reflect those of the Institute.

Not for quotation without permission from the author(s) and the Institute.



September 2015

For comments, suggestions or further inquiries please contact:

The Research Information Staff, Philippine Institute for Development Studies

5th Floor, NEDA sa Makati Building, 106 Amorsolo Street, Legaspi Village, Makati City, Philippines

Tel Nos: (63-2) 8942584 and 8935705; Fax No: (63-2) 8939589; E-mail: publications@mail.pids.gov.ph

Or visit our website at <http://www.pids.gov.ph>

READINESS OF THE PHILIPPINE AGRICULTURE AND
FISHERIES SECTORS FOR THE 2015 ASEAN
ECONOMIC COMMUNITY: A RAPID APPRAISAL

FINAL REPORT

Ramon L. Clarete and Isabela Rosario G. Villamil

Table of Contents

| | | |
|------|---|----|
| I. | Background..... | 1 |
| II. | The ASEAN Economic Community: An Overview..... | 1 |
| III. | AEC Blueprint for Agriculture and Fisheries: Status of Implementation | 4 |
| A. | Trade Liberalization and Facilitation | 5 |
| 1. | Tariff Reduction and Elimination | 5 |
| 2. | Non-Tariff Barriers..... | 7 |
| 3. | Rules of Origin | 10 |
| 4. | Trade Facilitation and Customs Integration | 12 |
| B. | Investment Liberalization and Facilitation | 14 |
| C. | Priority Integration Sectors | 16 |
| D. | Food, Agriculture, and Forestry | 16 |
| 1. | Standards Development and Implementation | 17 |
| 2. | Cooperation, Joint Approaches, and Technology Transfer | 21 |
| 3. | Promotion of Agricultural Cooperatives..... | 21 |
| E. | Infrastructure Development..... | 22 |
| 1. | ASEAN Transport Facilitation..... | 22 |
| IV. | Trends in Agriculture and Fisheries Trade | 23 |
| A. | Trade Openness..... | 23 |
| B. | Trade Composition and Geographic Orientation | 26 |
| 1. | Agricultural Imports..... | 26 |
| 2. | Agricultural and Fisheries Exports | 28 |
| C. | Comparative Advantage | 32 |
| D. | Analysing Regional Trade | 34 |
| V. | Economic Impact of AEC Tariff Reforms..... | 34 |
| A. | The Economic Model Used..... | 35 |
| B. | Simulation Results | 38 |
| 1. | Tradedflows | 38 |
| 2. | Sectoral Outputs..... | 43 |
| VI. | Readiness for AEC: Views from Private Stakeholders..... | 45 |
| A. | Factors Affecting Readiness | 45 |

| | |
|--|----|
| B. How About Local Producers? | 47 |
| VII. Competitiveness of Philippine Agricultural Industries | 51 |
| A. Is the Philippine A&F Sector Ready for AEC? | 80 |
| VIII. Readiness Enhancement Measures | 86 |
| A. Value-chain roadmaps..... | 86 |
| 1. Preliminary Phase | 87 |
| 2. Development Phase..... | 92 |
| 3. Follow-up..... | 93 |
| Bibliography | 95 |

List of Tables

| | |
|---|----|
| Table 1. Pillars of the ASEAN Economic Community..... | 3 |
| Table 2. Philippine Unimplemented Prioritized AEC 2015 Deliverables, as of July 2013 | 4 |
| Table 3. Simple Average Tariff Rates, Philippine Agriculture and Fisheries Sector (in %) | 6 |
| Table 4. Tariff Reduction Schedule (TRS) for Philippine HS List..... | 8 |
| Table 5. Percentage of Tariff Lines at 0% in the ATIGA Tariff Schedule of 2013 | 8 |
| Table 6. Agriculture and Fisheries Trade Openness Index..... | 24 |
| Table 7. Agriculture and Fisheries Sector Export Value and Share..... | 24 |
| Table 8. Agriculture and Fisheries Sector Import Value and Share | 25 |
| Table 9. Philippines Imports and Import Shares of Agriculture and Fisheries Products, 2012 | 27 |
| Table 10. Philippines Top 10 Agriculture and Fisheries Imports from ASEAN, 2012 | 28 |
| Table 11. Exports and Export Shares of Agriculture and Fisheries (A&F) Products, 2012 (in %)..... | 29 |
| Table 12. Philippine Top 10 Agriculture and Fisheries Exports to ASEAN, 2012 | 30 |
| Table 13. Geographic Orientation of Philippine Agriculture and Fisheries Trade | 31 |
| Table 14. Normalized Revealed Comparative Advantage (NRCA): Top 10 Exports, 2012 | 33 |
| Table 15. Trade Complementarity Index, Philippine Agriculture and Fisheries Products | 34 |
| Table 16. The Geographical Regions of the Model..... | 35 |
| Table 17. The Production Sectors of the Model | 36 |
| Table 18. Changes in Overall Trade Values, by Region, world prices, US\$ million | 38 |
| Table 19. Percentage Increase of Tradeflows in Crops by Country | 40 |
| Table 20. Percentage Increase in Tradeflows of Animal Products by country | 41 |
| Table 21. Percentage Increase in Tradeflows of Processed Agri-based Products, by country..... | 43 |
| Table 22. Percentage Increase in Sectoral Outputs, by country. | 44 |
| Table 23. DRCR Estimates for Selected Agricultural | 52 |
| Table 24. Top 20 Exports, Philippines, 5-Year Average (2008-2012)..... | 53 |
| Table 25. Top 20 Imports, Rest of ASEAN, 5-Year Average (2008-2012)..... | 54 |
| Table 26. Coconut Products: Potential Export Winners, Export Volume, tonnes, 2010-2012 | 56 |
| Table 27. Government Expenditure in Agriculture, Forestry, and Fishing | 82 |

List of Figures

| | |
|--|----|
| Figure 1. Philippine Product Orientation of Agriculture and Fisheries Exports, 2012 | 31 |
| Figure 2. Philippine Geographic Orientation of Agriculture and Fisheries Exports, 2012 | 32 |
| Figure 3. Key Industrial Statistics: Philippine Coconut Industry..... | 58 |
| Figure 4. Key Industrial Statistics: Philippine Banana Industry | 62 |
| Figure 5. Key Industrial Statistics: Philippine Sugar Industry | 66 |
| Figure 6. Key Industrial Statistics: Philippine Tuna Industry | 70 |
| Figure 7. Key Industrial Statistics: Philippine Corn Industry | 74 |
| Figure 8. Key Industrial Statistics: Philippine Hog and Chicken Industries | 78 |

List of Annexes

| | |
|---|-----|
| Annex 1: AEC Actions with Possible Implications on the A&F Sector: Tariff Measures..... | 98 |
| Annex 2: AEC Actions with Possible Implications on the A&F Sector: Non-Tariff Measures..... | 100 |
| Annex 3: AEC Actions with Possible implications on the A&F Sector: Food, Agriculture and Forestry ... | 103 |
| Annex 4: Philippine Sensitive List Tariff Reduction Schedule | 106 |
| Annex 5: Flowchart for Determining the Origin of a Good..... | 108 |
| Annex 6: List of Philippine National Single Window Participating Agencies | 109 |
| Annex 7: List of Interviewees..... | 110 |
| Annex 8. Exploring Export Opportunities | 111 |
| Annex 9. Global Competitive Index, Philippines, 2014-2015..... | 112 |

Abstract

The ASEAN Economic Community (AEC) transforms the ASEAN region into a single market and production base by 2015. This promotes greater competition for the Philippine agriculture and fisheries (A&F) sector. With the country's A&F sector lagging behind its neighboring ASEAN countries, there are fears that local industries will be displaced. The Global Trade Analysis Model suggests an increase in both imports and exports as an impact of tariff reforms. Sectors ready for integration include mangoes, bananas, and pineapples. For the coconut sector, intensification of planting, replanting, and product diversification are needed to enhance and maintain supply. Production increase for perishable commodities such as onions and meats entails the need for lower power costs. With corn as a potential export commodity, cultivation areas are being expanded and agricultural policies are being aligned with the policies of AFTA. To reap benefits from the AEC, several measures must be performed, i.e., diversification and product quality upgrading. Public support must focus on providing adequate infrastructure, general services, R&D and extension programs. Particularly, this paper recommends modernizing the country's value chains in the A&F sector to effectively mobilize A&F exports into the ASEAN market. This is done by creating industry road maps to equip major stakeholders knowledge on market opportunities; organizing the value chains and effectively assisting their various participants to comply with international trade product standards, processes, and regulations; building a capability for effectively managing the risk of disputes among value chain participants; and promoting the cooperation among farmers, small and medium enterprises, and large enterprises within these agro-based value chains.

Keywords: Asean Economic Community, value chain, agriculture and fisheries, tariff reforms

READINESS OF THE PHILIPPINE AGRICULTURE AND FISHERIES SECTORS FOR THE 2015 ASEAN ECONOMIC COMMUNITY: A RAPID APPRAISAL

Ramon L. Clarete and Isabela Rosario G. Villamil

I. Background

The Congressional Oversight Committee on Agricultural and Fisheries Modernization (COCAFAM) commissioned the Philippine Institute for Development Studies (PIDS) to conduct a rapid assessment of the readiness of the Philippines for the 2015 ASEAN economic integration. This study is designed to provide incoming members of the 16th Congress with accurate and updated information that will help them make appropriate policy decisions especially with regards to budget-related matters aimed at helping the agriculture and fisheries sector better take advantage of the ASEAN economic integration.

The ASEAN member states (AMSs), Philippines included, are working to become an economic community in 2015. Nearly ten years back in October 2003, the ASEAN Leaders signed the Declaration of the ASEAN (Bali) Concord II, declaring the ASEAN Economic Community (AEC) to be the goal of regional economic integration in Southeast Asia and primary means for attaining the ASEAN 2020 Vision of a Southeast Asia that is “a stable, prosperous and highly competitive economic region in which there is a free flow of goods, services investment and free flow of capital, equitable economic development and reduced poverty and socio-economic disparities”.

In 2006, the Economic Ministers meeting in Kuala Lumpur adopted and agreed to implement the AEC Blueprint by 2015, which lists down the obligations of member states to realize the AEC. The ASEAN Heads of State meeting in Cebu City in 2007 (12th Summit) had affirmed the AEC Blueprint. Five years later in 2012, the ASEAN Leaders once again renewed this commitment to transform ASEAN into an economic community in April 2012 in Phnom Penh.

II. The ASEAN Economic Community: An Overview

The ASEAN Economic Community (AEC) is a preferential trade agreement (PTA). PTAs have become to be the norm these recent years, particularly because of the impasse in the Doha Round of multilateral trade negotiations under the WTO, and the urgency to liberalize and facilitate trade and investments in support of international production networks. According to the WTO (2011), every WTO member is involved in at least one PTA agreement. The share of preferential trade to total world merchandise trade rose from 18% in 1990 to 35% in 2010. Of the merchandise trade covered by PTA agreements, 65% are manufactured goods. Most of these are parts and components, suggesting a link between some PTAs and global or regional supply chains.

The use of PTAs surged in the 1990s, nearly all in the form of free trade agreements (FTAs). FTAs allow zero or very low trade restrictions among members, while allowing each one to maintain their respective trade policies with non-members of the FTA. In the order of things, FTAs' 'next step' in the ladder of economic integration are customs unions. In 2000s however, these FTAs did not evolve into customs unions. Instead, the countries involved in free trade agreements in the 1990s have deepened their respective FTAs and expanded their scopes of reforms beyond those that were agreed under the WTO. These PTAs have also changed from being 'regional' to include trading partners able and willing to subscribe to the standards of trade and investment liberalization and facilitation measures of the recent PTAs such as for example the US-Korea free trade agreement.

The ASEAN Free Trade Agreement (AFTA) was completed in January 2010, except for a few sensitive products, and for the CLMV member states, namely Cambodia, Lao PDR, Myanmar, and Vietnam. The latter were given longer time periods to implement their obligations to eliminate restrictions to intra-ASEAN trade. The AEC Blueprint (ASEAN, 2007) incorporates the post-2010 enhancements of AFTA, such as for example the reduction to 5% the import tariff on sugar imports by the Philippines from the region in 2015. The average tariff rate of the ASEAN-6, namely Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, and Thailand, under the AFTA CEPT was reduced from 12.8% in 1993 to 0.97% in 2008. Intra-ASEAN trade is at least 25% of total ASEAN trade.

The complementary provisions to reducing intra-ASEAN tariff restrictions to between 5 to 0% include the agreements on rules of origin, non-tariff measures, trade facilitation, customs reform, standards and conformance, and related agreements. These and the tariff reforms were codified in 2008 into the ATIGA (ASEAN, 2008) and most of its provisions, while binding on its own, are integral parts of the AEC Blueprint.

The European Union (EU) had been an economic community before becoming what it is now a monetary union. There are important differences between the experiences of EU and ASEAN. To mention two of these, one is that the ASEAN member states did not agree to become a customs union, a stage higher than free trade agreements that unify all external tariffs of member states even as it is maintaining no tariff barriers to each other's trade. Customs union agreements are difficult to negotiate particularly if the respective external tariffs of member states are far from each other, which is the case for ASEAN with Singapore being largely a free trading country and larger economies like Philippines and Indonesia with relatively higher tariff protection of their respective domestic industries.

Two, there is always the enduring thought of analysts that the ASEAN Economic Community will be largely statutory in nature, and wanting in enforcement in a few but important provisions. The experience of ASEAN of their tariff liberalization under CEPT has indicated member states will continue to defend their respective protection on sensitive industries, and the smaller member states such as Singapore will tend to respect these views. Rice for example is one of the agricultural products whose tariff protection under FTA is at least 20% for the major rice importing countries. Philippines has presently a 40% tariff rate on ASEAN rice and is committed to bring this down to only 35% in 2015. This is a peak rate, far from the normal level of tariff rates among nations engaged in an FTA. Thus, the

pragmatism of ASEAN may continue in the case of other important provisions in the ASEAN Economic Community. For example, the continuing use of quantitative import restriction by the Philippines is accepted by other member states despite the rule and the AEC prohibiting the use of non-tariff barriers. Additionally, the compliance of member states with their obligations to provide higher national floors for ownership by foreigners of local businesses or of agricultural lands may continue to be violated on the ground that non-compliant member states are facing political difficulties in changing their respective basic laws.

The AEC Blueprint was enabled by the ASEAN Leaders on November 20, 2007 at their 12th Summit in Cebu City. It concretizes their collective aspiration articulated in the their ASEAN Concord II forged at Bali, Indonesia, which is to form an AEC by 2020, and accelerated its implementation to 2015, five years earlier. The member states aim under this vision to attain “higher levels of economic dynamism, sustained prosperity, inclusive growth and integrated development of ASEAN”. It recognizes the importance of building a more ‘interdependent and integrated’ future for this part of the world, and of closing the development divide between the original ASEAN-6 states and the CLMV states.

The AEC has four pillars, namely (1) single market and production base, (2) competitive economic region, (3) equitable economic development, and (4) integration to the global economy. Table 1 shows the more specific themes covered by each pillar.

Table 1. Pillars of the ASEAN Economic Community

| Single Market and Production Base | Competitive Economic Region | Equitable Economic Development | Integration to the Global Economy |
|-----------------------------------|-----------------------------|---------------------------------------|---|
| 1. Free flow of goods | 8. Competition policy | 15. Small and medium enterprises | 17. Coherent approach towards external economic relations |
| 2. Free flow of services | 9. Consumer protection | 16. Initiatives for ASEAN integration | 18. Enhanced participation in global supply networks |
| 3. Free flow of investment | 10. IPR | | |
| 4. Freer flow of capital | 11. Transport | | |
| 5. Free flow of skilled labor | 12. Energy | | |
| 6. Priority integration sectors | 13. Taxation | | |
| 7. Food, agriculture and forestry | 14. e-Commerce | | |

Source: ASEAN Secretariat

The AEC Blueprint is a comprehensive plan, with 17 core elements and 176 priority actions, to be undertaken within a strategic schedule of four implementation phases: 2008-2009, 2010-2011, 2012-2013, and 2014-2015. According to the latest ASEAN annual report (ASEAN Secretariat, 2013), approximately 78% of measures due under the Blueprint has been implemented as of March 2013.

The Blueprint includes national measures (those that require individual implementation) as well regional measures (those that are only considered implemented when all ten AMSs have already done so in their country). The latest AEC Scorecard published in 2012 provides an assessment of AEC progress for each of the AMSs during the first two phases of implementation: 2008-2009 and 2010-2011. The Philippines obtained a 73% rating for the period 2010-2011. However, this score could be misleading—it does not take into consideration the effectiveness of implementation and is only based on a tabulation of “yes” or “no” answers (Aldaba, Briones, Israel, Llanto, Medalla, & Milo, 2013).

III. AEC Blueprint for Agriculture and Fisheries: Status of Implementation

The agriculture and fisheries industries are covered by selected provisions in the AEC Blueprint under the areas ‘free flow of goods’ and ‘food, agriculture and forestry’, which in turn fall under the pillar of single market and production base in Table 1. While it may be argued that the sector of agriculture and fisheries are likewise the subject of the other three pillars, such as for example the competition policy of the second pillar, the bulk of AEC blueprint measures that directly apply to these industries is found in the first pillar. As of July 2013, approximately 80% of the Philippines’s priority deliverables related to agriculture and fisheries have been implemented. There are 12 unimplemented measures (Table 2), most of which fall under trade facilitation and customs integration, and 7 of which are regional commitments. The number of unimplemented regional measures indicates the difficulty of harmonizing customs systems across AMSs. Other measures with possible large implications on the agriculture and fisheries sectors are in ‘free flow of investment’, ‘priority integration sectors’, and ‘transport’.

Table 2. Philippine Unimplemented Prioritized AEC 2015 Deliverables, as of July 2013

| # | Measure | Coverage |
|----|---|----------|
| 1 | Effective elimination of the third tranche of NTBs | National |
| 2 | Develop advance ruling systems for tariff classification, value assessment for customs purposes and origin determination | National |
| 3 | Implement the ASEAN Cargo Processing Model | National |
| 4 | Finalization and implementation of Protocol 2 relating to ASEAN Customs under the ASEAN Framework on the Facilitation of Goods in Transit | Regional |
| 5 | Finalization and implementation of Protocol 7 relating to ASEAN Customs under the ASEAN Framework on the Facilitation of Goods in Transit | Regional |
| 6 | Develop guidelines for valuation advice and valuation ruling system | Regional |
| 7 | Develop the ASEAN Customs Training Module of Implementation of CEPT/ATIGA ROOs | Regional |
| 8 | Develop the training materials of essential customs techniques | Regional |
| 9 | Develop the training materials of customs modernization and management | Regional |
| 10 | Compile and publish national legislations related to customs enforcement | National |
| 11 | Development of the legal framework for implementation of measures of simplifying, harmonizing, and standardizing trade and customs regarding ASEAN Single Windows | Regional |
| 12 | Define and finalize country-specific verifiers for legal timber | National |

Source: Department of Trade and Industry.

A. Trade Liberalization and Facilitation

1. Tariff Reduction and Elimination

The specific headings under the free flow of goods include the enhancements of the CEPT scheme, tariff reduction, elimination of tariffs, and elimination of non-tariff barriers. Annex 1 shows the specific provisions under each of these headings.

There are no specific actions required under the heading CEPT scheme. Member states, if they determine it is in their best interest, may improve their CEPT tariff rates. Under a free trade area, all tariffs may range from 0 to 5%. A possible enhancement may include that all tariff lines higher than 5% are reduced to an even lower tariff protection. However, this action is left to the individual member states to take voluntarily.

Under the heading of elimination of tariffs, there are actions that apply to ASEAN 6 countries, which include the Philippines. These countries are required to eliminate tariffs, i.e. set them equal to 0%, on all products in the included list (IL), i.e. included in the tariff reduction program of CEPT. These include those products of the priority integration sectors (PIS). Another action is the phasing in of selected tariff lines into the CEPT scheme. These tariff lines or products belong to the Sensitive List (SL) and Highly Sensitive List (HSL), declared by each member state to be temporarily exempt from tariff reduction under CEPT. However, and as provided for under the CEPT agreement, their tariff rates should be reduced to 0 to 5% for SL products and to the agreed end- rate for HSL products by 2011.

As part of its commitments to ASEAN, the Philippines passed Executive Order No. 850¹ in December 2009 removing tariffs on imports from ASEAN except for products in the SL and HSL. The current average tariff of agriculture and fisheries products in the Philippines is in Table 3. The table also shows the averages by 2015 based on the Philippine tariff reduction schedule (TRS). Approximately 94% of tariff lines in the TRS is already duty free, i.e. 0% tariff rate. The average tariff of dutiable products in 2013 is 13.01%, which should fall to 10.23% by 2015.

The Philippine Sensitive List includes swine, poultry, cassava, sweet potatoes, corn, grain sorghum, and sugar (see Annex 5) for the detailed list). Except for sugar, the tariff rates of products in the SL are already down to 5%. Rice is the only item in the Philippine Highly Sensitive List. The TRS of rice is shown

¹ “Modifying the Rates of Duty on Certain Imported Articles as Provided Under the Tariff and Customs Code of 1978, As Amended in Order to Implement the Commitment to Eliminate the Tariff Rates on the Remaining Products in the Inclusion List in Year 2010 Under the Common Effective Preferential Tariff (CEPT) Scheme for the ASEAN Free Trade Area (AFTA)/ASEAN Trade in Goods Agreement (ATIGA)”

in **Error! Reference source not found.** Based on the TRS, rice tariffs will be reduced to 35% while sugar tariffs should fall to 5% by 2015.

Table 3. Simple Average Tariff Rates, Philippine Agriculture and Fisheries Sector (in %)

| Ch. Code | Chapter Description | All Items excluding N/A | | | Dutiable Items | | | Duty Free Tariff Lines (%) |
|----------|---|-------------------------|-------------|-------------|----------------|-------------|-------------|----------------------------|
| | | No. of Lines | 2013 Tariff | 2015 Tariff | No. of Lines | 2013 Tariff | 2015 Tariff | |
| 01 | Live animals | 65 | 0.77 | 0.77 | 10 | 5.00 | 5.00 | 85% |
| 02 | Meat and edible meat offal | 124 | 2.26 | 2.26 | 56 | 5.00 | 5.00 | 55% |
| 03 | Fish, crustaceans, molluscs, aquatic invertebrates nes | 328 | 0 | 0 | 0 | 0 | 0 | 100% |
| 04 | Dairy products, eggs, honey, edible animal product nes | 57 | 0 | 0 | 0 | 0 | 0 | 100% |
| 05 | Products of animal origin, nes | 27 | 0 | 0 | 0 | 0 | 0 | 100% |
| 06 | Live trees, plants, bulbs, roots, cut flowers etc | 28 | 0 | 0 | 0 | 0 | 0 | 100% |
| 07 | Edible vegetables and certain roots and tubers | 116 | 0.26 | 0.26 | 6 | 5.00 | 5.00 | 95% |
| 08 | Edible fruit, nuts, peel of citrus fruit, melons | 87 | 0 | 0 | 0 | 0 | 0 | 100% |
| 09 | Coffee, tea, mate and spices | 72 | 0 | 0 | 0 | 0 | 0 | 100% |
| 10 | Cereals | 46 | 16.74 | 14.67 | 21 | 36.67 | 32.14 | 54% |
| 11 | Milling products, malt, starches, inulin, wheat gluten | 39 | 0 | 0 | 0 | 0 | 0 | 100% |
| 12 | Oil seed, oleagic fruits, grain, seed, fruit, etc, nes | 75 | 0 | 0 | 0 | 0 | 0 | 100% |
| 13 | Lac, gums, resins, vegetable saps and extracts nes | 20 | 0 | 0 | 0 | 0 | 0 | 100% |
| 14 | Vegetable plaiting materials, vegetable products nes | 13 | 0 | 0 | 0 | 0 | 0 | 100% |
| 15 | Animal, vegetable fats and oils, cleavage products, etc | 156 | 0 | 0 | 0 | 0 | 0 | 100% |
| 16 | Meat, fish and seafood food preparations nes | 79 | 0 | 0 | 0 | 0 | 0 | 100% |
| 17 | Sugars and sugar | 45 | 6.40 | 1.78 | 16 | 18.00 | 5.00 | 64% |

| Ch. Code | Chapter Description | All Items excluding N/A | | | Dutiable Items | | | Duty Free Tariff Lines (%) |
|---------------------------------|---|-------------------------|-------------|-------------|----------------|-------------|-------------|----------------------------|
| | | No. of Lines | 2013 Tariff | 2015 Tariff | No. of Lines | 2013 Tariff | 2015 Tariff | |
| | confectionery | | | | | | | |
| 18 | Cocoa and cocoa preparations | 17 | 0 | 0 | 0 | 0 | 0 | 100% |
| 19 | Cereal, flour, starch, milk preparations and products | 56 | 0 | 0 | 0 | 0 | 0 | 100% |
| 20 | Vegetable, fruit, nut, etc food preparations | 84 | 0 | 0 | 0 | 0 | 0 | 100% |
| 21 | Miscellaneous edible preparations | 58 | 0 | 0 | 0 | 0 | 0 | 100% |
| 22 | Beverages, spirits and vinegar | 55 | 0 | 0 | 0 | 0 | 0 | 100% |
| 23 | Residues, wastes of food industry, animal fodder | 39 | 0 | 0 | 0 | 0 | 0 | 100% |
| 24 | Tobacco and manufactured tobacco substitutes | 32 | 0 | 0 | 0 | 0 | 0 | 100% |
| AGRICULTURE AND FISHERIES TOTAL | | 1,718 | 0.83 | 0.65 | 109 | 13.01 | 10.23 | 94% |

Source: Author own calculations from ASEAN TRSs.

The Sensitive List of the Philippines includes swine, poultry, cassava, sweet potatoes, corn, grain sorghum, and sugar (see Annex 3) for the detailed list). Except for sugar, the tariff rates of products in the SL are already down to 5%. Rice is the only item in the Philippine Highly Sensitive List. The TRS of rice is shown in **Error! Reference source not found.**. Based on the TRS, rice tariffs will be reduced to 35% while sugar tariffs should fall to 5% by 2015.

The reduction and elimination of tariffs in ASEAN is considered to be successful. As of 2010, tariff rates were virtually zero in the ASEAN-6 (Brunei, Indonesia, Malaysia, the Philippines, Singapore, and Thailand) and averaged only 2.6% in the newer CLMV (Cambodia, Lao PDR, Myanmar, and Vietnam) member states. By 2015, rates on 98 to 100% of all tariff lines should be in the 0-5% range. There is no reason to believe that tariff reduction and elimination would not continue as scheduled. Table 5 shows the percentage of tariff lines with 0% tariff as of 2013 for each of the ASEAN countries. About 30% of the goods in the CLMV currently have rates greater than zero.

2. Non-Tariff Barriers

Non-tariff barriers (NTBs) and the NTB effects of non-tariff measures (NTMs) are a primary concern in ASEAN. The Mid-Term Review of the Implementation of the AEC Blueprint (MTR) released by ERIA in 2012 listed four major groups of NTMs: (i) technical barriers to trade; (ii) sanitary and phyto-sanitary

standards; (iii) customs related measures; and (iv) “core NTMs”. Core NTMs include non-automatic licensing, quantitative restrictions, prohibitions, enterprise-specific, single channel for imports, and foreign exchange market restrictions. These are the most likely candidates for being NTBs. (ERIA, 2012)

Table 4. Tariff Reduction Schedule (TRS) for Philippine HS List

| AHTN 2012 | Description | ATIGA Tariffs (%) | | | |
|------------|---|-------------------|------|------|------|
| | | 2012 | 2013 | 2014 | 2015 |
| 10.06 | Rice. | | | | |
| 1006.10 | - Rice in the husk (paddy or rough): | | | | |
| 1006.10.10 | -- Suitable for sowing | 40 | 40 | 40 | 35 |
| 1006.10.90 | -- Other | 40 | 40 | 40 | 35 |
| 1006.20 | - Husked (brown) rice: | | | | |
| 1006.20.10 | -- Thai Hom Mali rice | 40 | 40 | 40 | 35 |
| 1006.20.90 | -- Other | 40 | 40 | 40 | 35 |
| 1006.30 | - Semi-milled or wholly milled rice, whether or not polished or glazed: | | | | |
| 1006.30.30 | -- Glutinous rice | 40 | 40 | 40 | 35 |
| 1006.30.40 | -- Thai Hom Mali rice | 40 | 40 | 40 | 35 |
| | -- Other: | | | | |
| 1006.30.91 | --- Parboiled rice | 40 | 40 | 40 | 35 |
| 1006.30.99 | --- Other | 40 | 40 | 40 | 35 |
| 1006.40 | - Broken rice: | | | | |
| 1006.40.10 | -- Of a kind used for animal feed | 40 | 40 | 40 | 35 |
| 1006.40.90 | -- Other | 40 | 40 | 40 | 35 |

Source: ASEAN Secretariat.

Table 5. Percentage of Tariff Lines at 0% in the ATIGA Tariff Schedule of 2013

| Country | Percentage of Tariff Lines (%) | | |
|--------------------------|--------------------------------|-----------------|--------------------|
| | 0% | Greater than 0% | Other ¹ |
| Brunei | 99.27 | - | 0.73 |
| Indonesia | 98.87 | 0.17 | 0.96 |
| Malaysia | 98.74 | 0.59 | 0.66 |
| Philippines ² | 98.62 | 1.11 | 0.27 |
| Singapore | 100.00 | - | - |
| Thailand | 99.85 | 0.15 | - |
| ASEAN-6 | 99.20 | 0.35 | 0.45 |
| Cambodia | 40.77 | 59.23 | - |
| Laos | 78.73 | 20.36 | 0.91 |
| Myanmar | 79.66 | 19.69 | 0.65 |
| Vietnam | 72.24 | 25.77 | 1.99 |
| CLMV | 68.88 | 30.20 | 0.92 |

¹ Products in the Sch-H (current GEL or general exception list). Automotive CKD for Vietnam are also in this category.

² As of 12 Feb 2013, these TRSs are still tentative because it has not been endorsed by the AFTA Council.

Source: ASEAN Secretariat

Non-tariff barriers, not tariff measures, make up the greater part of trade-related costs. These are estimated to be equivalent to an average tariff rate of 44% on developing countries' exports (Asian Development Bank 2006, 293; Anderson and Wincoop 2004). In contrast, the US and the EU maintain the average rate of 3% against developing countries' exports. Reducing this by 40% would lead to market access gains of only 2.3% for developing countries' exports. Djankov et al. 2006 wrote how the elimination of all import tariffs by all developed countries would push up developing economies' exports by 6%. At the equivalent rate of 44%, reducing the trade costs associated with the implementation of trade regulations is expected to imply substantially greater penetration of developing countries' products in developed countries.

To realize free flow of goods, AEC Blueprint targets were set to remove all NTBs by 2010 for Thailand, Malaysia, Singapore, Indonesia, and Brunei Darussalam, by 2012 for the Philippines, and by 2015 (with flexibilities to 2018) for the CLMV countries. ATIGA aims to eliminate NTBs and reduce the NTB effects of NTMs. However, this has not been easy to do. According to the MTR, the voluntary approach to NTB elimination has resulted in the removal of few NTBs. With the complexity of NTMs and NTBs, elimination of all NTBs among ASEAN countries is expected to be delayed. Unfortunately, there is also no updated and comprehensive database of NTMs in the region so it is difficult to monitor progress.

In the Philippines, the main NTMs are in the form of technical barriers to trade (TBTs) and sanitary and phytosanitary (SPS) requirements. Trade facilitation measures, i.e. streamlining the cargo clearance procedures at the Bureau customs, streamlining of the same with respect to the application of import or export permits from the various agencies under the Department of Agriculture, and implementation of the national single window and the national trade repository system, reduces the costs associated with complying with these NTMs, and thus eliminates or reduces at least the NTB effect of NTMs.

Rice continues to be subject to a quantitative import restriction (QR) under a special treatment the country enjoys from the WTO. This privilege was granted from 1995 to June 2004. However, the country was able to secure a five-year extension of it up to June 30, 2012. The charter of the National Food Authority (P.D. 4) as amended by the R.A. 8178 or the Agricultural Tariffication Act of 1996 provides the NFA sole monopoly in rice imports, although it may delegate the task of bringing in the required import volumes for rice security to the private sector. In the AEC blueprint, the Philippines committed to eliminate this non-tariff barrier by 2012, a measure that the Philippines had not complied with. Before the expiry of the special treatment in June 2012, the Philippines applied for a waiver since a second extension is no longer possible under the rules of the WTO. In June 2014, the country secured a waiver from the WTO allowing the country to maintain its rice QR, which in effect represents the second extension of the special treatment that the country enjoyed under the WTO. The waiver expires in June 2017.

Clarete (2014) had argued that the Philippines is better off if it just gave up its NTB on rice and tariffied the rice for the following reasons. One, the measure is costly for rice consumers which include rice farmers, and for the entire economy, the amount of which runs into billions of pesos each year. Two, a monopoly in rice imports in the hands of the NFA exposes the country to costly mistakes in deciding how

much rice to import. In 2008, the country's rice imports exceeded the world's expectation. Three, rice is a high cost industry. It would be cheaper for the country to simply import about 10 to 15% of it from Vietnam. Clarete further argued that the CEPT tariff rate for rice be set to 10% not 35% as this may only encourage rice smuggling. With 10%, there is high likelihood that importers will comply with the customs duty, and the tariff revenues can be earmarked for cash transfer program benefitting the poorer farmers.

3. Rules of Origin

The administration of import related rules and regulations including rules of origin (ROO), customs administration, and other trade-related regulations can become de-facto non-tariff barriers. The AEC Blueprint prescribes actions that seek to prevent this from occurring. Annex 2 lists down these actions.

The preferential nature of the AEC tariff liberalization measures requires rules of origin to determine eligibility to lower import tariffs. The provisions under this particular heading in the AEC commit member states to continuous review and innovation of its rules of origin in response to the demands of the market with the end in view of preventing the rule to contribute to diverting trade away from efficient third parties to member states which otherwise would have not been competitive were it not for the preferential tariffs. Related to the rule is the facilitation of the issuance of Certificates of Origin (COs).

Rules of origin (ROOs) are the set of criteria used to determine where a good was produced or manufactured (i.e. its country of origin). ROOs are used to decide whether or not goods are eligible to benefit from preferential tariff treatment. The ROOs for AFTA and its Operational Certification Procedures (OCP) were first published in 1993. The OCP provides procedures for the issuance and verification of the Certificate of Origin (ATIGA Form D) and other related administrative matters. (ASEAN Secretariat, 2008)

Determining the Origin of a Good in ASEAN²

Under the ROO, there are two main types of goods: (i) goods wholly obtained or produced, and (ii) goods not wholly obtained or produced. Goods that are obtained or produced entirely in an AMS are automatically accepted as originating.

Goods not wholly obtained or produced refer to goods manufactured in one or more AMSs which may contain non-originating materials. There are three main methods used to determine the origin of goods that are not wholly obtained or produced. These are:

² This section draws from the Handbook on Rules of Origin (RoO) in ASEAN (ASEAN Secretariat, 2008).

- Regional value content (RVC) or value-added criterion – Requires that a minimum share in value-added come from member countries. Under the ATIGA, an RVC percentage of not less than 40% of value-added is usually required for the good to be considered originating. Accumulation allows the different stages of production carried out in various AMSs to be aggregated.
- Change in tariff classification (CTC) – Requires that the materials from non-member countries have been ‘sufficiently transformed’ in production thereby acquiring a change in classification in the output according to the HS code. The usual requirement is for a CTC at the four-digit level (change in tariff heading). Accumulation is also applicable to this criterion.
- Specific manufacturing or processing operations – Requires that the good to have undergone a certain specified manufacturing process to be considered originating. Only non-originating materials are required to undergo the process.

The origin criteria used for a good can be one or a combination of the above methods. If a good has two or three co-equal alternative criteria, the exporter is allowed to choose which origin criteria to use. Annex 5 shows a flowchart for determining the origin of a good. It is applicable to the AFTA as well as the ASEAN-China FTA (ACFTA), ASEAN-Korea FTA (AKFTA) and ASEAN-Japan Comprehensive Economic Partnership Agreement (AJCEP).

To ensure their continued applicability, the AFTA ROO and its OCP have undergone revisions since 1993. The latest version provided in the ATIGA contains new and revised provisions to adjust to developments in business processes. The changes aim for greater clarity and flexibility, making it easier for producers to benefit from more liberal rules (for instance, RVC used to be the only criterion available for determining origin under the AFTA). However, according to the AEC Blueprint MTR, the utilization of preferential tariff rates in ASEAN is still modest. One of the reasons cited is lack of information and awareness, particularly of SMEs.

Applying for a Preferential Certificate of Origin in the Philippines

One important consideration is the implementation of the ROO system. The more expeditious it is to get a CO, the higher the likelihood of utilization of the preferential rates under ATIGA. The application procedure for the issuance of a CO in the Philippines is divided into two steps:

- *Request for Pre-Evaluation of Exporters and Export Products.* If the origin of the products cannot be easily determined, the product is subject to pre-exportation verification. Exporters or would-be exporters request for the evaluation of export products to determine qualification for issuance of CO. According to the Bureau of Customs (BOC), this step takes around 5 days to complete. The processing time varies widely in ASEAN, from 3 working days in Thailand to up to 30 working days in Brunei.
- *Request for Issuance of Certificate of Origin.* The BOC Export Coordination Division issues the corresponding CO, if the origin of the product can be easily determined by its own nature (e.g.,

hand-woven abaca placemat). Otherwise, the product is subject to pre-exportation verification, before the CO is issued. In the Philippines as well as other AMS, the CO can often be obtained within the same day.

To facilitate intra-ASEAN trade, a self-certification system is also planned which would enable exporters to certify the country of origin of goods themselves rather than the authorities in the exporting country. This will reduce costs, facilitate trade, enhance competitiveness, and maximize the use of AFTA preferences. The first pilot project for the ASEAN self-certification scheme was launched in 2010 with Brunei, Malaysia and Singapore; Thailand joined the scheme in 2011. The second pilot project involving the Philippines, Indonesia, and Laos is currently underway. The system is expected to be fully implemented in all ten AMSs by 2015 and will gradually replace the ATIGA Form D.

4. Trade Facilitation and Customs Integration

Trade facilitation is defined by the WTO as the “the simplification and harmonization of international trade procedures”, where trade procedures are the “activities, practices and formalities involved in collecting, presenting, communicating and processing data required for the movement of goods in international trade.” Once formal trade barriers have been eliminated or reduced, other issues become even more critical. For instance, exporters need to be able to acquire information on the rules, regulations, and procedures of other countries. Cutting red-tape and providing easier access to information are examples of facilitating trade (WTO).

Trade facilitation in general requires the administration of the trade-related regulations to be done in a way that does not hinder trade. The AEC requires the finalization of the Work Program for trade facilitation. Among the measures required to be is the establishment of the ASEAN trade repository (ATR). Comprising the ATR are the respective national trade repositories (NTR). Each country is required to publish updated information about all trade related regulations, e.g. tariff rates, SPS permits, import bans associated with sanitary requirements, and so on. Another action is the final establishment of the trade facilitation mechanism.

Most of the Philippines’ unimplemented measures in the AEC Blueprint are under trade facilitation and customs integration (see Annex 1). Nevertheless, initiatives in ASEAN appear to be bearing fruit. According to the AEC Blueprint MTR, there has been a reduction in the number of days to import and export in some countries. Also, the private sector has observed improvements in the import/export and customs clearance of many of AMSs, although several still perceived documentary requirements to be excessive and time-consuming. Unfortunately, a percentage of the private sector in some countries, including the Philippines, also felt that irregular and arbitrary payments are still necessary to expedite the release of goods from customs (ERIA, 2012).

Customs Modernization

Reduction in nominal tariffs would tend to have negligible impact if customs procedures continue to impede trade. The Revised Kyoto Convention (RKC) in 1999 is a blueprint for a modern customs administration. It requires the customs procedures, formalities and document templates be simplified and harmonized. This will lead to a more predictable customs clearance procedures and thus lower trade costs.

The Philippines is a contracting party to the RKC agreement. Among its obligations in RKC is to enable legally and use the various recommendations of RKC for a more efficient, transparent and vibrant customs administration. The Philippine Congress has still to deliberate and make it into a law that will modernize its tariff and customs laws. The proposed law called the Customs and Tariff Modernization Act (CTMA) is now in Congress. It contains innovations in customs procedures that will meet the country's obligations under the AEC in so far as customs administration is concerned.

The Philippines has been undertaking reforms in customs administration; nevertheless, there is still a lot of room for improvement. Most of the Philippines unimplemented measures are in this area. National measures that have not yet been fully implemented include (i) development of advance ruling systems for tariff classification, value assessment, and rules of origin; (ii) implementation of the cargo processing model; and (iii) compilation and publication of national legislations related to customs enforcement.

With regards to e-customs, the Philippines has already implemented electronic transactions in most key customs processes. According to a recent study by PIDS, the BOC has implemented e-customs for all the major seaports and airports in the Philippines, and around 80% of its basic customs operation is now electronic. Full coverage is expected by 2015 (Aldaba, Briones, Israel, Llanto, Medalla, & Milo, 2013).

National Single Window (NSW)

Among the recommended measures in the RKC to modernize customs procedures is the use of information and communications technology (ICT). To the extent possible, customs business procedures are required to be automated to reduce trade costs. The ASEAN Single Window (ASW) Agreement was enabled in 2008 for this purpose. The ASW builds on the National Single Windows (NSW) of member states, allowing trade and business documents involved in an international trade transaction to cross borders electronically and thus speed up processing.

According to the AEC Blueprint, the National Single Window is a system that enables (a) single submission of data and information; (b) single and synchronous processing of data and information; and (c) single decision-making for customs clearance of cargo. The purpose of the NSW is to "expedite the customs clearance, reduce transaction time and costs, and thus enhance trade efficiency and competitiveness".

Five AMSs—Indonesia, Malaysia, Philippines, Singapore and Thailand—already have live implementation of NSW with planned full roll out to all significant ports and airports by 2015. Brunei and Viet Nam are in advanced stages of development towards live implementation by 2015. However, Cambodia, Laos and Myanmar are still in the early stages of NSW implementation and would require huge effort in order to achieve live implementation by 2015 (ERIA, 2012).

Philippine NSW implementation did well in the AEC Scorecard Phase II, with a score of 82%. To implement NSW in the Philippines, President Arroyo issued Executive Order No. 482, “Creating the National Single Window Task Force for Cargo Clearance”, on December 27, 2005. Implementation of the PNSW is in two phases. Phase 1 of the PNSW project was started in October 2009 and included the installation and configuration of the Single Window package together with the connection of 30 agencies that issue permits, licenses and clearances for import or export purposes. A further 10 agencies that need to access NSW data for monitoring and reference purposes, were also included (see Annex 6 for the list of agencies). The Philippines will soon begin Phase 2 of implementation.

Note that before the implementation of the PNSW, the BOC already used, and continues to use, the Automated Systems for Customs Data (ASYCUDA), commonly referred to as the e2m Customs Project (e2m). Although traders who have been registered in the e2m before April 2010 have been automatically registered in the PNSW system, there is currently no link between the two. Information on the e2m is still manually entered by the BOC into the PNSW, while some PNSW data are entered into the e2m through the traders’ customs brokers. It is expected that in Phase 2 of the implementation of the PNSW, more participating government agencies, including the BOC’s e2m, will be finally linked with the PNSW (ASEAN Secretariat, 2013).

The ASEAN Single Window (ASW)

The ASEAN Single Window is an environment where the NSW of AMSs are operated and integrated. The purpose of the ASW is to simplify, harmonize, and standardize trade and customs processes and procedures. Because it uses international operability standards, the ASW can eventually support the exchange of Cos and advance cargo information with non-ASEAN trading partners. The benefits of the ASW include simple and faster processing time, more transparent way of doing business, legal interoperability, support for ASEAN’s policy harmonization efforts (e.g., phytosanitary measures), and better view of data exchange among AMSs. At the moment, the ASW supports the exchange of the ATIGA Form D and the ASEAN Customs Declaration Document (ACDD) on a pilot basis among seven AMSs (Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei Darussalam, and Vietnam). (ASEAN Secretariat, 2013)

B. Investment Liberalization and Facilitation

The AEC Blueprint is calling for sustained inflows of new investments to promote and ensure dynamic development of ASEAN economies. Two investment agreements were reviewed to develop a more responsive and integrated investment area. The first, the Framework Agreement on the ASEAN Investment Area (AIA), was established in 1998 to open up investments in five main sectors as well as

services incidental thereto. These sectors are: (i) manufacturing, (ii) agriculture, (iii) fishery, (iv) forestry, and (v) mining and quarrying. National treatment is accorded to foreign direct investors in the sectors, except in those included in the Sensitive List or Temporary Exclusion List. The other agreement is the ASEAN Investment Guarantee Agreement (IGA), which concerns investment protection.

In 2012, the ASEAN member countries adopted the ASEAN Comprehensive Investment Agreement (ACIA). The ACIA is meant to expand and improve on the AIA Agreement and the IGA. It includes the following reform themes: investment protection, facilitation and cooperation, promotion and awareness, and liberalization. In accordance with ACIA, each AMSs has submitted a reservation list with non-conforming measures and regulations. All other parts of the five sectors that are not in the list should be liberalized and subject to national policy. Unfortunately, liberalization in the agricultural and fisheries sector pose political economy challenges in a number of AMSs, including the Philippines.

Liberalization in the agriculture and fisheries sector poses political economy challenges in a number of AMSs, including the Philippines. Agriculture, fisheries, and services incidental are included³ in the Philippine reservation list, where the following measure is enforced: “National Treatment and the Senior Management and Board of Directors obligations shall not apply to any measure relating to food security, poverty alleviation and social equity, income enhancement and profitability, global competitiveness and sustainability. This shall include restrictions on foreign equity.” As an example, small-scale fishing in the country is closed to foreign investments while foreign equity in the production of biofuel crops and deep-sea fishing may be allowed up to 40% (ASEAN Secretariat, 2012).

Foreign participation in the sector is also subject to another barrier: restrictions on land use. According to the Philippine reservation list: “National Treatment shall not apply to any measure affecting land and property associated with land, including their acquisition, ownership, lease, development, utilization, conservation and protection.” In particular, the lease of agricultural and foreshore lands is limited to Filipino citizens or corporations with maximum 40% foreign equity. Land may be leased for a maximum of 50 years and is also subject to area limitations.

The AEC Blueprint obliges member countries to progressively reduce or eliminate investment restrictions and impediments. However, there does not appear to be a commitment for the country to eliminate these specific reservations or at least improve the same to liberalize foreign investments rules, especially since these industries are included in the Philippines’ original Sensitive List under the IAI Agreement.

³ Specific industries included in the list are: ISIC 0111 (Growing of cereals and other crops n.e.c); ISIC 0500 (Fishing, operation of fish hatcheries and fish farms; service activities incidental to fishing); CPC Groups 881-882 (Services incidental to agriculture, hunting and forestry) (Services incidental to fishing)

C. Priority Integration Sectors

Agriculture and fisheries are two of the 12 priority integration sectors (PIS) that the ASEAN member states had decided to focus their collective efforts at reducing trade and non-trade costs throughout the region. Nine of these sectors produce goods. They are agro-based goods, fisheries, automotive products, e-ASEAN (including ICT equipment), electronics goods, health care products, rubber-based goods, textiles and clothing, and wood-based products. The remaining three, namely air transport, logistics and tourism, are services industries. In 2004, the nine priority goods industries had a combined share in total merchandise exports of 69.8% (Wattanapruttipaisan, T., 2008). Agriculture and fisheries accounted for 10.2% of the total exports of the nine PIS.

Non-trade costs explain why developing countries' exports, particularly agro-based and fishery products, have not been very successful in penetrating developed country markets. Transaction costs are comparatively higher for these goods. Wattanapruttipaisan (2008) reported that the lack and poor capacity of logistical services result in financial losses of exporters from spoilage, missed seasons, and damages to the shipment in transit. The study cited the result of a survey conducted by McKinsey and Company in 2005. Survey respondents in Asia said that up to a quarter of consignments were late, and damages in transit were about 2 to 4% of the goods delivered. Wattanapruttipaisan observed a vicious cycle, which perpetuates a state of weak capacity of logistics services. Investments in logistics are low because of a thin market for logistical services, which in turn are prevented from expanding due to high cost of transporting goods particularly those of agro-based goods and fisheries, to their markets.

The AEC Blueprint calls for the implementation of the respective roadmaps for each of the PIS. The Roadmap for the Integration of Logistics Services was adopted by ASEAN in 2007. It calls for the progressive implementation of concrete actions to support the establishment and enhance the competitiveness of an ASEAN production base. The Roadmap includes the following measures: liberalization of logistics services, enhancing competitiveness of ASEAN logistics services providers through trade and logistics services facilitation, expanding capability of ASEAN logistics service providers, human resource development, and enhancing multi-modal transport infrastructure and investment. Unfortunately, these measures are difficult for the Philippines to implement due to the country's strict foreign equity restrictions (by mandate of the Constitution and specific laws) on public services such as transport. Many argue that these restrictions are serious impediments to economic development.

D. Food, Agriculture, and Forestry

Annex 4 lists down the priority actions to expand and deepen regional trade in food, agricultural, and forestry products. The AEC Blueprint objectives of this heading are to promote the competitiveness of the region's agricultural, fisheries and forestry products, and expand intra- and extra-ASEAN trade in these products. Regional cooperation on product standards also addresses the potential NTB effects of SPS.

The priority actions include the development, harmonization, and validation of quality standards, and adapting these systems for small and medium enterprises. For fisheries products, member states are called upon to implement Hazard Analysis Critical Control Point (HACCP)-based systems, and develop their capacity to validate and verify if fisheries products meet the quality standards demanded by markets. Investment in laboratories is required to enhance the capacity.

Similar interventions are required for the trade in animals and animal-based (including terrestrial and aquatic) as well as in plants and plant-based products. The member states are called upon to develop and apply good agriculture/aquatic practices (GAP), good animal husbandry practices (GAHP), good hygiene practices (GHP), good manufacturing practices (GMP) and HACCP-based systems for these products including those with trade potential. The priority actions include the harmonization of regulations on the trade of these products such as sanitary and phyto-sanitary measures, safety and quality standards for horticultural produce and agricultural products regulations affecting the application of modern biotechnology in agriculture, maximum residue limits in the use of agricultural chemicals in plants and plant products following international standards, health control systems for animals, use of chemicals in aquaculture, and quarantine inspection systems..

The AEC Blueprint also calls for the promotion of technology transfers from international, regional organizations and the private sector and agricultural cooperatives. In addition, it encourages the establishment of strategic alliances and joint approaches with the private sector, cooperatives, producers, consumers, and traders to promote investment, agricultural products and market access.

1. Standards Development and Implementation

Good Agriculture Practices

Good Agricultural Practices (GAP) refers to approaches which address the sustainability of on-farm processes to ensure safety and quality of food and non-food agricultural products. These approaches aim to capture market advantages by (1) modifying supply chain governance; (2) improving natural resource use, workers' health, and working conditions; and (3) creating new market opportunities for farmers and exporters in developing countries.

In 2005, through Administrative Order No. 25 ("Guidelines on the Certification of Good Agricultural Practices Fruits and Vegetable Farming"), the Department of Agriculture formulated and enforced the standards of product quality to ensure human health and safety in consumption of agricultural products, both for export and import. While some of the other ASEAN countries such as Malaysia and Thailand have already implemented national GAP certification for many of their commodities, GAP certification in the Philippines is still considered to be in the infancy stage (SEARCA, 2013). GAP adoption in the country is relatively slow, with only 13 certified farms as of September 2013. In 2013, the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) conducted a study to identify

the status and issues related to GAP adoption in the Philippines, particularly for banana and mango producers. They identified four main constraints to GAP adoption:

- Knowledge constraints – Lack of awareness of GAP among various stakeholders
- Cost constraints – Associated costs of compliance and certification are relatively high for both corporate and small farms
- Process constraints – Certification often require farmers to acquire new skills and competencies to adopt new standards in their production process as well as to manage and plan activities
- Reward/incentive constraint – Uncertainty on price premium for products of GAP-certified farms

SEARCA made the following policy recommendations to increase GAP adoption in the Philippines:

- Push and pull strategy – Intensifying awareness campaigns for farmers and organizations (push strategy) as well increasing efforts to create awareness on the part of end consumers (pull strategy). If consumers are aware of and appreciate the benefits of GAP, then the demand for certified products will increase.
- Value creation – A multi-media approach in communicating the value of the products and production processes based on platforms that are relevant and easily accessible to stakeholders (e.g., short messaging system, social media/networking, public service radio and television programs).
- Capturing value – Automatic PhilGAP certification for farms with GLOBALGAP certification.
- Tapping farmer-innovators – To overcome cost constraints, farmers whose farms are adjacent to each other may establish a collective farm and apply for GAP certification as a group. Several entities like an international development agency, exporter/processor, or producer organization, may form a strong linkage with farmers and be the initiator of the certification process.

In 2006, the ASEAN GAP was launched as a voluntary standard for good agricultural practices during the production, harvesting and post-harvest handling of fresh fruits and vegetables in the ASEAN region. Its development was based primarily on the criteria and experiences of national GAP implementation in Malaysia, Philippines, Singapore and Thailand. It also drew on certified GAP systems and guidelines from other countries and regions (ASEAN Secretariat, 2006). The purpose of the ASEAN GAP is to enhance the harmonization of national GAP programs within the ASEAN region, enhance fruit and vegetable safety for consumers, ensure sustainability of natural resources, and facilitate the trade of fruits and vegetables regionally and internationally. Certification is carried out by national authorities in each ASEAN country.

Good Aquaculture Practices

Good aquaculture practices (GaqP) is a series of considerations, procedures, and protocols designed to foster efficient and responsible aquaculture production and expansion. It helps ensure the quality, safety, and environmental sustainability of the final product. GaqP includes considerations for: site location; production system design; incoming seed stock; facility biosecurity; feeding management,

procurement, and storage; production techniques to maximize fish health; harvest; and cleaning and sanitation basics to ensure final product quality and safety. According to the Southeast Asian Fisheries Development Centre (SEAFDEC), there is a need to provide additional training for GaaP in the Philippines, specifically in the areas of documentation and traceability of inputs and products.

The ASEAN Secretariat is currently developing a common ASEAN GaaP on main aquaculture products, as well as a strategic plan for its operationalization and sustainability. This is essential in establishing an internationally recognized set of standards which can be used by ASEAN countries and will contribute to better trade facilitation and sustainable development of the subsector. The project is being implemented under the leadership of the Bureau of Fisheries and Aquatic Resources/National Fisheries Research and Development Institute (BFAR/NFRDI), Department of Agriculture of the Philippines and the SEAFDEC Aquaculture Department (SEAFDEC/AQD). The ASEAN GaaP will be primarily focused on the value chain approach of fish production at the farm level. This includes important commercial aquaculture commodities of each AMS, farming activities from broodstock development and management, hatchery and nursery production to grow-out farm production, harvest and handling procedures.

Good Animal Husbandry Practices

The Philippine Good Animal Husbandry Practices (GAHP) sets out the general principles of good practice and minimum requirements in the commercial or backyard rearing/farming of animals for food use. The objective is to ensure that the farming practices of the establishment provide greater confidence in consumer's expectations that the final products are safe and fit for human consumption, while ensuring health safety and comfort to both the farm workers and the animals, without any degradation to the environment (BAFPS, 2013). Application for certification is currently voluntary in the Philippines. As of September 2013, there are 21 GAHP-certified farms in the Philippines. The GAHP Certification Committee is chaired by the Bureau of Animal Industry (BAI) and co-chaired by the Bureau of Agriculture and Fisheries Product Standards (BAFPS).

The Australian Agency for International Development (AusAID), through the ASEAN-Australia Development Cooperation Program (AADCP), is currently assisting the ASEAN Secretariat in the establishment, adoption and implementation of a set of ASEAN-wide animal husbandry practices. It will support the development of an ASEAN GAHP and country-specific programs to boost its widespread acceptance and utilization among the ASEAN Member States. Similar to the ASEAN GAP and ASEAN GaaP, best practices and lessons learned by countries with their national GAHP will be used in the formulation of the ASEAN GAHP. The project is led by the Directorate of Animal Health, Directorate General of Livestock Services (DGLS), Ministry of Agriculture, Indonesia.

Hazard Analysis Critical Control Point

Hazard Analysis and Critical Control Point (HACCP) is an internationally recognized system for reducing the risk of safety hazards in food. It requires that potential biological, chemical or physical hazards be identified and controlled at specific points in the process, reducing the need for inspection and testing of

end-products. The HACCP system provides protection for manufacturers, food service businesses and consumers from unsafe food. Certification provides companies with the ability to reach markets and customers that require a HACCP based system. Other benefits of implementation include increased consumer confidence, improved quality and consistency, and reduced liability.

Before getting HACCP certified, producers need to comply with prerequisite programs such as GMP. There are several government bodies that give HACCP certification in the Philippines, depending on the type of commodity:

- Most food processing – Food and Drug Administration (FDA)
- Fish and seafood – Bureau of Fisheries and Aquatic Resources (BFAR)
- Meats, poultry and related products – National Meat Inspection System (NMIS)
- Grains – National Food Authority (NFA)

For fisheries, the food safety management and control system of the Bureau of Fisheries and Aquatic Resources (BFAR) began in 1994 when HACCP was first introduced in the Philippines. It developed and grew when, in 2005, BFAR was recognized by the European Union (EU) as competent certification authority to ensure safety of fish and fishery products exported from the Philippines. Producers with HACCP-certification benefit from higher export prices as a result of better product quality.

Unfortunately, the Philippines has not yet been fully able to apply quality and safety standards, specifically for small enterprises (Briones & Israel, 2012). Small scale fisheries enterprises supply only to the domestic market and, unless required by local authorities, do not have to adopt HACCP and other international quality and safety management systems. The cost of HACCP for small enterprises is too high and there is no incentive for them to invest in certification.

Maximum Residue Limits

ASEAN has established a number of harmonized maximum residue limits (MRLs) for various pesticides. MRLs for fish products have also been harmonized in accordance with international standards and guidelines.

Chemicals in Aquaculture

Government policies regulating or prohibiting certain chemicals for aquaculture have helped limit the harmful consequences of using these products (Briones and Israel, 2012). Research institutions have also increased their focus on studies involving safe drugs and other alternatives to disease control. Except the producers and traders of chemicals and pesticides, the reduction of the use of chemicals should benefit all sectors in aquaculture. Due to the promotion of organic aquaculture, the cost of production may actually decrease since organic pesticides tend to be less expensive.

Quarantine and Inspection Procedure

According to Briones and Israel (2012), the quarantine and inspection procedures of the Philippines are already harmonized with ASEAN and international standards and guidelines, resulting in improved quality of fish imports. However, some shipments are smuggled through the backdoor of the country and do not pass through quarantine and inspection. In addition, there is a possibility that quarantine and inspection personnel are bribed allowing entry of unhealthy or unsafe products into the Philippines.

2. Cooperation, Joint Approaches, and Technology Transfer⁴

The AEC blueprint promotes cooperation, joint approaches and technology transfer in agriculture and fisheries products. These involve joint positions with respect to other international organizations, collaborative research, strategic alliances with the private sector, and combating illegal fishing. Through various fisheries and aquaculture research and development institutions, the Philippines has undertaken R&D cooperation with all ASEAN countries, covering production, processing, marketing, research, extension, technology transfer and other related areas. A main constraint in the implementation of measures under this section is the common lack of interest to convene and engage with government and other private sector entities, as most major players prefer to work with their own network.

Illegal, unreported and unregulated (IUU) fishing continues to be a major threat to the long-term sustainable management of fisheries, the maintenance of productive and healthy ecosystems, and the economic stability of small-scale and artisanal fisheries in the Philippines. However, the country has made serious efforts to crack down on illegal fishing in recent years. Persistent problems include: cyanide fishing, corruption by local officials, and links to serious crime resulting in a number of murders of those enforcing the laws. While there has been a decline in IUU fishing in some areas as a result of tighter controls, progress is still slow.

3. Promotion of Agricultural Cooperatives

The AEC Blueprint also aims to promote agricultural cooperatives as a means to empower and enhance market access of agricultural products. According to PIDS (2013), agricultural cooperatives have benefited greatly from their participation in the Network for the Development of Agricultural Cooperatives (NEDAC), particularly from knowledge and capacity sharing. However, there is a lack in government support for fishery cooperatives. PIDS found that there is a need to provide fishery cooperatives with (a) systematic and continuing education and training, (b) sustained financing, (c) skills and capability building, and (d) marketing and processing assistance programs.

⁴ This section draws heavily from “The ASEAN Economic Community Blueprint: Implementation and Effectiveness Assessment for Philippine Agriculture” by Briones & Israel (2012).

E. Infrastructure Development

Poor infrastructure adversely affects the price, reliability and quality of goods. Competitive and efficient logistics and distribution services are important components of trade. An ineffective transport system, for instance, can become a major trade barrier by increasing the cost of transporting goods and reducing the quality and quantity of the products that are transported. These costs are ultimately passed on to consumers. It also has significant implications to equitable development in terms of connecting the poorer rural areas to domestic and regional markets. Being an archipelago, an efficient multimodal transport system is vital for the Philippines.

1. ASEAN Transport Facilitation

ASEAN has introduced a number of transport facilitation initiatives over the years to create an efficient logistics and multimodal transport system, connecting land, maritime, and air transport. These include:

- ASEAN Framework Agreement on the Facilitation of Goods in Transit (AFAFGIT) – Establishes an efficient, effective, integrated and harmonized transit transport system in ASEAN.
- ASEAN Framework Agreement on Multimodal Transport (AFAMT) – Governs door-to-door delivery of goods using various modes of transport.
- ASEAN Framework Agreement on the Facilitation of Inter-State Transport (AFAFIST) – Facilitates inter-state transport of goods, harmonization of customs regulation and requirement for inter-state movement of goods.
- Roadmap for Integration of Air Travel Sector (RIATS) – Full liberalization in air transport services towards realizing Open Skies policy in ASEAN.
- Roadmap Towards an Integrated and Competitive Maritime Transport in ASEAN (RICMT) – Promotes progressive liberalization of maritime transport services.

These agreements and roadmaps aim to create efficient logistics and multimodal transport systems for the efficient and smooth movement of goods. However, some protocols of these agreements have not yet been ratified by AMSs, including the Philippines (ASEAN Secretariat, 2011).

In a 2003 publication, Ali and Pernia identified three important areas of intervention where the government can channel infrastructure investments to reduce poverty. These are: rural roads, rural electrification, and irrigation. Llanto, Sombilla, & Quimba (2012) conducted a study on the issues in transport and shipping of fruits and vegetables from Mindanao to particular regions in Luzon and Visayas. Llanto et al. emphasized the necessity of a good network of roads and ports that links production areas to consumer markets. They cite inadequacy of infrastructure as a major reason for the lack of competitiveness and investments in the Philippines.

IV. Trends in Agriculture and Fisheries Trade

This section shows the trends in agriculture and fisheries trade of the ASEAN countries, as well as four non-ASEAN major trading partners: China, Japan, the United States, and the European Union. The primary source of trade data used in this study is the Commodity Trade (COMTRADE) database of the United Nations Statistics Division (UNSD). COMTRADE contains merchandise trade exports and imports by detailed commodity and partner country. All raw data was extracted from the World Bank's World Integrated Trade Solution (WITS) website⁵ while some of the cited indicators are from Trade Map⁶. Gross domestic product (GDP) data, on the other hand, was obtained from the World Bank's World Development Indicators (WDI) database⁷.

A. Trade Openness

The agricultural and fisheries trade openness index (AF-TOI) is defined as the ratio of the sum of agriculture and fisheries imports and exports to the gross domestic product (GDP). The higher the index, the more open the country to trade. The AF-TOI of the Philippines is low compared to other ASEAN countries and has actually decreased since 2000 (Table 6). Vietnam, on the other hand, has a high level of trade openness. In recent years the country has made significant progress towards a market-oriented economy. Following land market reform in 1998, Vietnam was able to significantly increase its production and trade in agricultural products. The fisheries sector is also expanding and the country imports products for processing and re-export. Government intervention is focused on improving infrastructure, research and development, and extension services. (WTO Secretariat, 2013)

Another country with relatively high AF-TOI is Malaysia. Based on the Trade Policy Review released in 2009 by the WTO, the country aims to promote more large-scale commercial farming and increase value-adding to primary agricultural products. Government support measures include drainage and irrigation facilities, price support, fertilizer subsidy, research and development, marketing services, and other extension services.

The value and share of agriculture and fisheries exports is shown in Table 7. The share has been increasing in the Philippines since 2000. Nevertheless, the country's share of agricultural and fisheries products to total exports is still low compared to selected AMSs, i.e., Indonesia, Malaysia, Thailand, Vietnam. The value of agricultural and fisheries exports of the Philippines is also relatively low. In 2012, it was only \$4.9 billion, compared to roughly \$30 billion each in Indonesia, Malaysia, and Thailand.

⁵ <http://wits.worldbank.org/wits/index.html>

⁶ <http://www.trademap.org/>

⁷ <http://data.worldbank.org/>

Table 6. Agriculture and Fisheries Trade Openness Index

| Country | 1990 | 1995 | 2000 | 2005 | 2010 | 2012 |
|----------------|------|------|------|------|------|------------------|
| Brunei | | | | | | 3% |
| Cambodia | | | 4% | 3% | 4% | 5% |
| Indonesia | 4% | 4% | 6% | 5% | 5% | 6% |
| Malaysia | 13% | 12% | 10% | 11% | 15% | 15% |
| Myanmar | | | | | | |
| Philippines | | | 6% | 6% | 5% | 5% |
| Singapore | 19% | 13% | 8% | 8% | 8% | 8% |
| Thailand | 10% | 8% | 11% | 10% | 11% | 12% |
| Vietnam | | | 15% | 17% | 21% | 23% ⁸ |
| China | | 3% | 2% | 2% | 2% | 2% |
| European Union | 1% | 5% | 5% | 5% | 6% | 6% |
| Japan | 1% | 1% | 1% | 1% | 1% | 1% |
| United States | | 1% | 1% | 1% | 1% | 2% |

Source: Author calculations from WITS/COMTRADE and WDI.

Table 7. Agriculture and Fisheries Sector Export Value and Share

| Country | Value of A&F Exports (\$ millions) | | | | Share of A&F Exports to Total Exports (%) | | | |
|----------------------|------------------------------------|---------|---------|---------|---|-------|-------|-------|
| | 2000 | 2005 | 2010 | 2012 | 2000 | 2005 | 2010 | 2012 |
| Brunei | | | | 6 | | | | 0.0% |
| Cambodia | 13 | 29 | 92 | 229 | 1.0% | 1.0% | 1.6% | 2.9% |
| Indonesia | 5,725 | 10,284 | 26,281 | 34,599 | 9.2% | 12.0% | 16.7% | 18.2% |
| Malaysia | 5,789 | 10,318 | 24,413 | 29,548 | 5.9% | 7.3% | 12.3% | 13.0% |
| Myanmar | | | 1,506 | | | | 19.7% | |
| Philippines | 1,929 | 2,625 | 3,964 | 4,879 | 5.1% | 6.4% | 7.7% | 9.4% |
| Singapore | 3,221 | 3,955 | 7,095 | 9,084 | 2.3% | 1.7% | 2.0% | 2.2% |
| Thailand | 10,208 | 13,247 | 26,127 | 32,369 | 14.8% | 12.0% | 13.4% | 14.1% |
| Vietnam ⁹ | 3,745 | 6,696 | 14,351 | 18,695 | 25.9% | 20.6% | 19.9% | 19.3% |
| China | 14,852 | 26,467 | 47,682 | 61,143 | 6.0% | 3.5% | 3.0% | 3.0% |
| European Union | 189,966 | 317,889 | 459,929 | 501,262 | 8.0% | 8.0% | 9.1% | 9.7% |
| Japan | 2,359 | 3,153 | 5,097 | 4,963 | 0.5% | 0.5% | 0.7% | 0.6% |
| United States | 54,439 | 61,884 | 112,656 | 139,198 | 7.6% | 7.7% | 10.0% | 10.3% |

Source: Author calculations from WITS/COMTRADE.

⁸ Data is for 2011.

⁹ No data for 2012. Data in 2012 columns are for 2011.

Between 2000 and 2012, Indonesia had the largest growth in the values of agriculture and fisheries exports. Economic reforms in 1997-1998 removed import monopolies, licensing requirements, and export restrictions in the country. There are no products in Indonesia's SL under ATIGA although rice and sugar are included in the HSL.

In ASEAN, Thailand had the second-largest export value in 2012 in agriculture and fishery products. According to the WTO's Trade Policy Review (2011), the country's agricultural policy focuses on improving productivity on small farms and infrastructural improvement (particularly on irrigation and drainage). There has also been an increasing emphasis on research, pest and disease control, and extension and advisory services. For fisheries, policy is aimed at encouraging local participation in decision making, training and education, improving sustainability while encouraging increased aquaculture production, and increasing the capacity of the overseas fishing fleet.

On the import side, the share of agriculture and fisheries imports to total imports of the Philippines is highest among the ASEAN countries, except Brunei Darussalam (Table 8).

Table 8. Agriculture and Fisheries Sector Import Value and Share

| Country | Value of A&F Imports (\$ millions) | | | | Share of A&F Imports to Total Imports (%) | | | |
|----------------------|------------------------------------|--------------|--------------|--------------|---|-------------|--------------|--------------|
| | 2000 | 2005 | 2010 | 2012 | 2000 | 2005 | 2010 | 2012 |
| Brunei Darussalam | | | | 506 | | | | 14.2% |
| Cambodia | 137 | 191 | 349 | 511 | 9.5% | 7.5% | 7.1% | 7.2% |
| Indonesia | 3,423 | 4,744 | 11,866 | 16,447 | 10.3% | 8.3% | 8.8% | 8.6% |
| Malaysia | 3,640 | 6,025 | 13,134 | 17,022 | 4.5% | 5.3% | 8.0% | 8.7% |
| Myanmar | | | 349 | | | | 8.4% | |
| Philippines | 2,675 | 3,524 | 6,770 | 7,179 | 7.2% | 7.1% | 11.6% | 11.0% |
| Singapore | 4,518 | 5,919 | 10,285 | 13,136 | 3.4% | 3.0% | 3.3% | 3.5% |
| Thailand | 2,823 | 4,881 | 8,902 | 13,098 | 4.6% | 4.2% | 4.9% | 5.3% |
| Vietnam ¹ | 855 | 2,390 | 7,509 | 9,329 | 5.5% | 6.5% | 8.9% | 8.7% |
| China | 9,589 | 22,458 | 61,566 | 93,270 | 4.4% | 3.7% | 4.8% | 5.6% |
| European Union | 198,171 | 336,377 | 472,832 | 491,560 | 8.2% | 8.3% | 9.2% | 9.4% |
| Japan | 50,562 | 55,818 | 66,640 | 82,330 | 13.3% | 10.8% | 9.6% | 9.3% |
| United States | 54,799 | 77,433 | 102,855 | 128,364 | 4.4% | 4.5% | 5.2% | 5.5% |

¹ No data for 2012. Data in 2012 columns are for 2011.

Source: Author calculations from WITS/COMTRADE.

B. Trade Composition and Geographic Orientation

1. Agricultural Imports

In 2012, the Philippines imported \$7.2 billion worth of agricultural products (Table 9), 29% of which came from other ASEAN Member States (AMSs). Imports were dominated by 'cereals', followed by 'residues, wastes of food industry, and animal fodder'. Under 'cereals', the two largest imports are wheat and meslin (\$1 billion) and rice (\$0.4 billion). Only 1% of wheat and meslin imports are from the ASEAN, while as much as 86% of rice came from other AMSs. Under 'residues, wastes of food industry, and animal fodder', the largest import is soya-bean oil-cake and other solid residues. Soya-bean oil-cake is used as a filler and source of protein in animal diets, including livestock and fish feed. Less than 1% of the product is from the ASEAN.

Like most agricultural imports, rice is subject to a tariff quota. A minimum access volume (MAV) or an in-quota of 350,000 metric tons can be imported by the NFA at 40% tariff. Imports above the MAV or in-quota are given the higher duty of 50%. Having the MAV system is not because the country is allowed by the WTO and ASEAN to continue having a quantitative restriction (QR) on rice. The system applies as well to other agricultural products such as meats. The difference is that in rice it is only the NFA which is allowed to import rice, while in other agricultural imports the private sector is free to import any amount above the respective in-quotas of such products. The NFA is legally allowed to delegate some of its import task in rice to the private sector.

The QR privilege expired in June 2012 but the country continued to implement it as the government negotiated for its extension until 2017 by applying for a waiver from its treaty obligation under the Agriculture Agreement of the WTO which is to eliminate its rice QR and convert the protection accorded its rice farmers to tariff protection. As stated above, the Philippines secured the waiver last June 2014 which would allow the country to maintain a rice import QR until 2017.

Despite the QR, the Philippines is one of the largest importers of rice in world. The National Food Authority (NFA) controls rice imports and provides price support to domestic producers. NFA's stated objectives are to achieve self-sufficiency and to ensure sufficiently high and stable food prices to enhance farm incomes and alleviate rural poverty. However, according to the WTO, NFA's policies have actually contributed to the sector's non-competitiveness by reducing incentives for farmers to reduce production costs and improve efficiency.

Agricultural imports from the ASEAN were valued at about \$2.1 billion in 2012. A list of the top ten products imported by the Philippines from AMSs is in Table 10. Rice imports are primarily from ASEAN, as well as animal or vegetable fats and oils. ASEAN is also a major source of miscellaneous edible preparations, spirits, and coffee.

Table 9. Philippines Imports and Import Shares of Agriculture and Fisheries Products, 2012

| Chapter Code | Chapter Description | Value of Imports (\$ millions) | Share of Product in A&F Imports (%) | Ranking in World Imports | Share of Product Imports from ASEAN (%) |
|---------------------------------------|---|--------------------------------|-------------------------------------|--------------------------|---|
| 10 | Cereals | 1,498 | 21% | 27 | 27% |
| 23 | Residues, wastes of food industry, animal fodder | 1,057 | 15% | 22 | 7% |
| 04 | Dairy products, eggs, honey, edible animal products nes | 780 | 11% | 24 | 5% |
| 21 | Miscellaneous edible preparations | 759 | 11% | 22 | 58% |
| 02 | Meat and edible meat offal | 508 | 7% | 44 | 0% |
| 15 | Animal, vegetable fats and oils, cleavage products, etc | 414 | 6% | 49 | 89% |
| 22 | Beverages, spirits and vinegar | 282 | 4% | 52 | 64% |
| 19 | Cereal, flour, starch, milk preparations and products | 247 | 3% | 44 | 65% |
| 17 | Sugars and sugar confectionery | 233 | 3% | 58 | 26% |
| 03 | Fish, crustaceans, molluscs, aquatic invertebrates nes | 229 | 3% | 42 | 20% |
| 11 | Milling products, malt, starches, inulin, wheat gluten | 213 | 3% | 25 | 29% |
| 08 | Edible fruit, nuts, peel of citrus fruit, melons | 205 | 3% | 52 | 4% |
| 24 | Tobacco and manufactured tobacco substitutes | 166 | 2% | 50 | 22% |
| 12 | Oil seed, oleagic fruits, grain, seed, fruit, etc, nes | 133 | 2% | 54 | 27% |
| 20 | Vegetable, fruit, nut, etc food preparations | 125 | 2% | 54 | 10% |
| 09 | Coffee, tea, mate and spices | 91 | 1% | 67 | 90% |
| 18 | Cocoa and cocoa preparations | 81 | 1% | 62 | 57% |
| 07 | Edible vegetables and certain roots and tubers | 65 | 1% | 74 | 23% |
| 13 | Lac, gums, resins, vegetable saps and extracts nes | 34 | 0% | 36 | 5% |
| 01 | Live animals | 29 | 0% | 65 | 0% |
| 05 | Products of animal origin, nes | 18 | 0% | 49 | 1% |
| 16 | Meat, fish and seafood food preparations nes | 10 | 0% | 130 | 28% |
| 06 | Live trees, plants, bulbs, roots, cut flowers etc | 2 | 0% | 107 | 17% |
| 14 | Vegetable plaiting materials, vegetable products nes | 1 | 0% | 69 | 40% |
| SUBTOTAL – Agricultural and Fisheries | | 7,179 | 100% | | 29% |
| TOTAL – All Products | | 65,350 | | 48 | 23% |

Source: Author calculations from WITS/COMTRADE.

Table 10. Philippines Top 10 Agriculture and Fisheries Imports from ASEAN, 2012

| Heading Code | Heading Description | Imports from ASEAN (\$ millions) | Imports from World (\$ millions) | Share of Product in A&F Imports (%) | Share of Product Imports from ASEAN (%) |
|---------------------------------------|---|----------------------------------|----------------------------------|-------------------------------------|---|
| 1006 | Rice | 365 | 424 | 6% | 86% |
| 1518 | Processed animal, vegetable oils, industrial preparations | 200 | 206 | 3% | 97% |
| 2106 | Food preparations, nes | 192 | 413 | 6% | 47% |
| 2101 | Extracts, essences, concentrates of tea, coffee, mate | 178 | 190 | 3% | 94% |
| 2207 | Ethyl alcohol, undenatured and > 80%, or denatured | 155 | 211 | 3% | 74% |
| 1901 | Malt extract, flour, dairy preparations, low cocoa | 90 | 138 | 2% | 65% |
| 0901 | Coffee, coffee husks and skins and coffee substitutes | 69 | 70 | 1% | 99% |
| 2309 | Animal feed preparations, nes | 53 | 213 | 3% | 25% |
| 2103 | Sauce, condiments, mixed seasoning and mustard | 52 | 108 | 2% | 48% |
| 1108 | Starches, inulin | 41 | 56 | 1% | 73% |
| SUBTOTAL – Agricultural and Fisheries | | 2,078 | 7,179 | 100% | 29% |
| TOTAL – All Products | | 14,954 | 65,350 | | 23% |

Source: Author calculations from WITS/COMTRADE.

2. Agricultural and Fisheries Exports

The country's export performance in agriculture and fisheries in 2012 is shown in Table 11. The Philippines' top export groups in 2012 were 'animal, vegetable fats and oils, cleavage products, etc' and 'edible fruit, nuts, peel of citrus fruit, melons'. Philippine exports to the world were dominated by coconut oil which had a value of over \$1 billion in 2012, although only 5% was exported to the ASEAN.

Agricultural exports to the ASEAN were valued at about \$707 million in 2012. A list of the top ten products exported by the Philippines to the rest of ASEAN is in Table 12. Cigarettes, milk and cream powder, and certain sugars are key the country's key exports to ASEAN.

Indexes of the share of countries in Philippine agriculture and fisheries trade are in Table 13. Among the AMSs, the Philippines imports the most from Vietnam. The Philippines is one of the largest rice importers in the world and buys most (82% in 2012) of its rice import requirements from Vietnam. Worldwide, the biggest import partner of the country is the United States, from where it obtains most of its wheat and oil-cake.

Table 11. Exports and Export Shares of Agriculture and Fisheries (A&F) Products, 2012 (in %)

| Chapter Code | Chapter Description | Value of Exports (\$ millions) | Share of Product in A&F Exports | Ranking in World Exports | Share of Product Exports to ASEAN |
|---------------------------------------|---|--------------------------------|---------------------------------|--------------------------|-----------------------------------|
| 15 | Animal, vegetable fats and oils, cleavage products, etc | 1,204 | 25% | 16 | 7% |
| 08 | Edible fruit, nuts, peel of citrus fruit, melons | 1,036 | 21% | 24 | 6% |
| 20 | Vegetable, fruit, nut, etc food preparations | 528 | 11% | 21 | 14% |
| 16 | Meat, fish and seafood food preparations nes | 423 | 9% | 23 | 4% |
| 03 | Fish, crustaceans, molluscs, aquatic invertebrates nes | 420 | 9% | 42 | 7% |
| 24 | Tobacco and manufactured tobacco substitutes | 234 | 5% | 36 | 56% |
| 17 | Sugars and sugar confectionery | 209 | 4% | 41 | 36% |
| 19 | Cereal, flour, starch, milk preparations and products | 159 | 3% | 41 | 42% |
| 13 | Lac, gums, resins, vegetable saps and extracts nes | 154 | 3% | 11 | 8% |
| 23 | Residues, wastes of food industry, animal fodder | 130 | 3% | 49 | 26% |
| 21 | Miscellaneous edible preparations | 86 | 2% | 58 | 16% |
| 04 | Dairy products, eggs, honey, edible animal product nes | 84 | 2% | 60 | 64% |
| 22 | Beverages, spirits and vinegar | 67 | 1% | 74 | 37% |
| 12 | Oil seed, oleagic fruits, grain, seed, fruit, etc, nes | 38 | 1% | 72 | 21% |
| 02 | Meat and edible meat offal | 35 | 1% | 61 | 0% |
| 07 | Edible vegetables and certain roots and tubers | 29 | 1% | 76 | 13% |
| 01 | Live animals | 14 | 0% | 60 | 44% |
| 11 | Milling products, malt, starches, inulin, wheat gluten | 9 | 0% | 82 | 57% |
| 18 | Cocoa and cocoa preparations | 6 | 0% | 87 | 23% |
| 05 | Products of animal origin, nes | 5 | 0% | 70 | 10% |
| 06 | Live trees, plants, bulbs, roots, cut flowers etc | 3 | 0% | 72 | 6% |
| 14 | Vegetable plaiting materials, vegetable products nes | 3 | 0% | 39 | 3% |
| 09 | Coffee, tea, mate and spices | 2 | 0% | 127 | 83% |
| 10 | Cereals | 1 | 0% | 112 | 61% |
| SUBTOTAL – Agricultural and Fisheries | | 4,879 | 100% | | 14% |
| TOTAL – All Products | | 51,995 | | 58 | 19% |

Source: Author calculations from WITS/COMTRADE.

The share of Philippine exports to ASEAN significantly increased between 2000 and 2005 but has barely changed since then. The market for the country's agricultural and fisheries products is very narrow—about 60% of the value of agriculture and fisheries exports goes to just three trading partners: the United States, the European Union, and Japan. The Philippines mostly exports coconut oil, fruits (particularly banana), and prepared or preserved fish to these countries.

Table 12. Philippine Top 10 Agriculture and Fisheries Exports to ASEAN, 2012

| Heading Code | Heading Description | Exports to ASEAN (\$ millions) | Exports to World (\$ millions) | Share of Product in A&F Exports (%) | Share of Product Exports to ASEAN (%) |
|---------------------------------------|---|--------------------------------|--------------------------------|-------------------------------------|---------------------------------------|
| 2402 | Cigars, cigarettes etc, tobacco or tobacco substitute | 75 | 80 | 2% | 93% |
| 2008 | Fruit, nut, edible plant parts nes, prepared/preserve | 69 | 389 | 8% | 18% |
| 0402 | Milk and cream, concentrated or sweetened | 52 | 80 | 2% | 65% |
| 1513 | Coconut, palm kernel, babassu oil, fractions, refined | 51 | 1,026 | 21% | 5% |
| 1702 | Sugars nes, lactose, fructose, glucose, maple syrup | 43 | 44 | 1% | 97% |
| 1901 | Malt extract, flour, dairy preparations, low cocoa | 38 | 48 | 1% | 79% |
| 0803 | Bananas, including plantains, fresh or dried | 36 | 648 | 13% | 5% |
| 2306 | Oil-cake other than soya-bean or groundnut | 31 | 122 | 3% | 26% |
| 2401 | Tobacco unmanufactured, tobacco refuse | 29 | 76 | 2% | 37% |
| 1511 | Palm oil and its fractions, not chemically modified | 28 | 31 | 1% | 91% |
| SUBTOTAL – Agricultural and Fisheries | | 707 | 4,879 | 100% | 14% |
| TOTAL – All Products | | 9,804 | 51,995 | | 19% |

Source: Author calculations from WITS/COMTRADE.

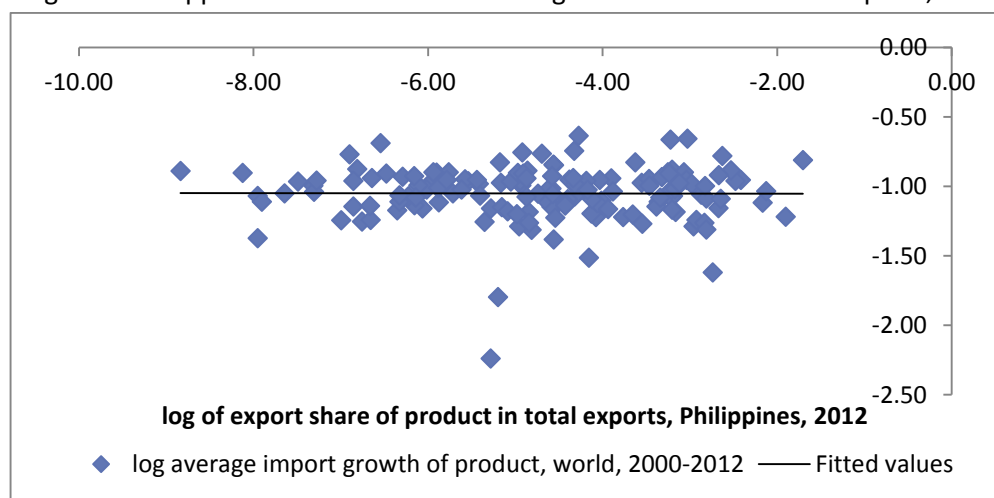
In order to assess the extent to which the Philippines' export orientation is favorable, i.e. to what extent the country exports products that have been fast growing, a scatter plot with export shares on the horizontal axis and import growth on the vertical axis is done and shown in Figure 1. The horizontal axis measures the growth of the share to total exports of a given exported product, which the logarithm of the product export shares indicates. The vertical axis is for the growth of the world's imports of the products. If the fitted values slope up, products or destinations with increasing export shares are those with faster import growth, and the geographic orientation of exports is favorable.

Table 13. Geographic Orientation of Philippine Agriculture and Fisheries Trade

| Trading Partner | Imports | | | | Exports | | | |
|-------------------|---------|-------|-------|-------|---------|-------|-------|-------|
| | 2000 | 2005 | 2010 | 2012 | 2000 | 2005 | 2010 | 2012 |
| ASEAN | 16.6% | 31.4% | 41.1% | 28.9% | 8.6% | 14.3% | 12.6% | 14.5% |
| Brunei Darussalam | | | | 0.0% | 0.1% | 0.1% | 0.1% | 0.1% |
| Cambodia | | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% | 0.0% | 0.0% |
| Indonesia | 2.2% | 3.5% | 3.8% | 5.7% | 2.3% | 2.6% | 1.2% | 2.3% |
| Lao PDR | | | | | 0.0% | | 0.0% | |
| Malaysia | 2.8% | 4.2% | 4.1% | 6.2% | 2.3% | 3.3% | 3.3% | 3.5% |
| Myanmar | 0.1% | 0.0% | 0.2% | 0.4% | 0.2% | 0.0% | 0.0% | 0.0% |
| Singapore | 3.8% | 2.6% | 2.5% | 3.4% | 2.3% | 1.9% | 2.0% | 3.6% |
| Thailand | 3.0% | 5.6% | 10.6% | 6.1% | 1.1% | 4.6% | 4.2% | 3.1% |
| Vietnam | 4.7% | 15.4% | 19.9% | 7.2% | 0.5% | 1.8% | 1.9% | 1.9% |
| OTHERS | 48.4% | 34.5% | 30.4% | 40.0% | 71.7% | 62.2% | 66.4% | 62.9% |
| China | 5.7% | 4.8% | 5.1% | 8.0% | 3.7% | 2.2% | 5.0% | 5.2% |
| European Union | 12.6% | 9.3% | 8.5% | 7.5% | 16.0% | 20.2% | 25.6% | 18.7% |
| Japan | 0.5% | 0.5% | 0.4% | 0.4% | 23.6% | 16.4% | 11.2% | 14.5% |
| United States | 29.6% | 19.9% | 16.4% | 24.1% | 28.5% | 23.4% | 24.6% | 24.4% |
| TOTAL – ASEAN+4 | 64.9% | 65.9% | 71.5% | 69.0% | 80.3% | 76.5% | 79.0% | 77.3% |

Source: Author calculations from WITS/COMTRADE.

Figure 1. Philippine Product Orientation of Agriculture and Fisheries Exports, 2012



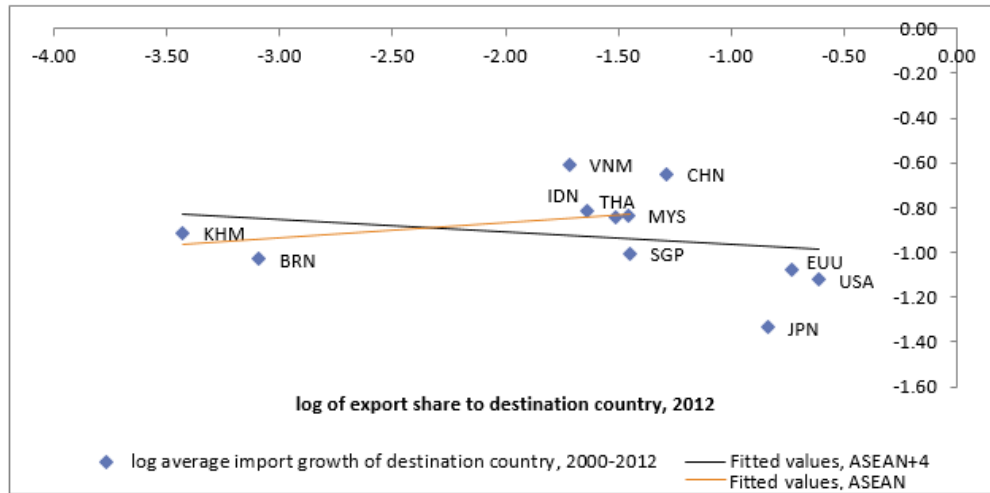
Source: Author calculations from WITS/COMTRADE.

A similar analysis is done in Figure 2 except this time the concern that is addressed is the destination of the country's exports. Thus, its horizontal axis measures the logarithm of the shares in the country's

total exports of a trading partner. Its vertical axis calibrates the growth of imports of the country's trading partners. Figure 1 shows import growth at the 4-digit product-level while Figure 2 shows import growth at the destination country-level.

The product orientation of Philippine agriculture and fisheries exports is neutral as shown by the relatively flat fitted line in Figure 1. This implies that the country is not moving its resources for exports to products that are being imported fast by the world. Nor is it putting these resources in products that are being phased out by our trading partners in their respective lists of imports. It indicates however a lack of dynamic responsiveness of the country in shifting its exports to products that have revealed themselves to be in high demand.

Figure 2. Philippine Geographic Orientation of Agriculture and Fisheries Exports, 2012



Source: Author calculations from WITS/COMTRADE

Geographic orientation, on the other hand, appears to be unfavorable when the four non-ASEAN countries are included in the analysis (see Figure 2). Specifically, destinations that receive larger shares of exports (i.e., the United States, the European Union, and Japan) have slower import growth. However, geographic orientation within ASEAN countries is favorable for the Philippines. These results suggest that there is a need for the Philippines to continue to focus on tapping the high-import growth ASEAN countries, such as Vietnam and Indonesia, along with China.

C. Comparative Advantage

The Philippines is the world's largest exporter of both crude coconut oil (45% share in 2012) and refined coconut oil (30% share in 2012). Between 2008 and 2012, the annual growth in value of world imports of refined coconut oil was 13%. The figure was even higher for the United State and China, with annual

growth rates of 25% and 37%, respectively. The Philippines is also the largest exporter of desiccated coconuts (35% share in 2012). In 2008-2012, the annual growth in world imports of desiccated coconuts was 14%, while the growth in Philippine exports was only 3%. This suggests an opportunity for the Philippines to increase exports of this commodity to meet the increasing global demand.

Another agricultural product where the Philippines has an advantage is pineapple. The country is a large exporter of pineapple products in various forms: fresh, dried, juice, and prepared or preserved. Under Heading Code 1604 (prepared or preserved fish, fish eggs, caviar), the Philippines has a comparative advantage in 'tunas, skipjack and bonito'. The country is also one of the top exporters of goods under this product group.

Table 14 shows the normalized revealed comparative advantage (RCA) index of the Philippines' top 10 exports in 2012. A normalized RCA or NRCA ranges from -1 to 1. If a given export product has a positive NRCA, it implies that the Philippines has a strong revealed comparative advantage in that good. On the other hand, a good with a negative NRCA reveals a lack of comparative advantage.

Table 14. Normalized Revealed Comparative Advantage (NRCA): Top 10 Exports, 2012

| Heading Code | Heading Description | Value of Philippine Exports (\$ millions) | Value of World Exports (\$ millions) | Share in Philippine Exports (%) | Share in World Exports (%) | NRCA Index |
|--------------|---|---|--------------------------------------|---------------------------------|----------------------------|------------|
| 1513 | Coconut, palm kernel, babassu oil, fractions, refined | 1,026 | 5,385 | 2.0% | 0.0% | 0.96 |
| 0803 | Bananas, including plantains, fresh or dried | 648 | 7,731 | 1.2% | 0.1% | 0.92 |
| 2008 | Fruit, nut, edible plant parts, prepared/preserved | 389 | 11,961 | 0.7% | 0.1% | 0.81 |
| 1604 | Prepared or preserved fish, fish eggs, caviar | 355 | 15,213 | 0.7% | 0.1% | 0.75 |
| 0801 | Coconuts, Brazil nuts and cashew nuts, fresh or dried | 199 | 6,204 | 0.4% | 0.0% | 0.81 |
| 0804 | Dates, figs, pineapples, avocados, guavas, mangoes | 172 | 5,554 | 0.3% | 0.0% | 0.80 |
| 1302 | Vegetable saps, etc, pectin etc, agar-agar etc | 154 | 10,908 | 0.3% | 0.1% | 0.61 |
| 2306 | Oil-cake other than soya-bean or groundnut | 122 | 6,253 | 0.2% | 0.0% | 0.70 |
| 2009 | Fruit and vegetable juices, not fermented or spirited | 118 | 14,993 | 0.2% | 0.1% | 0.39 |
| 1701 | Solid cane or beet sugar and chemically pure sucrose | 111 | 32,168 | 0.2% | 0.2% | 0.01 |

| Heading Code | Heading Description | Value of Philippine Exports (\$ millions) | Value of World Exports (\$ millions) | Share in Philippine Exports (%) | Share in World Exports (%) | NRCA Index |
|--------------|---------------------|---|--------------------------------------|---------------------------------|----------------------------|------------|
|--------------|---------------------|---|--------------------------------------|---------------------------------|----------------------------|------------|

Source: Author calculations from WITS/COMTRADE

D. Analyzing Regional Trade

The trade complementarity index (TCI) measures the extent to which two countries are “natural trading partners” in the sense that what one country exports overlaps with what the other country imports. On the import side, the TCI approximates the adequacy of a partner country’s export supply to the Philippines’ import demand by calculating the extent to which the Philippines’ imports match the country’s exports. With perfect correlation between sectoral shares, the index is one hundred; with perfect negative correlation, it is zero. Based on the data in Table 15, the Philippines appears to have a relatively high degree of trade complementarity with Singapore and Thailand, as well as the four non-ASEAN economies. Complementarity also exists in exports to Malaysia and imports from Thailand.

Table 15. Trade Complementarity Index, Philippine Agriculture and Fisheries Products

| Partner Country | IMPORTS | | | | EXPORTS | | | |
|-----------------|---------|------|------|------|---------|------|------|------|
| | 2000 | 2005 | 2010 | 2012 | 2000 | 2005 | 2010 | 2012 |
| Brunei | | | | 14 | | | | 23 |
| Cambodia | 27 | 26 | 40 | 17 | 13 | 21 | 17 | 16 |
| Indonesia | 16 | 14 | 11 | 13 | 11 | 15 | 16 | 15 |
| Malaysia | 16 | 16 | 13 | 16 | 24 | 29 | 27 | 28 |
| Myanmar | | | 13 | | | | 9 | |
| Singapore | 27 | 35 | 31 | 30 | 26 | 35 | 29 | 28 |
| Thailand | 23 | 33 | 41 | 28 | 23 | 24 | 23 | 23 |
| Vietnam | 18 | 25 | 34 | | 18 | 25 | 34 | |
| China | 28 | 21 | 26 | 29 | 28 | 21 | 26 | 29 |
| European Union | 41 | 34 | 38 | 42 | 28 | 31 | 28 | 30 |
| Japan | 25 | 22 | 25 | 27 | 33 | 32 | 29 | 29 |
| United States | 48 | 41 | 44 | 47 | 36 | 33 | 30 | 34 |

Source: Author calculations from WITS/COMTRADE

V. Economic Impact of AEC Tariff Reforms

This section examines how the country’s agriculture and fisheries industries may be affected by the AEC, using the changes in the tariff rates. As discussed in Section 2, the AEC is a free trade area, the hallmark of which is the elimination by the AMS of their respective tariffs against imports originating in ASEAN.

Only intra-ASEAN trade gets liberalized, while the trade of ASEAN countries with the rest of the world continues to be covered by the respective extra-ASEAN tariffs.

A. The Economic Model Used

The economic impact of the AEC tariff reforms is simulated using the Global Trade Analysis Project or GTAP model. Before taking up the results of the simulation, the GTAP model is described succinctly. The model represents the world economy, comprised of 23 regions representing actual countries or groups of them. Eight regions are in Southeast Asia, and the Philippines is one of them (see Table 16). The other parts of the world economy are highly aggregated, noting that there is hardly any trade that goes on between the Philippines and those countries grouped so largely.

There are 40 production activities in each of the 23 regions of the model. These are listed down in Table 17. The 40 activities are distributed as follows: 8 are primary agriculture; fishery; 3 are natural resource extraction activities; 9 are services sectors; and the remaining 19 are manufacturing industries.

A production activity transforms the services of the 4 primary factors, as well as other products, local or imported, into outputs. The model assumes that all business firms producing a given output are identical, and accordingly only one firm is needed to represent the collective of business firms producing the given output. Each industry produces one unique product. Combining two composites, one of the primary factors or value added and the other, the composite of intermediate inputs, produces the output. Both aggregates do not substitute each other.

Table 16. The Geographical Regions of the Model

| | | | | | |
|----|------------------------|-----|----|----------------------------------|-----|
| 1 | Indonesia | SEA | 13 | India | SA |
| 2 | Cambodia & Lao PDR | SEA | 14 | Rest of South Asia | SA |
| 3 | Malaysia | SEA | 15 | Australia and New Zealand | ANZ |
| 4 | Philippines | SEA | 16 | Canada | A |
| 5 | Singapore | SEA | 17 | United States of America | A |
| 6 | Thailand | SEA | 18 | Brazil | A |
| 7 | Vietnam | SEA | 19 | Rest of North and South Americas | A |
| 8 | Rest of Southeast Asia | SEA | 20 | European Union 27 | EU |
| 9 | China | EA | 21 | Middle East and North Africa | MEN |
| 10 | Hong Kong and Taiwan | EA | 22 | Rest of Africa | Af |
| 11 | Japan | EA | 23 | Rest of the World | ROW |
| 12 | South Korea | EA | | | |

Abbreviations: SEA - Southeast Asia; EA - East Asia; SA - South Asia; A – Americas

The value added is a composite of the 4 primary factors, whose services the industry uses to produce a given output. The aggregation is done such that the primary factors can substitute with each other. All

primary factors are unrestricted as to where they may be used as inputs in producing the output. The composite of intermediate inputs aggregates a local product and its imported substitute, which are substitutable with each other. The respective products of the 40 industries or production sectors of the model are used as consumer goods, intermediate inputs, or exported to other regions of the GTAP model.

On the use or consumption side of the economy, each region in the model has a representative private sector consumer and a government. The representative consumer draws its income from its ownership of the 4 primary factors of the model. These are skilled labor, unskilled labor, capital, and land. The consumer as well receives income transfers from the government and the rest of the world. After deducting the taxes it pays to the government, the consumer then apportions the disposable income as savings or spent on the products of the various industries. The government's income comes from taxes collected, of which there are three, namely indirect taxes, income taxes and taxes on traded goods. The government, like the consumer, spends on the products produced by the regional economy and on imports. Savings in the model are pooled by a global financial intermediary, and get allocated to the various regions based on their respective investment financing requirements. The investment expands the capital stock of the host region, however the added capital will only take effect in subsequent time periods and not in the year it is generated.

Table 17. The Production Sectors of the Model

| | | | | | |
|----|-----------------------|---|----|--------------------------------------|---|
| 1 | Paddy rice | A | 21 | Wood products | M |
| 2 | Cereals | A | 22 | Paper and publishing | M |
| 3 | Oil seeds | A | 23 | Leather | M |
| 4 | Sugarcane and Beet | A | 24 | Chemicals, rubber and plastic | M |
| 5 | Vegetables and fruits | A | 25 | Petroleum and coal | M |
| 6 | Other crops | A | 26 | Non-metal mineral products | M |
| 7 | Other animal products | A | 27 | Metal products | M |
| 8 | Cattle | A | 28 | Machinery products | M |
| 9 | Fishery | A | 29 | Electrical products | M |
| 10 | Forestry | N | 30 | Transport equipment | M |
| 11 | Mining | N | 31 | Other manufacturing | M |
| 12 | Oil and gas | N | 32 | Construction | S |
| 13 | Meat preparations | M | 33 | Fuel, electricity and water | S |
| 14 | Dairy | M | 34 | Transport services | S |
| 15 | Vegetable oils | M | 35 | Trade | S |
| 16 | Processed rice | M | 36 | Communications | S |
| 17 | Milled sugar | M | 37 | Financial intermediary | S |
| 18 | Other food products | M | 38 | Public administration, education and | S |
| 19 | Beverages and tobacco | M | 39 | Real estate and commercial services | S |
| 20 | Textile and garments | M | 40 | Rest of services | S |

Abbreviations: A - agriculture; NR - natural resources; M - manufacturing; S - services

The model is a numerical application of a competitive general equilibrium of an economy. A set of mathematical equations describes the conditions when such an economic balance is attained. It is then solved in order to arrive at the state of general equilibrium of the economies the model represents. The following are the conditions. First, all economic agents in the model (i.e., those that earn incomes) receive income transfers and incur expenses, spend exactly their respective incomes. Spending includes setting aside part of disposable incomes for savings purposes. Two, all markets of all factors, goods, services, regardless of whether they are national or global, have no excess demands. Three, all production activities wherever they occur have attained their respective highest profits, which in long run competitive equilibrium are zero.

The data used in the study comes from the latest version of the GTAP dataset (Narayanan, G. et al. 2012). This version 8.1 of the GTAP data is for the year 2007, which for analyzing the impact of AEC tariffs is close to 2010 when the FTA tariffs in ASEAN have been attained. To recall, the ASEAN member states gradually reduced their respective tariffs on intra-regional trade from the 1990s except for a few sensitive products and the flexibilities provided to the CLMV countries. This may imply that the magnitudes of the impacts of the tariff reforms may be smaller than if the analysis was started with a baseline, say, in 2000.

The structure of the model used in this study is carved out of the GTAP dataset, which comprises a total of 137 countries and 57 sectors. No other dataset in the world assembles the respective national income accounts data, national input output data, national trade flow data, national balance of payment data, national data on taxes, subsidies, and transfers, national family income and expenditures data, and related data of the 137 countries or regions in the dataset. The Center for Global Trade Analysis at Purdue University maintains and regularly updates the data set since the 1993 (Hertel, 2012). The GTAP center processes the above data and generates a social accounting matrix (SAM) for each of the 137 countries, 57 sectors, and 5 primary factors—i.e., the assembled GTAP dataset reflects the conditions for general equilibrium of the global economy and the national/regional economies comprising it.

The GTAP model is described in several research outputs coming out of the GTAP Center (e.g. Brockmeier, 2001). In addition, several applied policy studies had been published using the GTAP model, among the earliest being Hertel (1997). The GTAP model is set up as one that can be solved using GEMPACK (Harrison and Pearson, 2002). GEMPACK solves for percentage changes of the economic variables following a change of policies.¹⁰

¹⁰ An alternative solution technique is to solve for the counterfactual values of the economic variables of the model. For this, modelers use the GAMS software. Rutherford (2006) developed a GTAP model in GAMS.

B. Simulation Results

1. Tradeflows

Table 18 shows the simulation results on trade flows. Most of the gains in exports are in Southeast Asia. Thailand has the largest gain in terms of value, which 3.27 billion US dollars. This is followed by Malaysia, Indonesia and Singapore. Philippines gains 436.74 million dollars of exports, coming next to Singapore. The country has the lowest gain in exports among the ASEAN 5 states, which is expected considering that it has the lowest intra-regional exports of 73,645 million dollars, which is about 40% of Thailand's base exports.

Table 18. Changes in Overall Trade Values, by Region, world prices, US\$ million

| Region | Exports | | | Imports | | |
|---------------------------|--------------|---------|----------|--------------|----------|----------|
| | Base Value | Change | % Change | Base Value | Change | % Change |
| Indonesia | 128,764.63 | 1377.37 | 1.070 | 107,247.22 | 1624.01 | 1.514 |
| Cambodia & Lao PDR | 7,267.14 | 153.84 | 2.117 | 7,781.49 | 522.24 | 6.711 |
| Malaysia | 199,288.70 | 1502.28 | 0.754 | 148,303.03 | 2236.66 | 1.508 |
| Philippines | 73,645.76 | 436.74 | 0.593 | 66,581.98 | 844.31 | 1.268 |
| Singapore | 234,717.86 | 558.08 | 0.238 | 183,958.39 | 2693.17 | 1.464 |
| Thailand | 178,916.20 | 3268.91 | 1.827 | 149,053.11 | 4560.48 | 3.060 |
| Vietnam | 53,674.74 | 333.27 | 0.621 | 63,803.80 | 527.84 | 0.827 |
| Rest of Southeast Asia | 12,885.56 | 79.55 | 0.617 | 8,234.57 | 132.87 | 1.614 |
| China | 1,259,546.88 | -515.88 | -0.041 | 989,358.81 | -980.38 | -0.099 |
| Hong Kong and C. Taipei | 440,798.47 | -425.91 | -0.097 | 360,395.66 | -599.81 | -0.166 |
| Japan | 792,096.81 | 127.38 | 0.016 | 708,666.63 | -1296.81 | -0.183 |
| South Korea | 444,282.56 | -99.59 | -0.022 | 407,781.94 | -341.13 | -0.084 |
| India | 231,760.83 | -201.75 | -0.087 | 289,968.81 | -452.56 | -0.156 |
| Rest of South Asia | 47,933.80 | 2.35 | 0.005 | 81,568.23 | -40.48 | -0.050 |
| Australia and New Zealand | 202,682.92 | -95.36 | -0.047 | 207,628.20 | -245.28 | -0.118 |
| Canada | 421,508.22 | -36.19 | -0.009 | 413,766.31 | -113.97 | -0.028 |
| United States of America | 1,394,296.38 | -195.63 | -0.014 | 2,225,840.00 | -1318.00 | -0.059 |
| Brazil | 182,821.09 | -3.09 | -0.002 | 155,190.67 | -94.97 | -0.061 |
| Rest of the Americas | 663,593.69 | -1.50 | 0.000 | 610,017.50 | -42.94 | -0.007 |
| European Union 27 | 5,892,692.00 | -395.50 | -0.007 | 6,011,197.50 | -1704.00 | -0.028 |
| Middle East and N. Africa | 1,075,741.13 | -196.25 | -0.018 | 904,400.75 | -149.94 | -0.017 |
| Rest of Africa | 315,052.38 | -60.84 | -0.019 | 301,552.66 | -99.34 | -0.033 |
| Rest of the World | 1,067,271.25 | -147.88 | -0.014 | 918,941.75 | -187.63 | -0.020 |

Source: Authors' Computation

China, Hong Kong and Chinese Taipei, EU 27 and India are the regions that end up with lower exports. China, which has the largest export value after EU 27, loses the most at 516 million. It is followed by Hong Kong and Chinese Taipei. The US also loses exports, equal to 196 million dollars. On the whole there are more exports generated than lost. The net gain in exports globally is 5.464 billion US dollars.

The ASEAN is likewise where imports increase the most. The top gainers are Thailand, Singapore, Malaysia, Indonesia and the Philippines. The Philippines is expected to increase its total imports by 0.844 billion dollars, which is about 18% of the gain in imports of the largest gainer, Thailand. Imports contract for the majority of the regions of the world, with EU 27, United States, Japan, and China experiencing the largest losses. The losses, however, are less than a tenth of a percent of their base values, except for Japan, India, Hong Kong and Chinese Taipei, as well as Australia and New Zealand. Interestingly, Cambodia and the Lao PDR register to have significant gains in percentage terms of their trade, 2.1% and 6.7% respectively for exports and imports.

Crops

Tables 19 to 21 show the rates of increases of exports and imports by commodity, focusing on the key industries that produce or process agricultural or fish products, and on the ASEAN member states and their key trading partners. In rice paddy (Table 19), Malaysia and the Philippines are the leading export winners, the latter having a 9.09% rise of exports of paddy rice, which are mostly seeds. The country, as the figures below show, remains to be a major importing country of processed rice. Malaysia along with Cambodia and Lao PDR registers as having the highest expansion rate of its paddy rice imports.

Cereals are comprised of primary grains, wheat and maize, as well as cereal preparations. Rice would have been grouped with cereals but a separate industry is created in the model for processed rice. The Philippines both increase its exports and imports of cereals. Exports of cereals, which are food preparations based on cereals, increase by 0.4%. The country imports wheat and maize, and registered as increasing this by a third of a percent. The larger expansion rates of cereal exports are observed in the case of Cambodia and Lao PDR, 43.8%. The exported cereal is maize, which is used for feed purposes. Interestingly, the rest of Southeast Asia's cereal exports increase at the rate of 6.59%. This is largely Myanmar, exporting cereals to Thailand. Vietnam likewise shows it has a notable surplus in maize. Malaysia, Thailand and Singapore are the key importers of cereals. The rates of increase are much lower, but these flows are large since they also include imports of wheat and meslin by these countries from outside the region.

The CLMV member states are the key gainers in exporting oils and seeds. Cambodia and Lao PDR expanded their exports of the commodities by 28.36%. Vietnam likewise has a much lower, but still positive rate at 15.4%. It has a fairly large base exports compared to the former. Myanmar is among the top exporters of oils and seeds, although its base level is less than that of Vietnam. The group where Myanmar belongs to registers an export growth of 2.48%. Thailand has a higher rate of growth, although its base export is only about half of that of the rest of Southeast Asia. Indonesia has likewise a significant base level of exports, and that has expanded because of the AEC tariff liberalization by nearly

4%. The region of Cambodia and Lao PDR has the highest growth in imports of oils and seeds. This is followed by Thailand and Vietnam, 1.03 and 2.92.

Malaysia, Indonesia, Vietnam and Myanmar (RSA) are expected to increase their exports of fruits and vegetables, with Malaysia's exports growing at 9.03%. The Philippines exports goes down by 81%. Instead of exporting more, the country is expected to import more vegetables and fruits by 1.26%, which is far below the rates of increase observed for Myanmar, Cambodia, Lao PDR, and Thailand.

The simulation indicates that the Philippines may increase its exports in other crops by 280.8%. With base exports of these products at nearly 70 million dollars, comparable to that of Singapore, this is significant. However the magnitude is only about 3% of that of Indonesia and Vietnam. Despite this, it indicates how the country may nearly triple its exports in other crops. The country likewise has the largest expansion in the imports of other crops, 15.29%. Cambodia and Lao PDR as well as Malaysia are the other two member states with significant gain in imports.

Table 19. Percentage Increase of Tradeflows in Crops by Country

| | | IND | KHL | MSY | PHL | SGP | THA | VNM | XSE |
|-----------------------|-----|-------|--------|-------|--------|--------|-------|-------|-------|
| Rice Paddy | Exp | 6.69 | -33.27 | 18.85 | 9.09 | -16.26 | 0.14 | -1.47 | 1.56 |
| | Imp | 5.99 | 43.82 | 58.65 | -6.77 | 3.59 | 9.78 | 1.01 | 3.43 |
| Cereals | Exp | 3.67 | 60.75 | 0.59 | 0.4 | -6.65 | -0.33 | 3.26 | 6.59 |
| | Imp | 0.36 | 17.9 | 2.84 | 0.32 | 3 | 2.02 | 0.08 | -0.96 |
| Oils and Seeds | Exp | 3.92 | 28.36 | 1.07 | -0.59 | 5.39 | 5.63 | 15.42 | 2.48 |
| | Imp | 0.06 | 20.23 | 0.86 | 0.47 | 2.96 | 1.03 | 2.96 | -0.43 |
| Sugarcane and Beet | Exp | 6.58 | -8.49 | -4.29 | 0.5 | -11.3 | -9.82 | 0.92 | 5.88 |
| | Imp | -7.43 | 4.87 | 2.44 | -0.55 | 3.91 | 1.78 | -2.41 | -4.64 |
| Vegetables and fruits | Exp | 2.69 | 0.32 | 9.03 | -0.81 | -1.47 | -0.03 | 1.76 | 1.31 |
| | Imp | 0.47 | 27.28 | 0.77 | 1.26 | 3.14 | 13.31 | 1.19 | 5.8 |
| Other crops | Exp | -0.23 | 9.61 | 16.45 | 280.79 | 20.24 | 34.03 | -0.37 | 13.71 |
| | Imp | 0.46 | 11.84 | 6.25 | 15.29 | 2.3 | 1.38 | 0.54 | 3.8 |

IND - Indonesia KHL-Cambodia and Lao PDR MSY- Malaysia PHL- Philippines SGP- Singapore THA- Thailand VNM - Vietnam XSE – Rest of Southeast Asia

Source: Authors' calculation

Animal Products

Indonesia has the highest base level of exports in animal product other than cattle. It is closely followed by Malaysia. Vietnam and Thailand come next to Malaysia. The Philippines is second to the last, closely following the region of Cambodia and Lao PDR. In terms of changes as measured by the rate of increase of exports (Table 20), Singapore leads with 5.19%. Indonesia, Malaysia, and Vietnam posted an increase

although by less than one percent. Thailand's exports went down by 0.7%. Cambodia and Lao PDR have the highest reduction: 12.88% from a relatively low base. Philippines' exports went down as well by 1 percent.

The base levels of imports of animal products in ASEAN follow the same pattern as that of exports. The large importing countries are Indonesia, Malaysia, Vietnam, and Thailand. The results of the simulation indicate that there are minor changes in imports. The Philippine imports of animal products increase but only by half of a percent. The significant changes are observed with Cambodia and Lao PDR as well as Malaysia. The former has a rate of 8.52% on a relatively low base, second to the last in ASEAN.

Cattle trade is virtually low. The base levels of trade range from zero to as high as only 7.9 million dollars. Philippines is registered as reducing its exports of cattle products and increasing by nearly 2% its exports.

Table 20. Percentage Increase in Tradeflows of Animal Products by country

| | | IND | KHL | MSY | PHL | SGP | THA | VNM | XSE |
|-------------------|-----|-------|--------|------|-------|-------|-------|-------|-------|
| Other | | | | | | | | | |
| Animal Products | Exp | 0.6 | -12.88 | 0.77 | -1.01 | 5.19 | -0.7 | 0.28 | 1.38 |
| | Imp | 0.09 | 8.52 | 1.81 | 0.58 | 0.86 | 0.99 | -0.24 | 0.56 |
| Cattle | Exp | -0.23 | -30.87 | 0.78 | -3.52 | -4.43 | -0.09 | -0.87 | 23.58 |
| | Imp | 0.79 | 14.39 | 1.98 | 1.92 | 0.8 | 5.34 | 0.29 | 1.03 |
| Fisheries | Exp | 0.28 | -9.56 | 1.73 | -0.63 | -2.54 | -0.59 | 0.83 | 4.27 |
| | Imp | 0.17 | 17.66 | 0.24 | 3.3 | 1.92 | 4.13 | 2.15 | -0.02 |
| Meat preparations | Exp | -0.95 | -30.21 | 5.18 | 9.82 | 31.33 | -2.61 | 2.32 | 16.76 |
| | Imp | 1.16 | 110.93 | 0.57 | 2.16 | 2.39 | 3.32 | 1.14 | 1.50 |
| Dairy products | Exp | 23.97 | 7.19 | 6.96 | 7.47 | 6.75 | 4.48 | 17.33 | 15.00 |
| | Imp | 0.63 | 12.05 | 0.36 | 1.19 | 2.58 | 3.04 | 1.94 | 1.05 |

IND - Indonesia KHL-Cambodia and Lao PDR MSY- Malaysia PHL- Philippines SGP- Singapore THA-Thailand

VNM - Vietnam RSA – Rest of Southeast Asia

Source: Authors' calculation

Unlike cattle, trade in fish products is vibrant. Indonesia is the leading exporter in ASEAN. Thailand, Malaysia and Philippines come next to it. Indonesia's exports are registered at 435 million dollars. The Philippines exports amount to 121 million. Import flows follow a similar pattern.

The simulation results indicate that Malaysia increases its exports by 1.7%, lower than the rate of expansion of Myanmar. The latter however has a low level of exports in the base year, third from the lowest in ASEAN. The Philippines increases its imports by 3.3% and reduces its exports by nearly two-thirds of a percent. Cambodia and Lao PDR has relatively low trade levels. However, this market may expand. The region reduces its exports and expands its imports by 17.66%.

Thailand stands out in ASEAN as the largest exporter of meat product at 1.2 billion dollars. It is likewise the largest importer of meat products among the ASEANs. In comparison, the Philippines is about 4% of Thailand's trade levels, although it is third largest in ASEAN, closely following Vietnam.

The results indicate that Thailand may reduce its meat exports by 2.6% and imports more by 3.3%. Vietnam, the second largest player in meat trade in the region, expands both its exports and imports at the rates from 2.1 to 2.3%. It is noteworthy that the Philippines has a higher expansion rate than Vietnam, 9.8%. It increases as well its imports by 2.16%. This is interesting considering that the country is third largest in ASEAN in terms of trade capacity in meat products. The large gainers in imports in ASEAN are Thailand and the Philippines.

The Philippines is among the top exporters as well in ASEAN in dairy products. It has nearly 150 million dollars, which is fourth largest in ASEAN following Malaysia, Singapore and Thailand. Similar pattern is observed for imports of dairy. The rest of ASEAN have trade below 100 million dollars.

The three largest traders in dairy, Singapore, Thailand and Vietnam, all register with significant increases in their imports. Malaysia, the top trader, also increases its imports but only by a third of a percent. Cambodia and Lao PDR have the highest expansion rate in imports at 12%.

Among the ASEAN members, the Philippines appears to have the most capacity to cash in on the growing trade in dairy. Its exports rise by 7.47%. The rate is fourth from the top, lower than those of Indonesia, Vietnam and Myanmar. But these states are starting from a low export capacity of 60 million dollars, compared to the Philippines with a capacity of 159 million.

Processed Agri-based Products

The Philippines major exports of processed agricultural products are coconut oil and a variety of processed food items. The country's exports of coconut oil are less than palm oil exports of Indonesia and Malaysia. Coconut oil is only about 8% of palm oil exports of Malaysia. Indonesia and Malaysia are two of the largest sources of palm oil exports in the world. The data shows that the Philippines has not given the regional market adequate effort to penetrate it. Even in processed food items, it is also sixth in the order. Thailand is the largest exporter of processed food items. Indonesia, Malaysia, Vietnam and Singapore come next to it. The Philippines is third from the last.

The simulation results indicate that there are significant expansions of exports of beverages and tobacco (Table 21). The top gainers are Singapore, Philippines, Myanmar, Malaysia, Indonesia, Vietnam, and Thailand. Each of these is expected to increase its exports by at least 5%. The other group whose exports expanded by at least 5% is sugar. The top exporting member states are Vietnam, Singapore, Thailand and Malaysia. The increase of exports in other processed agri-based products is not as widespread and deep. Malaysia is the only country whose exports rises by at least 5 % of other food

preparations and processed rice. No member states increase their vegetable oils exports by at least 5% except Myanmar.

Interestingly, Cambodia and Lao PDR have consistently experienced reduction in their exports of all five processed agricultural products. They have relatively low base level exports, which may explain why their reduction rates are significantly high.

There are significant and widespread expansions of the respective export markets of processed rice, sugar, other food preparations, and beverages and tobacco. The only ASEAN state that consistently has a low expansion rate of imports is Singapore.

Table 21. Percentage Increase in Tradeflows of Processed Agri-based Products, by country.

| | | IND | KHL | MSY | PHL | SGP | THA | VNM | XSE |
|-------------------------|-----|--------|--------|-------|-------|--------|-------|-------|-------|
| Vegetable Oils | Exp | -0.54 | -22.94 | 0.87 | -1.22 | 4.53 | 4.66 | 2.55 | 5.40 |
| | Imp | 0.58 | 17.17 | 1.03 | 2.02 | 4.33 | 2.24 | 1.13 | 0.67 |
| Processed Rice | Exp | -4.38 | -23.05 | 18.04 | 3.96 | -10.96 | -0.01 | -1.65 | 1.37 |
| | Imp | -27.39 | 24.00 | 18.17 | 20.62 | 3.17 | 3.63 | 7.58 | -0.99 |
| Milled sugar | Exp | -8.27 | -10.78 | 5.33 | 1.58 | 18.87 | 9.69 | 21.27 | 4.14 |
| | Imp | 5.54 | 7.14 | 0.61 | 36.97 | 4.44 | 7.12 | 18.67 | -3.61 |
| Other food preparations | Exp | 2.09 | -12.70 | 10.98 | 0.86 | 3.36 | 1.55 | 1.64 | 1.14 |
| | Imp | 4.60 | 22.67 | 1.27 | 2.80 | 3.93 | 3.39 | 3.61 | 7.02 |
| Beverages and tobacco | Exp | 19.90 | -9.82 | 49.45 | 76.79 | 107.36 | 5.05 | 10.47 | 62.40 |
| | Imp | 12.59 | 11.59 | 46.07 | 1.35 | 1.64 | 23.18 | 22.58 | 22.07 |

IND - Indonesia KHL-Cambodia and Lao PDR MSY- Malaysia PHL- Philippines SGP- Singapore THA-Thailand
VNM - Vietnam XSE – Rest of Southeast Asia

Source: Authors' calculation.

2. Sectoral Outputs

The changes in sectoral outputs are shown in Table 22. For the Philippines, the results indicate that production of other crops will expand by 15.13%, followed by beverages and tobacco, 4.62%. This is offset by declines of production in rice, sugar, cereals and oils and seeds. There are more sectors that experience a fall by no more than 5%. It would be interesting to note that minor increases in output are observed in dairy, cattle, other animal products, and meat preparations.

The expansion rate of 15.13% is second highest observed of sectoral outputs in ASEAN. Singapore's beverages and tobacco grows by 45.85%. Cambodia and Lao PDR come next to the Philippines. Its cereals sector expands by 9.7%. Malaysia's output in beverages and tobacco increases by 8%. Thailand, the leader in most of exports of agri-based products, reached an expansion rate of 7.78% for its other

crops. Indonesia's sectoral production hardly increased. Except for rice paddy that grows by 1.64%, most other gainers do so at the rate of less than a percent.

Of the 16 sectors that Table 22 covers, 9 contracted in Indonesia. The sector with the largest decline is sugar milling. Cambodia and Lao PDR have 9 sectors registering a decline in production. Outputs of dairy, sugar and vegetable oils fall by at least 10%. Only 3 sectors in Malaysia contracted: other crops, rice paddy and processed rice. Singapore, Thailand, Vietnam and Myanmar have at least half of its sectors that contracted. Thailand has the most number, 12 industries. Philippines is next with 10 of its sectors contracting.

Table 22. Percentage Increase in Sectoral Outputs, by country.

| | IDN | KHL | MSY | PHL | SGP | THA | VNM | XSE |
|-------------------------|-------|--------|-------|-------|-------|-------|-------|--------|
| Rice Paddy | 1.64 | 0.58 | -5.31 | -4.58 | -3.43 | -0.04 | -0.47 | -0.09 |
| Cereals | -0.14 | 9.70 | 1.88 | -0.40 | -4.05 | -0.91 | -0.16 | 0.77 |
| Oils and Seeds | -0.25 | 0.71 | 0.78 | -1.02 | 3.58 | -1.06 | 6.72 | -0.07 |
| Sugarcane and Beet | -3.91 | -8.04 | 3.15 | -1.83 | -0.05 | 5.03 | -1.51 | -3.28 |
| Vegetables and fruits | 0.01 | -0.55 | 3.70 | -0.18 | -2.22 | -0.51 | 0.32 | 0.31 |
| Other crops | -0.12 | -1.60 | -6.04 | 15.13 | 5.15 | 7.78 | -0.56 | -1.09 |
| Other Animal Products | 0.02 | 0.93 | 1.40 | 0.17 | 1.62 | -0.56 | 0.11 | 0.16 |
| Cattle | -0.02 | 0.00 | 1.91 | 0.35 | -3.54 | -0.75 | 0.02 | 0.41 |
| Fisheries | 0.01 | -1.14 | 0.94 | -0.03 | -1.18 | -0.06 | 0.32 | -0.07 |
| Meat preparations | -0.12 | 2.66 | 0.90 | 0.06 | -1.41 | -0.80 | -0.10 | 0.16 |
| Dairy products | 0.37 | -24.56 | 3.09 | 0.45 | 2.02 | -0.86 | 0.05 | -0.50 |
| Vegetable Oils | -0.39 | -11.78 | 0.82 | -1.82 | 2.86 | -0.04 | -3.97 | -1.88 |
| Processed Rice | 1.76 | 0.03 | -5.18 | -4.78 | -0.21 | -0.04 | -0.55 | -0.02 |
| Milled sugar | -3.99 | -12.64 | 4.65 | -1.95 | 5.20 | 5.06 | -1.66 | -3.49 |
| Other food preparations | -0.01 | -3.80 | 5.02 | -0.17 | 1.21 | 0.42 | 0.62 | -0.86 |
| Beverages and tobacco | 0.43 | -4.45 | 8.09 | 4.62 | 45.85 | -1.48 | -4.30 | -27.98 |

IND - Indonesia KHL-Cambodia and Lao PDR MSY- Malaysia PHL- Philippines SGP- Singapore THA-Thailand
VNM - Vietnam XSE – Rest of Southeast Asia

Source: Authors' computation

VI. Readiness for AEC: Views from Private Stakeholders

How ready are the agriculture and fisheries sectors for AEC? Interviews with the private stakeholders in agriculture and fisheries were made. The interviewees were mostly members of five relevant sectoral committees of the National Agricultural and Fishery Council (NAFC) (see Annex 7). These sectoral committees are (1) food crops, (2) commercial crops, (3) poultry, livestock, and feeds, (4) fisheries and aquaculture, and (5) international trade. The interviewees were asked about their view of the AEC, particularly the reform measures specified in the AEC Blueprint that particularly affect their respective businesses. They were asked about how ready the agriculture and fisheries sectors are for regional integration under the concept of a single market and production base; about their concerns; and about their corresponding recommendations regarding the integration.

A. Factors Affecting Readiness

The private stakeholders who were interviewed have a good understanding and relatively deep knowledge of the AEC reform measures. They stated their concerns about their respective sectors' readiness of their respective industries in particular and the agriculture and fisheries sector in general to adjust to the idea of having a regional single market and production base.

At least for the country's export-oriented sectors such as mangoes, bananas and pineapples, the Philippines is ready for ASEAN integration in terms of quality of these products. Commodities like coffee, cocoa, tuna, seaweed, shrimp, and onion are produced in the country and they meet international quality standards. The country's sardines have one of the lowest prices in the world. Competitiveness is about one's product being among the most responsive to the requirements of buyers at affordable prices.

However, it is in volume of these products that the country needs to work harder. In coffee and cocoa for instance, production is inadequate to satiate local demand, which leads to the country being a net importer as far as these commodities are concerned. One positive picture when production capacity is the issue is coconut oil, where the Philippines is the world's top exporter. Nonetheless, the country needs to produce more to meet increasing demand of coconut oil. The technology used to produce coffee and the country's fishing expertise are internationally recognized. Filipinos engaged in these businesses are the ones who apparently train their counterparts in Indonesia.

Aside from exogenous shocks like extreme climatic conditions such as what transpired with Typhoons Santi and most especially Yolanda in 2013, the amounts the country can produce from the various production activities in agriculture and fisheries get constrained by high production costs. Four factors underpin how this is so.

First is the high cost of power in the country relative to other parts of the region. In selected industries that require a cold chain facility such as onions, meats or dairy products, whose shelf life is relatively

short, this is an important concern as the facility is intensive in energy. Production of these perishable products gets limited by the available storage space in these facilities, and their affordability in export markets is undermined by the high storage cost which in turn is traceable to expensive energy.

Second, the country has a relatively limited infrastructure base, and current levels of public investments to expand the country's road systems, ports, and irrigation facilities remain inadequate. Moreover, the country's public ports lack the necessary facilities, such as cranes, which increases cargo handling costs. Irrigation facilities are particularly very important for food and commercial crops in general. They determine frequency of plantings, farm yields, and therefore outputs. High cost of transportation cost reduces the competitiveness of the products of agriculture and fisheries. The private sector representatives were not explicit about specific location and scale of public investments needed to arrest the decline of productivity of the agriculture and fisheries industries. However with limited funds, the government would have to prioritize among competing proposed facilities requiring public investments.

Third, local costs of production inputs are high. Because of this, producers import the necessary inputs. In fisheries, the country's commercial fishing enterprises usually import fishing vessels and steel cable for their nets. Yellow corn gets substituted by imported feed wheat. There are several such other examples, and the reason for this is that either the local inputs are more expensive, that quality of these local inputs is below the standards required for the desired fishing efficiency, or both. Usually, they pay zero duty for these inputs ostensibly in support of the modernization of agriculture and fisheries, but the value-added tax (VAT) is high.

In many instances, public regulations help make these inputs expensive. To encourage local production of these inputs, imported substitutes are taxed higher, which in turn decreases productivity in two ways. By raising the prices of imported inputs, the high degree of import protection increases as well the prices of local import substitutes. This in turn shrinks the local market limiting production. More importantly, it deprives local producers of the opportunity to improve the quality of their products, knowing that competition from imported inputs is made weaker by the high import protection.

The other channel how public regulations may adversely affect productivity is in trade costs, or the costs to comply with trade-related regulations such as the sanitary and phyto-sanitary (SPS) measures. Either the regulation is inefficiently enforced or corruption is widespread, which may explain why agricultural and fisheries products are expensive. In meeting product standards regulations may require certifications from accredited laboratories. Laboratories are important to insure the country's exports satisfy their appropriate product standards. The lack of these facilities raises trade costs. The NFA owns and operates laboratory facilities to cater to demands of food exporters for laboratory analyses needed in obtaining product safety certifications required of food exports. There are few such laboratories in the country, and thus it takes the NFA take half a month to produce laboratory results. This adversely affects the competitiveness of the country's agricultural exports.

Laboratories are also used in research to develop new technologies or new products. More public investments are required to improve our processing technologies, develop the country's human capital stock to complement improvements in technology and sustain the productivity gains from better infrastructure.

Lastly, producers incur additional transaction costs particularly in marketing and transport costs. Vegetables from Baguio city are priced relatively low at point of first sale. Through the supply chain, their prices increase and at their final sale in Manila become staggeringly high, because of transaction costs. Farmers also incur additional compliance costs if they opt to comply with good production practices like good agricultural practices (GAP) or good manufacturing practices (GMP). These practices nonetheless are necessary to improve the quality of agricultural products in general and vegetables in particular. But just like the lack of accredited laboratories, the practice of certifying for complying with GAP or GMP standards is still in its infancy in this country. Exporters requiring these services end up paying added costs either due to delays in getting accreditation, which reduces the profitability of exporting the product.

Access to market-related Information is poor. This is due to generally lack of communication infrastructure facilities. To farmers, as well as small and medium enterprises, acquiring the information is costly, and it may not worth their while to invest in market information for their respective businesses. While not all of these information are on a per transaction basis, policies and regulations do change from time to time, and therefore farmers or SMEs need to be updated of these changes as they are enabled. For example, how do farmers or SMEs get to understand or acquire updated information on rules of origin (ROO)? Their competitors in export markets may already have this information, and before the local producers know about it they already lost the market for failing to comply with existing regulations.

Cost of market information, if relatively high compared to the scale of production of farmers or SMEs, may explain why these businesses may not seize the market opportunities created by integration. But the high cost of information may not necessarily be due to lack of communication infrastructure, telephones or mobile phones, but may also reflect the lack of services, which organize market information and make it available to users. Commonly private sector services shy away from these businesses due to lack of excludability of users, which in turn makes enforcement of payment for information difficult. However, with mobile phone technology this concern may not be as serious as it had been in the past.

B. How About Local Producers?

Those who said in the interviews that their respective industries are not ready for regional integration raised several issues. The integration effort is overly focused on increasing consumer well-being. Trade liberalization and facilitation are expected to reduce prices of farm products, and thus incomes of

farmers, most of whom are living in poverty. Local producers may be able to export, but nothing is really left with them because the prices they may receive are very low.

There is the perception that if the country allows foreign investors to come and invest in agriculture and fisheries, these investors may gain market power. Once this is realized, the market power that they wield may end up making both consumers and local producers worse off. A good case to illustrate this point is that of Charoen Pokphand Foods Philippines Corporation (CP). The company is fully owned by the Charoen Pokphand Group, a Thai multi-national conglomerate, with businesses in about 15 countries. Known to be primarily in agro-industry and food, the CP group is relatively large, employing over 288,000 workers worldwide and generating US\$33 billion annually, but not all of those revenues come from agriculture.

Aside from the issue of giving a foreign company investment incentives using taxpayer's money to compete with Filipino companies, CP is seen by its critiques to take over the local market of our farmers, particularly the chicken producers, depriving them of livelihood and jobs. Clarete (2013) assessed that these fears would not be realized. CP is expected to outsource its broiler growing activity, just like the rest of local large integrated broiler farms. Jobs will be created out of this investments and thus more income for the small players in the business. Large integrated farms like that owned by San Miguel Corporation can compete with CP. The prospect that CP takes over the industry would not be likely. Critics of the policy that allowed CP to become a local producer are concerned about the plight of the local backyard chicken producers. But CP does not have adequate land resources. It has to go into contract growing of its broilers, as they do in Thailand and in Vietnam. Contract farming between small chicken producers and CP has to happen, reducing therefore the risk of displacements.

There is the issue of food security in the case of rice. If a 2008 rice shortage occurs again, integration may make the country worse off. Allowing foreign rice to come in may eliminate local producers from the domestic market and make the country become completely dependent on rice imports. If a rice shortage happens, exporters, like Vietnam or Thailand may choose not to sell to us to keep their own domestic supply enough. These food security concerns have been taken up by Clarete (2014), who assessed that the likelihood of that happening is low. What transpired in 2008 was actually the result of a lack of coordination and cooperation in managing the risks of possible bad harvest in Vietnam among the member states. The ASEAN now realizes the importance of working together to avert a self-fulfilling crisis in food by supporting the ASEAN rice trade forum.

There is the concern that the country becomes a services exporter and an importer of agricultural, fisheries and manufactured products. Those who articulated that the time for regional integration has not come yet, view that agriculture should be the takeoff point for industrialization and industrialization facilitates inclusive growth. Bypassing agriculture and industrialization and going directly to services makes inclusive growth hard to achieve because a service-led economy requires highly-skilled labor force. Focusing on agriculture and industries has a better chance of improving the overall welfare of the population.

Enhancing the welfare of agricultural workers seems to be inadequately addressed in the AEC Blueprint. Developing a healthier and more educated workforce in agriculture is important. The reforms should include those that improve the work conditions in every industry in agriculture and fisheries. Policies designed to pull the workers in agriculture and fisheries out of poverty, something not sufficiently addressed in the AEC Blueprint, need to be implemented. To foster inclusive growth, the objective of equitable development must go hand in hand with that of the single market and production base.

The trade facilitation reforms are feared to promote smuggling. For example, the temporary admission provision makes entry easier, and therefore raises the risk of smuggling. One suggestion as a countermeasure is to make all countries informed about all the shipments being made. An exporting country should inform the country importing its goods that everything about what left the former that is coming in to the latter. All related agencies should be informed to be able to prevent the abuse of these reforms through smuggling. Another is that to combat illegal fishing more effectively, regulations that insure that products did not come from illegal, unreported, and unregulated fishing activities must be required, as what is done within the European Union (EU). Also, as far as technology sharing is concerned, countries may not be willing to share technology to competitors. Patents of course become an issue.

The overriding message of the interviewees, whether they are exporters or competing with imported products, is that the government needs to more intensely support the local producers of the country to be more ready for the integration and reap the corresponding benefits. The government is spending billions of pesos in support of agriculture and fisheries. There are ways how this spending can be made more effective. Subsidies to producers are mostly in the rice industry. Some member states provide larger subsidies to their farmers. Thailand for example has a large farm price support program. Should the country follow Thailand and scale up its support in rice? This should be far from being desired. Indeed Thailand is having a big problem with respect to these subsidies to farmers. The program is very costly and has reduced their exports significantly. Worse, it does not know how to close the program and continue to be politically popular.

Local producers may find a way to be competitive other than being granted production or export subsidies. It is certainly harder for an industry to become competitive on its comparative advantage. Public support is still required but this will be in general services, research, development and extension or generally those that are allowed under Annex 2 of the WTO Agreement on Agriculture. Assuming that their counterparts in ASEAN receive financial subsidies, this path may be more difficult to follow to gain more market share.

The government supports agricultural sector though it is generally perceived to be not enough. First issue is that the government may be giving support, but things always get delayed. Second, the support is not sustained. Third if subsidies are granted, there is the need to ensure that they are well-placed and properly implemented. For instance, fertilizer subsidies are given by the government in the form of stubs to be used to buy fertilizer. These stubs however went to parties that are not really farmers, or were sold to obtain cash to be used for personal reasons. Fourth, the government may give support but

the support fails to produce the desired outcomes. For example, the government may be giving grants to finance research to help concerned industries. The problem is that there is not enough effort to make the results of these studies to be made available to the public and to all concerned parties.

Fifth, regarding investment in human capital for the goal of improving the quality of our agricultural products, government agencies in their effort to ensure that good manufacturing practices training are in accord with the appropriate standards, does not certify so if the GMP training was given by other institutions. This is the case of the Food and Drug Administration. The problem is that they lack personnel to do the training, another source of inefficiency. Sixth, we should also increase our efforts to reduce the costs incurred by producers from government regulations. For instance, GAP certification process in the Philippines is long and tedious. Also, the interpretation on the provision of the Fisheries Code on fish ban is still unresolved.

The government is asked by stakeholders to help in organizing value chains by giving fuel incentives and supporting the provision of post-harvest facilities, which takes the discussion to a seventh issue on the neglect of storage services. Regarding the value chain, the storage services sector is not even recognized as part of value chain, which may be because there really is very little value added here. The storage sector nonetheless facilitates production, e.g. in onion. Operators of storage facilities even finance farmers for them to be able to plant. They have to do this because they need to buy the produce of the farmers for them to earn. Thus when imports come in, it is the storage businesses that are adversely affected by falling prices. Not the farmers, who already sold their produce to warehouse operators.

Finally, the government seems to discourage exports instead of promoting it. Capital equipment and intermediate inputs in export production are subject to import duties and value added taxes, raising their prices to exporters and thus squeezing profits. Not all exporters, particularly the small and medium enterprises or their organizations, can locate in export processing zones operated by the Philippine Export Zone Authority (PEZA). For these firms, the removal of import duties and VAT paid on imported processing equipment and raw materials is recommended. It can also be the case that VAT be excluded in electricity used by exporting firms. These firms are exempt from the VAT on their exports, and thus do not have the mechanism how they may be able to retrieve their respective input VATs. Larger firms like those in mining are able to apply for reimbursements because of their stronger in-house capacity of tax lawyers and accountants. But even then these firms have to wait for years before they are able to retrieve their input VAT.

It has been said that the country's institutions do not have the necessary mindset to get the country ready for the regional integration under AEC. Our government merely reacts on what comes, instead of looking ahead and anticipating what might happen, and accordingly plan ahead and make the necessary measures. Apparently, from the perspective of some, there is a gap between the provisions of the AEC Blueprint and our own policies, and this gap should be filled by better institutions.

VII. Competitiveness of Philippine Agricultural Industries

The following section identifies agricultural and fisheries industries that may have promising export opportunities in ASEAN because of the AEC.¹¹ It provides profiles for a number of the Philippines' major agricultural and fisheries commodities, discussing opportunities for export as well as threats from imports. The commodities included are coconut, banana, sugar, tuna, corn, hog and chicken. All production and price data were obtained from CountrySTAT. Trade data was downloaded from WITS/COMTRADE.

One indicator of competitiveness is the domestic resource cost ratio (DRCR). The domestic resource cost of a traded product is the value in pesos of the non-traded inputs used in producing it divided by the net revenue in foreign currency gained in exporting the product, i.e. net of the imported inputs used in producing the same. The DRCR is the DRC divided by the exchange rate. If $DRCR < 1$, then the traded product is produced with comparative advantage, warranting expansion. If $DRCR > 1$, then domestic production does not have comparative advantage, warranting contraction. In a recent study, Briones (2014) estimated the DRCR of major agricultural commodities in the Philippines (see Table 23). To account for the presence of price distortions, Briones made a distinction between financial DRCR and economic DRCR. Thus, it may be the case that a commodity is financially profitable and apparently competitive, but economically unprofitable when market prices are corrected.

The results of the study are summarized as follows:

- Financial DRCR for all commodities under study are less than one, indicating that each activity is profitable from the private viewpoint.
- Based on economic DRCR, production of hogs, chicken, and rice should decline due to their high domestic cost. Distortionary price policies are currently preventing reallocation of resources away from these sectors.
- Despite the presence of high import barriers, the Philippines actually has comparative advantage in corn and sugarcane. For the former, productivity gains have coincided with climbing world prices. For the latter, import barriers do not appear to be essential for continued growth of the industry, particularly given the boom in world sugar price.
- Further expansion in the mango, coconut, milkfish, banana, and pineapple industries is warranted.

The Philippines' top exports in the period from 2008-2012 at the HS 6-digit level are shown in Table 24. Brunei Darussalam, Laos, Myanmar are not included in the analysis due to insufficiency of trade data.

¹¹ This acts on the suggestion of the Chairperson of the Senate Committee on Agriculture.

Singapore has also been excluded to avoid distortions. As a major trading hub, much of the country's imports are actually re-exported to other countries.

Table 23. DRCR Estimates for Selected Agricultural Commodities in the Philippines, 2012

| | DRCR, financial | DRCR, economic |
|--------------|-----------------|----------------|
| Hogs | 0.90 | 2.78 |
| Broilers | 0.91 | 2.04 |
| Rice | 0.58 | 1.90 |
| White maize | 0.82 | 0.72 |
| Yellow maize | 0.54 | 0.56 |
| Sugarcane | 0.47 | 0.56 |
| Mango | 0.54 | 0.50 |
| Coconut | 0.36 | 0.34 |
| Milkfish | 0.30 | 0.27 |
| Banana | 0.26 | 0.24 |
| Pineapple | 0.14 | 0.13 |

Source: Briones, R. 2014

The Philippines major exports include coconut products, bananas, canned tuna, pineapple products, and sugar. Most of these products are exported outside of ASEAN, despite the existence of demand from these countries. For instance, the Philippines only supplies 0.7% of the raw cane sugar imported by Cambodia, Indonesia, Malaysia, Thailand, and Vietnam.

The top 20 imports of the five ASEAN countries included in this analysis is in Table 25. For all the products in the list, the Philippines supplies less than 2% of their total imports. Opportunities may exist in commodities that the Philippines can produce competitively, such as sugar, animal feed, tobacco and palm oil. Corn also has potential for export since the country's production recently surpassed domestic demand.

Table 24. Top 20 Exports, Philippines, 5-Year Average (2008-2012)

| # | HS CODE | PRODUCT | PH Exports to World (\$'000) | PH Exports to ROA [†] (\$'000) | Share of ROA [†] in PH Exports (%) | ROA [†] Imports from World (\$'000) | Share Of PH in ROA [†] Imports (%) |
|----|---------|---|------------------------------------|---|--|--|--|
| 1 | 151311 | Crude coconut (copra) oil and fractions thereof | 731,595 | 24,802 | 3.4 | 161,210 | 15.4 |
| 2 | 080300 | Bananas, including plantains, fresh or dried | 440,858 | 1,463 | 0.3 | 4,214 | 34.7 |
| 3 | 151319 | Coconut copra oil (excl. crude) and fractions thereof | 336,678 | 1,315 | 0.4 | 62,071 | 2.1 |
| 4 | 160414 | Prepared or preserved tuna, skipjack and bonito | 254,813 | 2,023 | 0.8 | 81,554 | 2.5 |
| 5 | 080110 | Coconuts, fresh or dried | 206,036 | 2,236 | 1.1 | 23,882 | 9.4 |
| 6 | 200820 | Pineapples, prepared or preserved | 162,321 | 390 | 0.2 | 1,067 | 36.6 |
| 7 | 170111 | Raw cane sugar, in solid form | 132,460 | 10,906 | 8.2 | 1,668,168 | 0.7 |
| 8 | 040229 | Milk and cream in solid forms of >1.5% fat, sweetened | 124,495 | 93,979 | 75.5 | 206,953 | 45.4 |
| 9 | 130239 | Mucilages and thickeners, derived from vegetable | 121,264 | 6,176 | 5.1 | 44,773 | 13.8 |
| 10 | 240220 | Cigarettes containing tobacco | 94,967 | 72,359 | 76.2 | 342,502 | 21.1 |
| 11 | 030342 | Frozen yellowfin tunas | 82,679 | 7,901 | 9.6 | 232,974 | 3.4 |
| 12 | 200940 | Pineapple juice, unfermented | 76,217 | 1,027 | 1.3 | 1,906 | 53.9 |
| 13 | 230650 | Oil-cake and other solid residues of coconut | 73,140 | 16,407 | 22.4 | 25,862 | 63.4 |
| 14 | 080430 | Pineapples, fresh or dried | 65,196 | 91 | 0.1 | 662 | 13.8 |
| 15 | 240120 | Tobacco, partly or wholly stemmed/stripped | 63,498 | 10,902 | 17.2 | 694,348 | 1.6 |
| 16 | 200899 | Other fruit, etc, prepared or preserved, nes | 61,016 | 7,487 | 12.3 | 42,501 | 17.6 |
| 17 | 080450 | Guavas, mangoes and mangosteens, fresh or dried | 52,571 | 310 | 0.6 | 32,469 | 1.0 |
| 18 | 030613 | Frozen shrimps and prawns | 51,312 | 327 | 0.6 | 288,723 | 0.1 |
| 19 | 240310 | Smoking tobacco with or without tobacco substitutes | 48,161 | 5,911 | 12.3 | 113,206 | 5.2 |
| 20 | 200892 | Mixtures of fruit, prepared or preserved | 46,183 | 1,007 | 2.2 | 5,541 | 18.2 |

[†]Rest of ASEAN. Excludes Brunei Darussalam, Lao PDR and Myanmar due to insufficient data. Singapore is also excluded as it is a major trading hub; thus, a significant proportion of the products shipped to the country is re-exported.

Table 25. Top 20 Imports, Rest of ASEAN, 5-Year Average (2008-2012)

| # | HS CODE | PRODUCT | PH Exports to World (\$'000) | PH Exports to ROA [†] (\$'000) | Share of ROA [†] in PH Exports (%) | ROA [†] Imports from World (\$'000) | Share Of PH in ROA [†] Imports (%) |
|----|---------|---|------------------------------|---|---|--|---|
| 1 | 230400 | Oil-cake and other solid residues, of soya-bean | 768 | 768 | 100.0 | 4,003,964 | 0.0 |
| 2 | 100190 | Spelt, common wheat and meslin | 12 | - | 0.0 | 3,228,726 | 0.0 |
| 3 | 120100 | Soya beans | 25 | 17 | 69.8 | 2,524,239 | 0.0 |
| 4 | 170111 | Raw cane sugar, in solid form | 132,460 | 10,906 | 8.2 | 1,668,168 | 0.7 |
| 5 | 210690 | Other food preparations, nes | 41,180 | 5,341 | 13.0 | 1,284,369 | 0.4 |
| 6 | 100590 | Maize (excl. seed) | 0 | - | 0.0 | 1,185,727 | 0.0 |
| 7 | 100630 | Semi-milled or wholly milled rice | 341 | 27 | 8.0 | 1,125,433 | 0.0 |
| 8 | 230990 | Other preparations of a kind used in animal feed | 992 | 144 | 14.6 | 1,120,558 | 0.0 |
| 9 | 180100 | Cocoa beans, whole or broken, raw or roasted | 435 | 323 | 74.2 | 1,091,443 | 0.0 |
| 10 | 151110 | Crude palm oil | 6,390 | 5,332 | 83.4 | 1,089,521 | 0.5 |
| 11 | 040210 | Milk and cream in solid forms of =<1.5% fat | 523 | - | 0.0 | 1,032,772 | 0.0 |
| 12 | 030343 | Frozen skipjack or stripe-bellied bonito | 3,885 | 1,357 | 34.9 | 1,000,142 | 0.1 |
| 13 | 240120 | Tobacco, partly or wholly stemmed/stripped | 63,498 | 10,902 | 17.2 | 694,348 | 1.6 |
| 14 | 151190 | Palm oil (excl. crude) and liquid fractions | 694 | 302 | 43.6 | 680,012 | 0.0 |
| 15 | 190190 | Other food preparations of flour, etc, nes | 17,973 | 11,133 | 61.9 | 591,708 | 1.9 |
| 16 | 020230 | Frozen boneless bovine meat | 77 | - | 0.0 | 534,536 | 0.0 |
| 17 | 151321 | Crude palm kernel or babassu oil and fractions | 883 | 243 | 27.5 | 444,810 | 0.1 |
| 18 | 190110 | Preparations for infant use, for retail sale | 2,874 | 1,969 | 68.5 | 433,388 | 0.5 |
| 19 | 040221 | Milk and cream in solid forms of >1.5% fat, unsweetened | 112 | 93 | 83.4 | 427,871 | 0.0 |
| 20 | 110100 | Wheat or meslin flour | 6,647 | 6,555 | 98.6 | 425,019 | 1.5 |

[†]Rest of ASEAN. Excludes Brunei, Laos and Myanmar due to insufficient data. Singapore is also excluded as it is a major trading hub; thus, a significant proportion of the products shipped to the country is re-exported.

Coconut

The coconut palm is a versatile crop which requires little care; its many uses include food, fiber, fuel, water and shelter. The Philippines is one of the largest coconut producers in the world, second only to Indonesia, and accounted for 26.3% of global production in 2012. It is also the leading world exporter of various coconut products, including coconut oil and desiccated coconut. The coconut industry is a vital source of employment and additional income for many farmers in the Philippines.

The coconut palm is often referred to as the "tree of life" because of its many different uses. A list of some of the numerous products derived from coconut is in Box 1. Aside from these, the leaves and trunk are used for making brooms, furnishing, and decorations. All these products are in demand both locally and internationally. According to the United Nations Conference on Trade and Development (UNCTAD, 2012), some of the possible uses of coconut have not yet been fully commercialized but have the potential to increase the overall productivity of the industry.

Production of coconut in the Philippines has been steadily rising over the past few years, with exports accounting for the bulk of production. Domestic farmgate prices of copra, the dried coconut meat from which oil is expelled, have been volatile but are still much higher compared to prices in 2000. Annual prices in the early 2000s ranged from 5 to 12 pesos per kg. In 2011, the price of copra hit a high of 39 pesos per kg, which then tapered off to 23 pesos per kg in 2012.

The Philippines exports most of its coconut products to the US and Netherlands. In 2012, only \$91.5 million or 6.8% of exports went to ASEAN countries. In the same year, these ASEAN countries imported coconut products worth \$393.8 million from the world, only 23.2% of which came from the Philippines. Malaysia, the top importer in the group, purchases mostly coconut oil, the bulk of which it obtains from Indonesia.

Most of the Philippines' exports are also in the form of coconut oil, which has various applications in food, medicine, and industry. For instance, coconut oil is used for cooking, as a fuel additive, and as an ingredient in soaps and other beauty products. The demand for Virgin Coconut Oil (VCO), in particular, has grown significantly over the past years, driven by the increasing attention that consumers are paying

KERNEL (ENDOSPERM)

- fresh green and dry nuts
- copra
- coconut oil
- coconut water
- coconut juice
- coconut milk and cream
- coconut jam
- coconut yogurt
- vinegar
- desiccated coconut

HUSKS (MESOCARP)

- a) fuel
 - A. mulch
 - B. coir and peat (processed coir, rubberized coir for mattresses, car seats)

SHELLS (ENDOCARP)

- charcoal
- handicrafts
- activated carbon

Some Products and Uses of the Coconut Palm

to healthier diets and the new evidence on VCO's medicinal properties. This offers opportunities for Philippines exporters in niche markets.

The Philippines is also currently the major exporter of coconut/copra oil-cake for Vietnam. Oil-cake is the solid residue that is left after certain oil-bearing crops, such as coconut, have been pressed free of their oil. It is rich in protein and minerals and is used as livestock feed or fertilizer.

With the increasing popularity of coconut as a health food, there is a shift in the market towards high-valued food uses such as coconut water, coconut milk, spray dried coconut milk, coconut vinegar, and VCO. While this puts pressure on supply, the higher price should benefit producers and serves as an incentive to continue and expand production. The market for products from the husk of the coconut is also growing. Coir is mainly used in the processing of geotextiles, including floor mats and mattresses. Rubberized coir is used as upholstery padding for the automobile industry.

Table 26. Coconut Products: Potential Export Winners, Export Volume, tonnes, 2010-2012

| Product | 2010 | 2011 | 2012 |
|---------------------------|-----------|------------|------------|
| Virgin Coconut Oil | 2,737 | 4,914 | 6,002 |
| Coco Sap Sugar | 36 | 70 | 220 |
| Coconut Water (in liters) | 1,807,583 | 16,685,350 | 17,935,952 |
| Coconut Flour | 494 | 742 | 564 |
| Coir | 4,223 | 6,026 | 6,174 |

Source: Philippine Coconut Authority (2013)

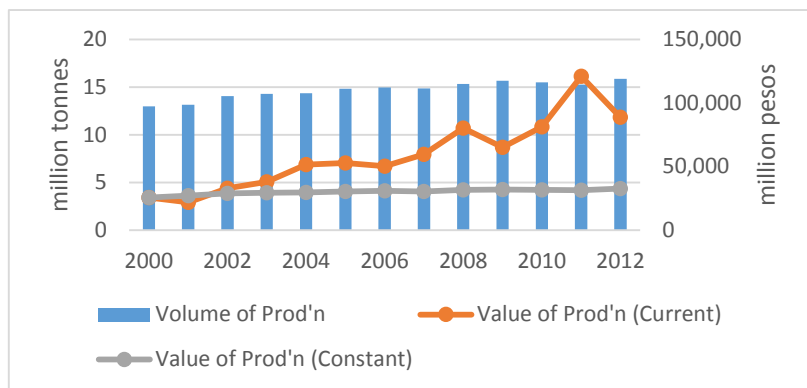
With the expanding number of products that can be derived from coconuts and the development of new technologies, it is expected that demand will continue to grow. The Philippine Coconut Authority (PCA) identified five products from coconut that have potential to be export winners (see Table 26).

Unfortunately, the Philippine coconut industry was affected by the devastation brought on by super Typhoon Haiyan, which struck in November 2013. According to FAO (2014), millions of coconut trees were flattened and more than a million coconut farmers were impacted. One of the areas hardest hit by the typhoon is the country's second-largest coconut-producing region, Eastern Visayas, where approximately 33 million coconut trees were damaged or destroyed. The PCA has estimated losses at \$396 million. In addition, the typhoon caused knock-on effects along the entire value chain, affecting people who are involved both directly and indirectly in coconut production. This includes farm owners, workers and traders, and those providing transport and logistics services. While coconut farmers have already started replanting, newly planted trees will take between six to eight years to reach maturity and return to full production.

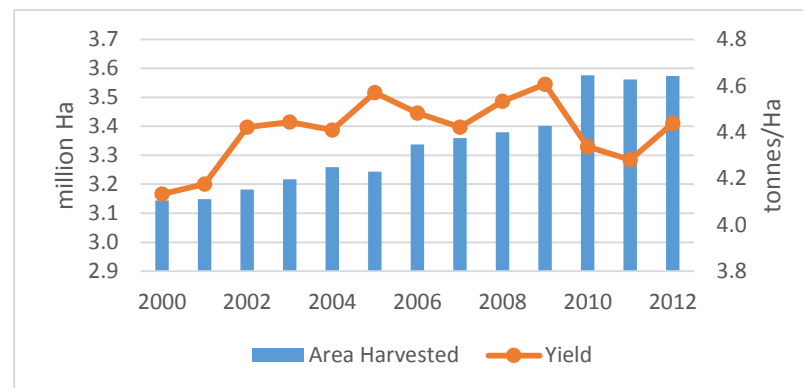
To ensure the reliability of supply and to cope with the increasing domestic and international demand, there is a need to intensify coconut planting and replanting in areas with potentially high yield. On the

other hand, product diversification and aggressive exploration of new markets is recommended to enhance and maintain demand.

Figure 3. Key Industrial Statistics: Philippine Coconut Industry



Coconut: Volume and Value of Production, Philippines, 2000-2012



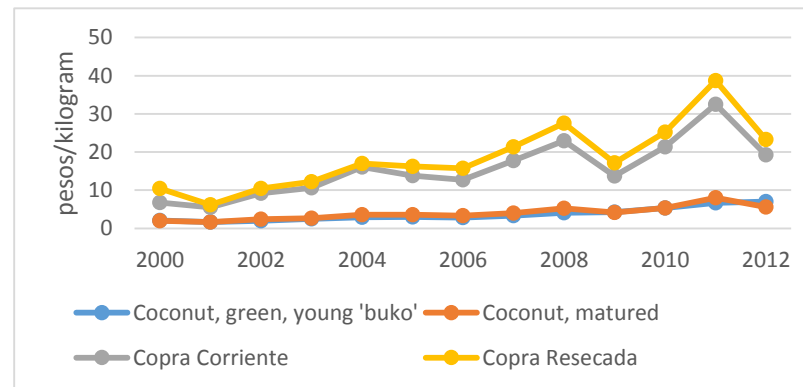
Coconut: Area Harvested and Yield, Philippines, 2000-2012

Major Producers (volume of production), 2012:

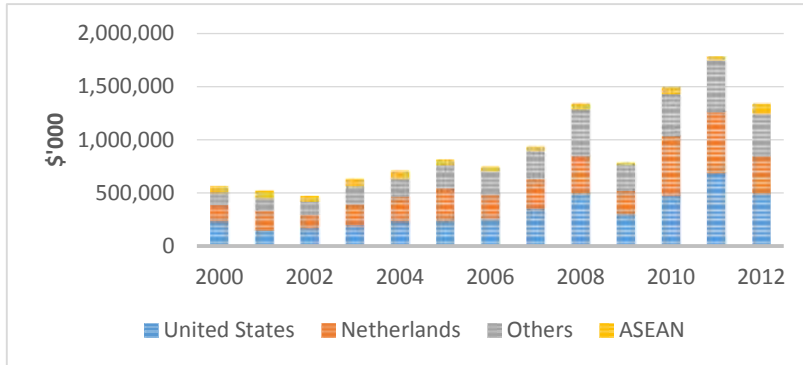
1. Quezon (7.3%)
2. Davao Oriental (6.8%)
3. Davao del Sur (5.6%)
4. Zamboanga del Norte (4.8%)
5. Leyte (4.3%)

Major Locations (area harvested), 2012:

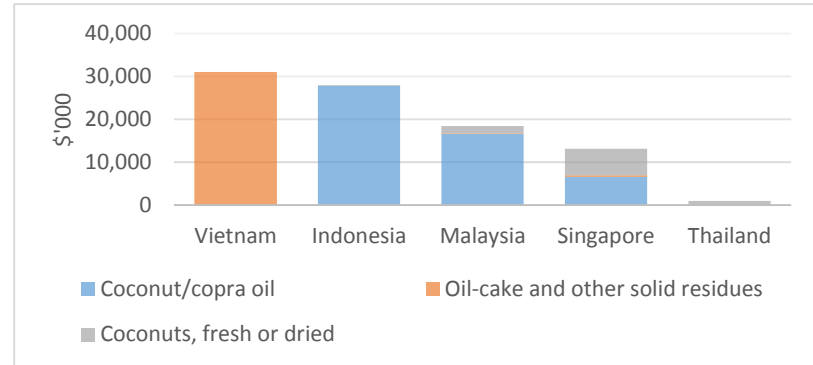
- Quezon (9.1%)
- Zamboanga del Norte (4.8%)
- Leyte (4.7%)
- Davao Oriental (4.4%)
- Zamboanga del Sur (3.6%)



Coconut: Domestic Farmgate Prices, 2000-2012



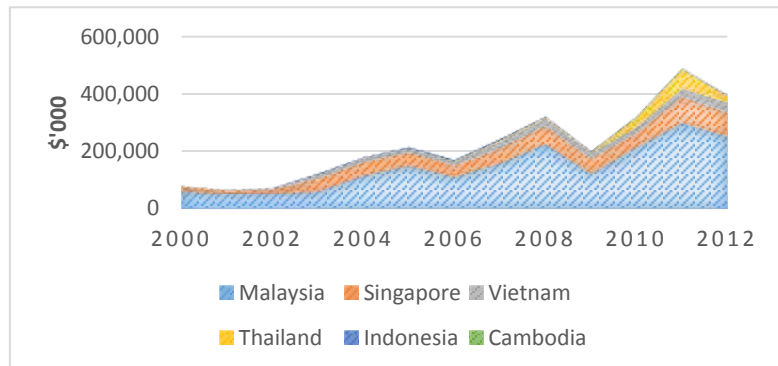
Coconut Products: Philippine Exports to World, by Partner Country, 2000-2012



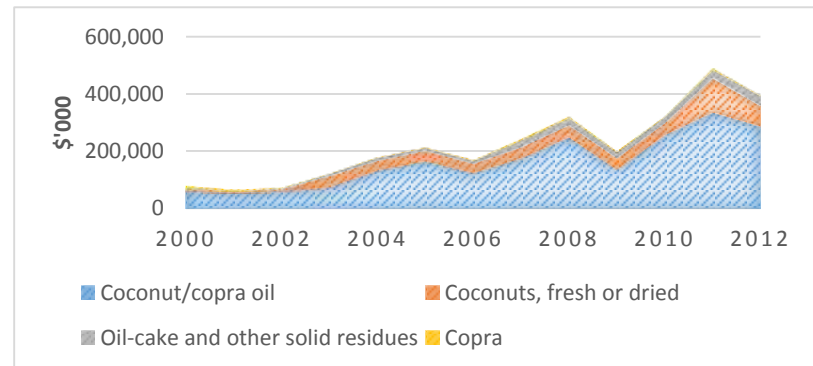
Coconut Products: Philippine Exports to ASEAN, by Partner Country and Product Type, 2012

Coconut Products: Trade Indicators, 2012

| Product | PH Exports to World (\$'000) | PH Exports to ROA [†] (\$'000) | Share of ROA [†] in PH Exports (%) | ROA [†] Imports from World (\$'000) | Share Of PH in ROA [†] Imports (%) |
|-----------------------------------|------------------------------|---|---|--|---|
| Coconut/copra oil | 1,016,086 | 50,965 | 5.0 | 286,433 | 17.8 |
| Coconuts, fresh or dried | 198,695 | 9,062 | 4.6 | 70,111 | 12.9 |
| Copra | 572 | 0 | 0.0 | 2,464 | 0.0 |
| Oil-cake and other solid residues | 122,053 | 31,483 | 25.8 | 34,767 | 90.6 |
| Total | 1,337,405 | 91,510 | 6.8 | 393,776 | 23.2 |



Coconut Products: ROA[†] Imports from World, by Reporting Country, 2000-2012



Coconut Products: ROA[†] Imports from World, by Product Type, 2000-2012

[†]Rest of ASEAN. Excludes Brunei, Laos and Myanmar due to insufficient data.

Banana

In 2012, global banana exports reached a record high of 16.5 million tonnes, a 7.3% increase from the volume in 2011. The Philippines also reached the peak of its performance in 2012, exporting 2.6 million tonnes which corresponds to 93.9% of all exports from Asia. The US and EU each imported approximately 27% of all bananas traded internationally, while other importers such as Russia, Japan, and China operated at a smaller scale. (FAO, 2014)

Bananas, particularly the Cavendish variety, are mainly consumed as a fresh fruit. However, they can also be processed to produce a variety of products such as dried bananas or “banana chips”, banana puree, banana flour and powder, or even banana juice.

The Philippines is the third-largest producer of bananas. The two main banana producing countries, India and China, are hardly involved in international trade. The Philippines, however, was the fifth-largest exporter in 2012 with an 8.1% share in value; behind only Ecuador (26.0%), Belgium (16.0%), Colombia (10.3%), and Costa Rica (8.8%). Note that Belgium does not actually produce bananas and is completely dependent on imports—sourced mainly from Colombia, Ecuador, and Costa Rica—for re-export to other EU countries.

Philippine banana exports have been steadily rising over the past decade, though a rapid increase has been observed since 2010¹². Almost half of the Philippines’ exports of banana go to Japan, who in 2012 obtained 93.5% of their imports from the Philippines. ASEAN imports of banana is small but is also slowly starting to increase, led by Thailand and Malaysia.

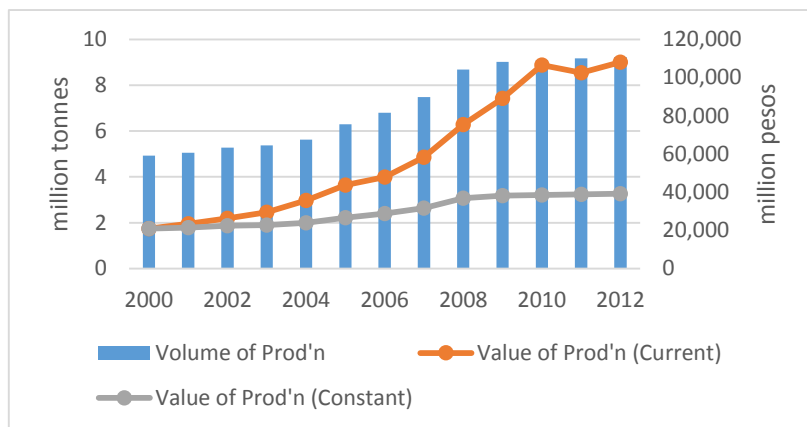
The production of bananas for export is delicate and costly because the plant is very fragile. In addition, there is concern regarding the spread of diseases. Due to these factors and its high perishability, bananas require careful control in the growing, packaging, transport, handling, ripening and distribution process. Historically, this led to a highly vertically integrated structure where large transnational companies were present at every stage of the marketing chain, from growing to final consumers. However, in the past 20 years, multinationals started shifting away from direct growing and now tend to establish long term supply contracts with independent local banana growers. These companies normally specify shapes, quantities, standards of quality, packaging, and often also provide inputs in order to control the quality. (FAO, 2014)

According to UNCTAD (2012), banana demand is expected to continue to increase until 2019, mainly driven by demand from emerging countries such as China. Exports of products marketed under Fairtrade and GlobalGap labels, as well as organic bananas, are also significantly increasing in volume. Increase in

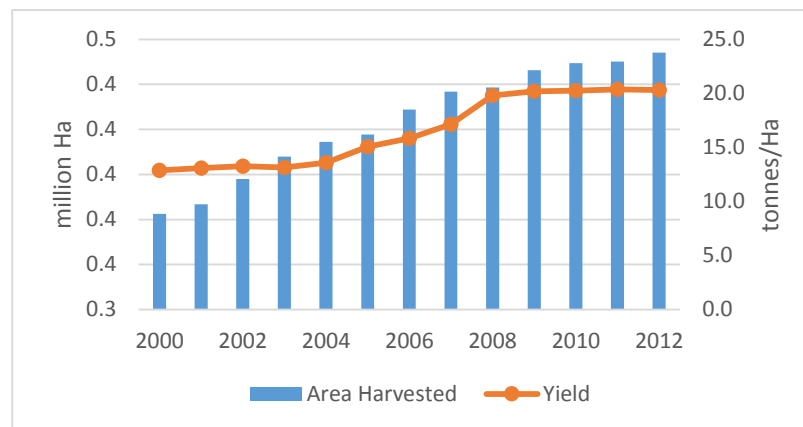
¹² In 2013, the Philippines became the first Asian country to exports bananas to the US.

production and the growth in trade is expected to benefit exporters that can meet the increasing requirements related to environment, food safety, and commercial policies of importing countries.

Figure 4. Key Industrial Statistics: Philippine Banana Industry



Banana: Volume and Value of Production, Philippines, 2000-2012



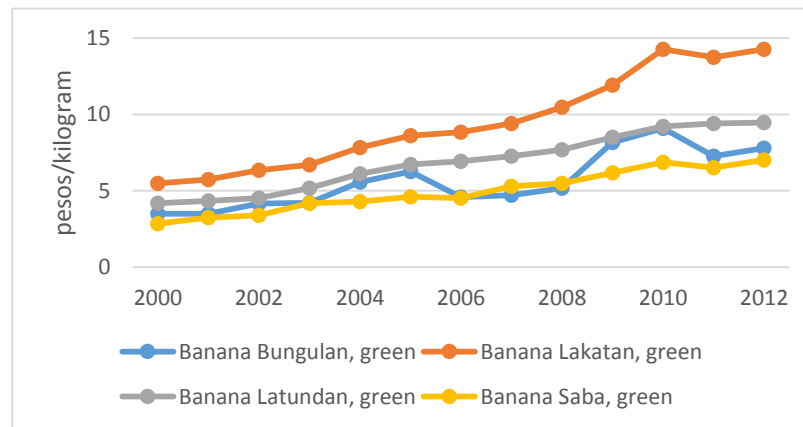
Banana: Area Harvested and Yield, Philippines, 2000-2012

Major Producers (volume of production), 2012 :

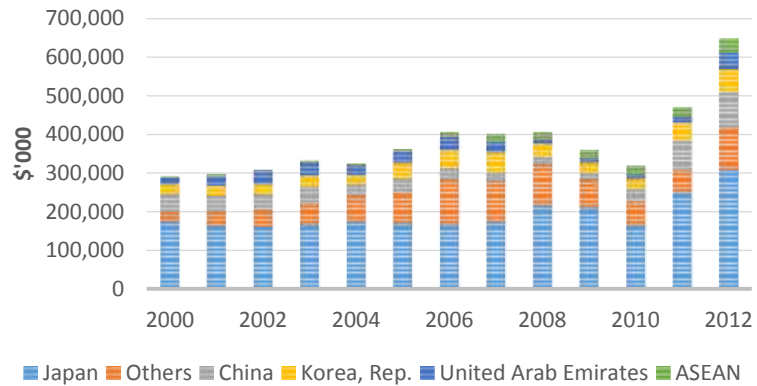
- Davao del Norte (16.7%)
- Compostela Valley (13.8%)
- Bukidnon (12.5%)
- North Cotabato (7.0%)
- Davao del Sur (6.3%)

Major Locations (area harvested), 2012:

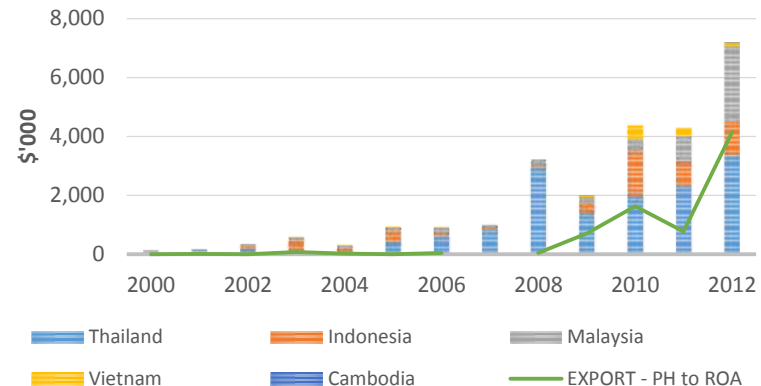
- Davao del Norte (7.8%)
- Compostela Valley (4.9%)
- Bukidnon (4.5%)
- Oriental Mindoro (4.0%)
- Maguindanao (3.7%)



Banana: Domestic Farmgate Prices, 2000-2012



Banana: Philippine Exports to World, by Partner Country, 2000-2012



Banana: ROA+ Imports from World, by Reporting County, 2000-2012

†Rest of ASEAN. Excludes Brunei, Laos and Myanmar due to insufficient data. Singapore is also excluded since a large proportion of the bananas shipped to the country is for re-export.

Sugar

Sugarcane is the fourth-largest crop (after rice, corn, and coconut) produced in the Philippines and provides direct employment to about 700,000 people. In 2012, the Philippines was the eighth-largest global producer of sugarcane. Other top producers include (in order of decreasing output): Brazil, India, China, Thailand, Pakistan, Mexico, and Colombia (FAOSTAT, 2014).

Philippine sugarcane output has been volatile over the past few years, with a sizable drop in 2010 due to El Niño. Approximately 90% of the sugar produced in the Philippines is sold for domestic consumption with most of the remainder exported to the US. Philippine sugar exports dropped in 2010 when domestic production faltered, before recovering sharply in 2011. Import quantities, on the other hand, have been fairly low except in 2010. The following year, imports returned to trend as domestic production recovered and world prices increased.

Sugar imports of ASEAN countries have risen considerably since 2004. However, the Philippines exports very little of the commodity to these countries. Indonesia and Malaysia, the two largest importers in ASEAN, obtain most of their sugar from Thailand and Brazil. Brazil is the largest sugar exporter in the world with 37.6% export value share in 2012, followed by Thailand with 11.7%.

One of the problems of the Philippine sugar export industry is yield inefficiency. While the Philippines' yield reached 61 tonnes/ha in 2012, this figure is still low compared to the top two exporters to ASEAN, Thailand and Brazil, who both had yields of 74 tonnes/ha in the same year (FAOSTAT, 2014). A factor contributing to low productivity is lack of cooperation: cane farms and sugar mills are often not coordinated in terms of capacity or geographic location.

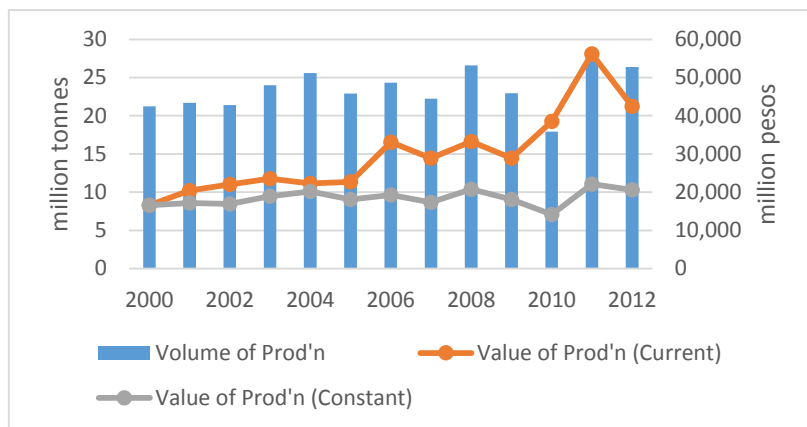
According to FAO (2013), the significant production growth in Brazil was due to the massive investment in technology that occurred in the 1990s, both at the farm level (in terms of the adoption of high performing sugarcane clones) and at the factory level (with the conversion of sugarcane into ethanol). Innovation is crucial to improve productivity in the sugar industry. Key drivers for innovation include: (i) adapting to the impacts of climate variability and longer term climate change; (ii) responding to the challenges of rising input costs and longer term competitiveness; and (iii) taking advantage of the opportunities for value adding in the sugar industry.

In the Philippines, the sugar industry is one of the most highly protected sectors, coming in second only to rice. The restriction on sugar imports results in significantly higher domestic sugar prices. However, under the ATIGA, the Philippines has committed to lowering its tariff on sugar to 5% by 2015. In a recent study, Cororaton (2013) analyzed the possible impact of this reduction in tariffs on the Philippine sugar industry. He projected an increase in sugar imports by an average of 40%. Cororaton notes, however, that domestic sugar production will hardly be affected by the higher import volume, declining by an average of 0.6% only. In addition, Philippine sugar exports to the ASEAN is expected to increase by an average of 4% while exports to the rest of the world will decline by an average of only 0.8%.

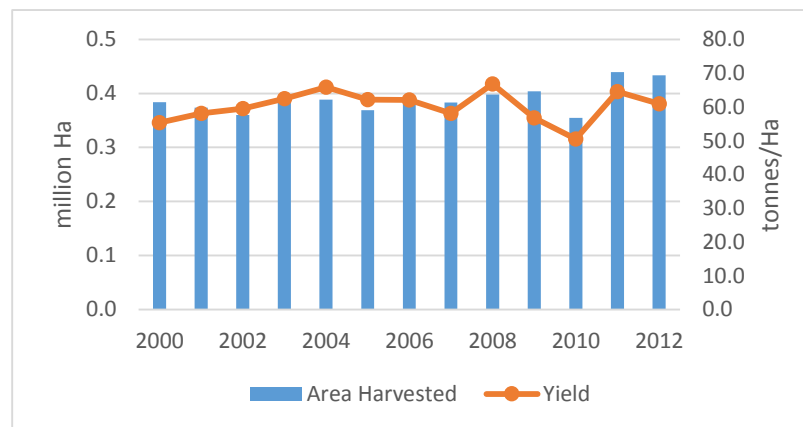
Real world sugar prices have been rising markedly since 2000, growing at an average rate of 4.2% (FAO). This suggests that the continued rise of global sugar demand has outstripped gains from increased capacity and improved yield productivity. One of the primary factors that affected sugar price over the past decade is the energy market. Ethanol, a fossil fuel substitute, uses sugarcane as one of its major inputs, and fluctuations in ethanol prices have a direct impact on the world sugar price. Producers in Brazil, for instance, opt to use their sugarcane to produce ethanol whenever the price of ethanol increases. This drives down sugar supply and raises the world sugar price.

Increase in population and per capita GDP in developing countries is expected to drive continued growth in global sugar consumption. Just this past decade, world sugar consumption increased by 26%. The sugar market is also strongly impacted by changes in policy of specific countries. For instance, the removal of sugar production support in the EU due to reforms in 2006-07 led to the region's shift from being a net exporter of white sugar to a net importer of raw sugar. It is estimated that EU sugar imports will grow from around 3.2 million tonnes in 2007-10 to over 4 million tonnes by 2021. Globally competitive sugar exporting countries are thus expected to benefit from the increased sugar demand in these markets. (Amrouk, Rakotoarisoa, & Chang, 2013)

Figure 5. Key Industrial Statistics: Philippine Sugar Industry



Sugarcane: Volume and Value of Production, Philippines, 2000-2012



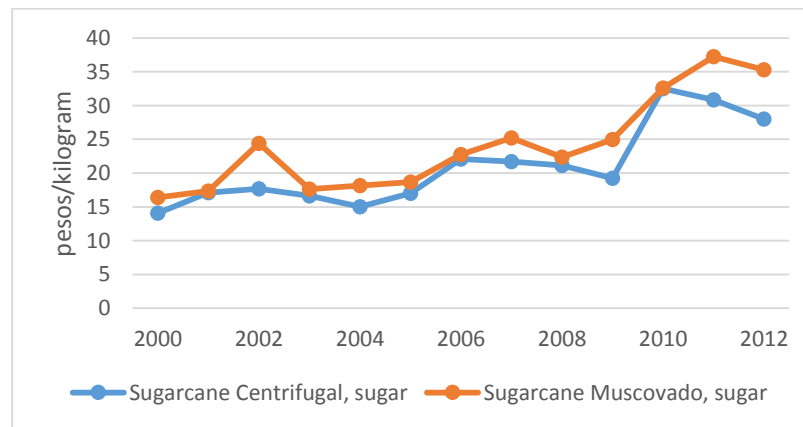
Sugarcane: Area Harvested and Yield, Philippines, 2000-2012

Major Producers (volume of production), 2012:

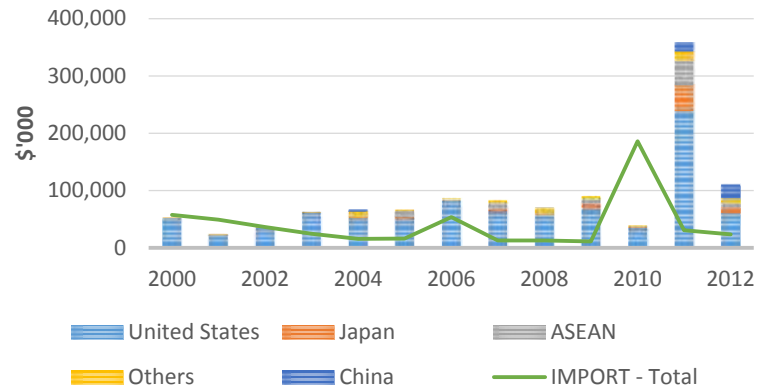
- Negros Occidental (48.8%)
- Bukidnon (15.3%)
- Batangas (7.0%)
- Negros Oriental (6.4%)
- Iloilo (4.4%)

Major Locations (area harvested), 2012:

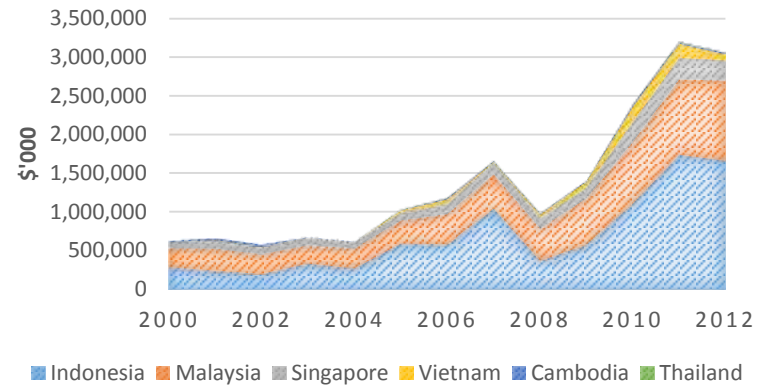
- Negros Occidental (42.2%)
- Bukidnon (17.6%)
- Negros Oriental (8.3%)
- Batangas (7.0%)
- Iloilo (4.9%)



Sugarcane: Domestic Farmgate Prices, 2000-2012



Sugar [HS 1701]: Philippine Exports to World, by Partner Country, 2000-2012



Sugar [HS 1701]: ROA[†] Imports from World, by Reporting Country, 2000-2012

[†]Rest of ASEAN. Excludes Brunei, Laos and Myanmar due to insufficient data.

Tuna

Fisheries is a very important industry in the Philippines, contributing to about 4% of the country's GNP; over 1.5 million people in the country depend on the industry for their livelihood (BFAR, 2012). Tuna is among the species of fish found in the Philippines that have high commercial value. The country is one of the top ten exporters of both frozen and canned tuna in the world.

The Philippine tuna fleet has been severely hampered by the loss of access to Indonesia waters in 2007, along with the closure of several areas on the high seas. To maintain catch levels, the domestic fleet is under pressure to find additional fishing grounds (Hamilton, Lewis, McCoy, Havice, & Campling, 2011). Philippine tuna volume of production declined after 2007 though value of production has remained relatively stable due to rising prices. Tuna prices have been increasing rapidly in recent years, indicating that supplies are lower than demand. Following this trend, canned prepared/preserved tuna prices are also on the rise.

In 2012, exports of tuna products from the Philippines was valued at \$405 million, three times the export value in 2002. Prepared or preserved tuna constituted the bulk with 75%, followed by frozen tuna with 23%. Major export destinations include the US, Germany, Japan, and the UK. Imports, on the other hand, was valued at \$33 million and was mostly in the form of frozen tuna. Approximately 46% of this was imported from Papua New Guinea (PNG).

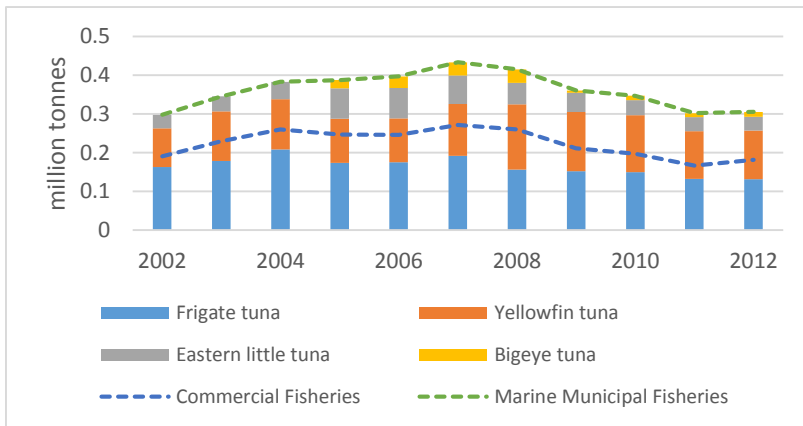
Tunas are caught throughout Philippine waters but the most productive fishing grounds are the Sulu Sea, Moro Gulf, and waters extending to the north Celebes Sea (BFAR, 2012). The industry is primarily centered in General Santos City in South Cotabato, due to its strategic geographical location and the presence of facilities and equipment needed by the fishing industry.

In the past two decades, Philippine companies have been fishing for tuna in international waters or high seas due to the decline in catch rates in Philippine waters. The Philippines has one of the largest fishing fleets operating in the Western and Central Pacific Ocean. Unfortunately, the catch rates of Philippine vessels are lower than those operated by other fleets that have larger and more modern ships (e.g. Japan, Taiwan, Korea). Catch from Philippine vessels is largely processed by domestic canneries, while a portion is processed by PNG canneries that are owned by Filipinos. The rest is exported to other countries. (Hamilton, Lewis, McCoy, Havice, & Campling, 2011)

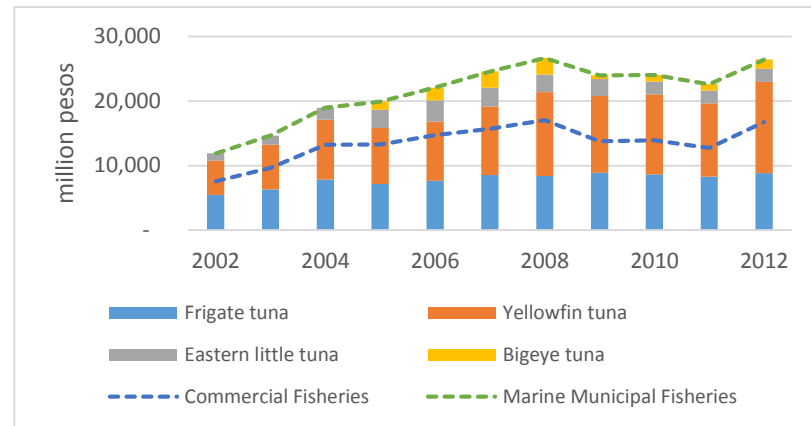
ASEAN is a net exporter of tuna. The top exporter is Thailand, followed by Indonesia. Thailand is the world's largest exporter of canned tuna as well as the second-largest importer of frozen tuna. The major importers of canned tuna in the world are EU (44%) and US (16%). The Philippines is hopeful that it will get better access to the EU markets in 2014, and is expecting to receive preferential treatment for its canned tuna exports under the enhanced Generalized Scheme of Preferences or GSP Plus program (FAO,

2014). Global demand of canned tuna is expected to remain strong given that it is a price-competitive and nutritious source of protein.

Figure 6. Key Industrial Statistics: Philippine Tuna Industry



Tuna: Volume of Production by Type, Philippines, 2002-2012



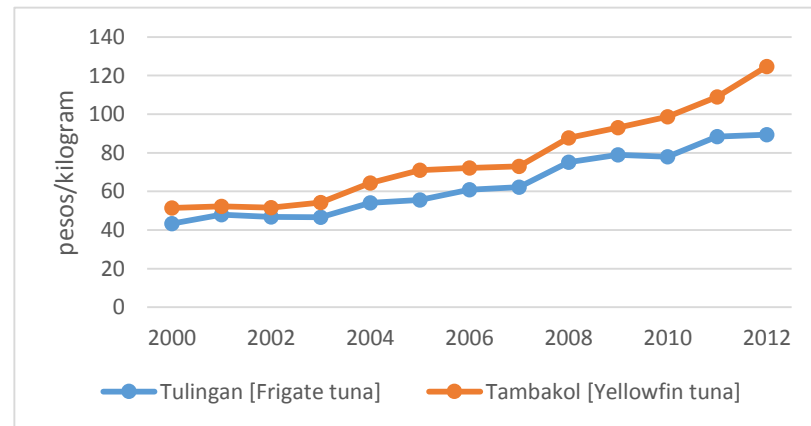
Tuna: Value of Production by Type, Philippines, 2002-2012

Major Producers (volume of prod'n), Commercial Fisheries, 2012:

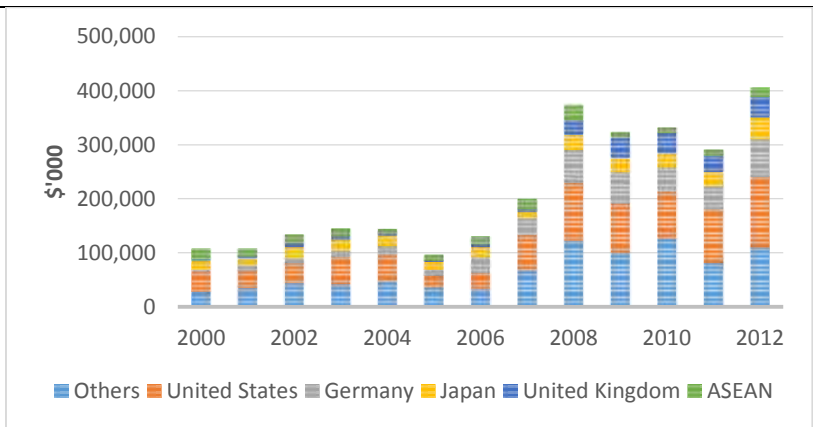
- South Cotabato: 54,966 tonnes (30.3%)
- Sulu: 29,932 tonnes (16.5%)
- Quezon: 14,976 tonnes (8.2%)
- Zamboanga del Sur: 12,059 tonnes (6.6%)
- Zamboanga City: 5,840 tonnes (3.2%)

Major Producers (volume of prod'n), Marine Municipal Fisheries, 2012:

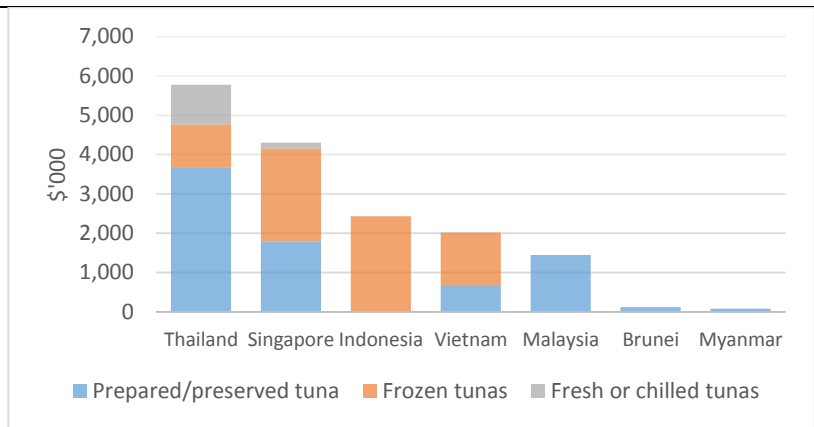
- Palawan: 14,831 tonnes (12.0%)
- Tawi-tawi: 8,045 tonnes (6.5%)
- Zamboanga del Sur: 7,104 tonnes (5.7%)
- Eastern Samar: 6,935 tonnes (5.6%)
- Zamboanga City: 6,042 tonnes (4.9%)



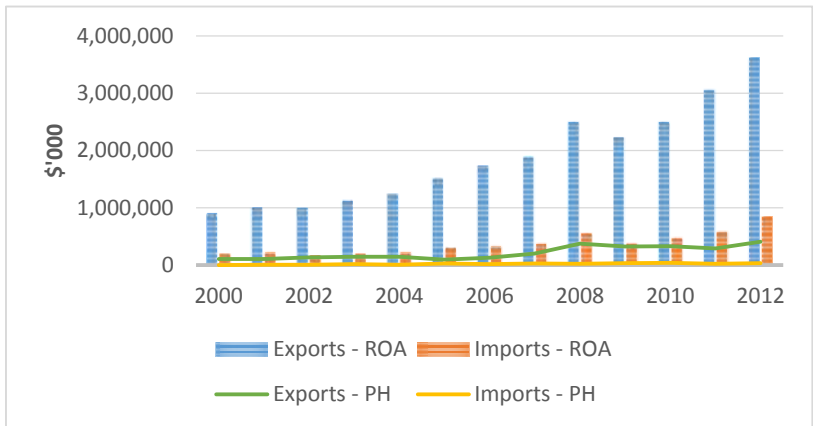
Tuna: Domestic Wholesale Prices, 2000-2012



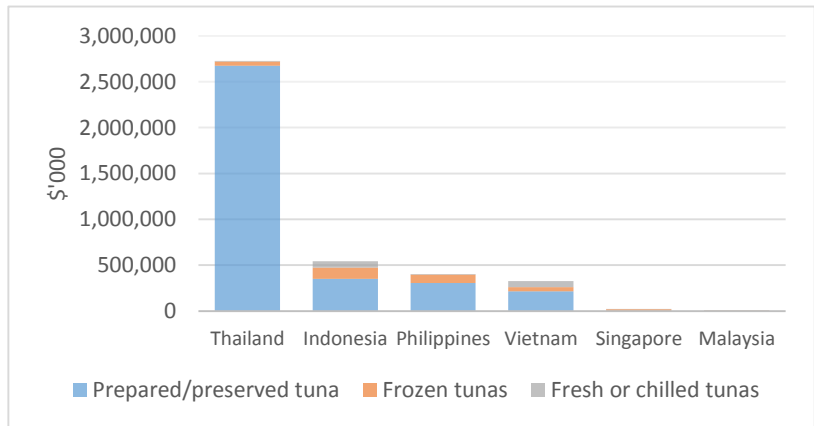
Tuna Products: Philippine Exports to World, by Partner Country, 2000-2012



Tuna Products: Philippine Exports to ASEAN, by Partner Country and Product Type, 2012



Tuna Products: ROA[†] and PH Imports and Exports to World, 2000-2012



Tuna Products: ASEAN Exports to World, by Reporting Country and Product Type, 2012

[†]Rest of ASEAN. Excludes Brunei, Laos and Myanmar due to insufficient data.

Corn

Corn or maize is one of the most important crops in the Philippines. About 14 million Filipinos consume white corn as their main staple while yellow corn accounts for about 50% of livestock mixed feeds. Corn is also processed into a range of high value products, such as starch, corn syrup, corn oil, gluten, snack foods, and ethanol for use as a fuel. More than 600,000 farm households depend on the crop as a major source of livelihood. In addition, thousands of traders, processors, agricultural input suppliers, and transport service providers directly benefit from the production, processing, marketing, and distribution of the crop. (DA, 2012)

Corn is a major source of food for both humans and animals, and is grown in more countries than any other crop. Even so, only a limited number of countries actually produce enough to be self-sufficient and to export. There are two major varieties: white maize and yellow maize. White maize is grown for food while yellow maize is mainly used for animal feed. (UNCTAD, 2012)

The domestic maize industry has on the whole been expanding, although with episodes of contraction due to unfavorable weather. The growth in overall production is mostly due to the yellow variety. However, despite the increase in supply, farmgate price of yellow corn has been rising dramatically in the past decade. The movement has not been as extreme for mature white corn, but prices are also elevated, being 14% higher in 2012 than in 2009.

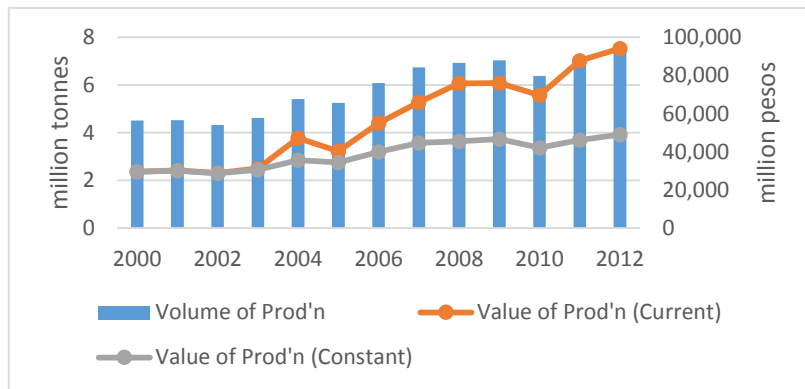
The Philippines imports most of its corn [HS 1005] from Thailand and South Africa, though imports have been very erratic over the past decade. Since there is a high level of self-sufficiency, this suggests that imports take up the residual when domestic production is not enough to meet local demand (Briones, Estimates of Domestic Resource Cost in Philippine Agriculture, 2014). Note that as a result of expansion of cultivation areas, the country currently enjoys a production surplus in corn.

One of the Philippines' goals for the local corn industry is to improve quality and efficiency to the point of making it globally competitive, thus opening up the industry for export. An added benefit will be helping the domestic livestock sectors by lowering feed costs and generating jobs in rural communities. The DA's strategy towards trade liberalization includes improving crop quality through the use of high-yielding and pest-resistant seeds, as well as investing in modern machinery and post-harvest facilities to boost production.

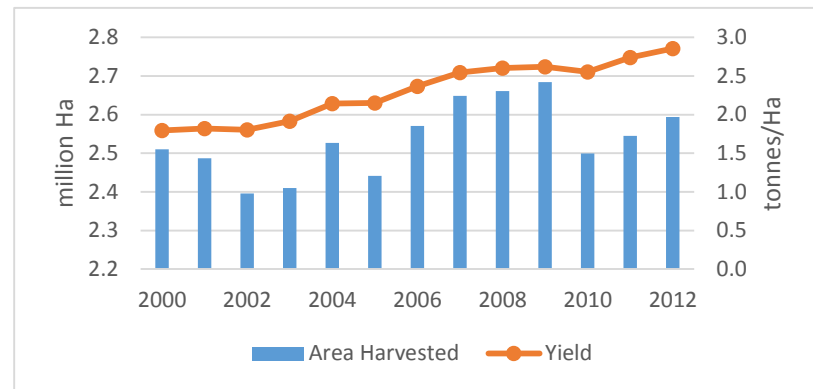
One of the country's advantages is its ability to produce corn all year round. Thus, the Philippines should be able to keep pace with the increasing demand for corn from the domestic livestock industry, as well as take advantage of new markets due to the AEC. Presently, local corn production is sufficient to meet the consumption of swine and poultry growers, but there is hope that the Philippines will be able to trade the crop internationally by 2015. Steps made in support of this objective include expanding corn cultivation areas and adjusting agricultural policies to align with the policies of AFTA.

Thus far, the Philippines is still a way off from its trade expansion goal for corn. To date, the country's only export is corn silage to South Korea—it is missing out on other potential export partners like nearby Malaysia, which still imports most of its corn from Argentina and Brazil. One of the key roadblocks is the government's reluctance to allow local growers to export their produce, in the interest of stabilizing the country's local supply. This, however, is expected to change as domestic production further increases.

Figure 7. Key Industrial Statistics: Philippine Corn Industry



Corn: Volume and Value of Production, Philippines, 2000-2012



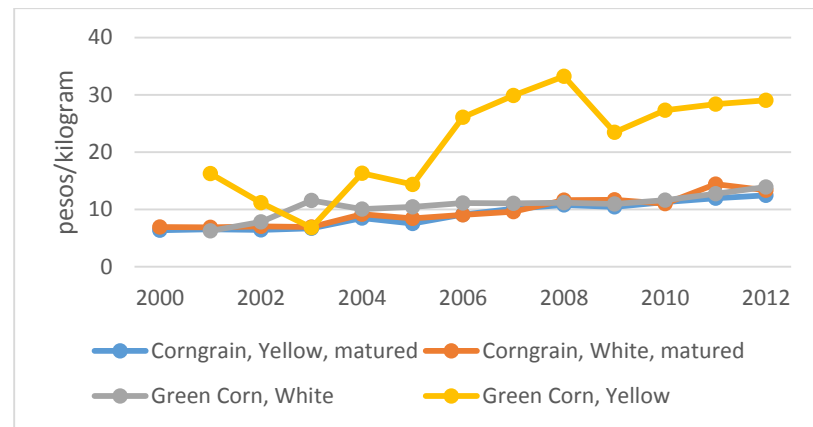
Corn: Area Harvested and Yield, Philippines, 2000-2012

Major Producers (volume of production), 2012:

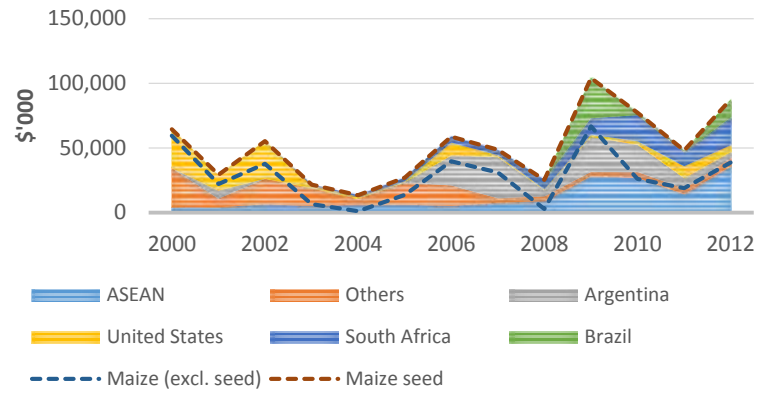
- Isabela (16.3%)
- Bukidnon (11.4%)
- Maguindanao (6.7%)
- South Cotabato (5.9%)
- Cagayan (5.8%)

Major Locations (area harvested), 2012:

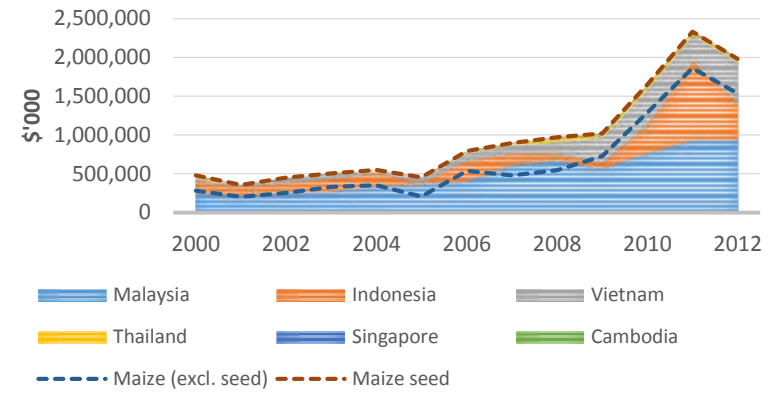
- Isabela (10.4%)
- Bukidnon (7.4%)
- Maguindanao (7.0%)
- South Cotabato (5.6%)
- North Cotabato (5.0%)



Corn: Domestic Farmgate Prices, 2000-2012



Corn [HS 1005]: Philippine Value of Imports from World, by Partner Country, 2000-2012



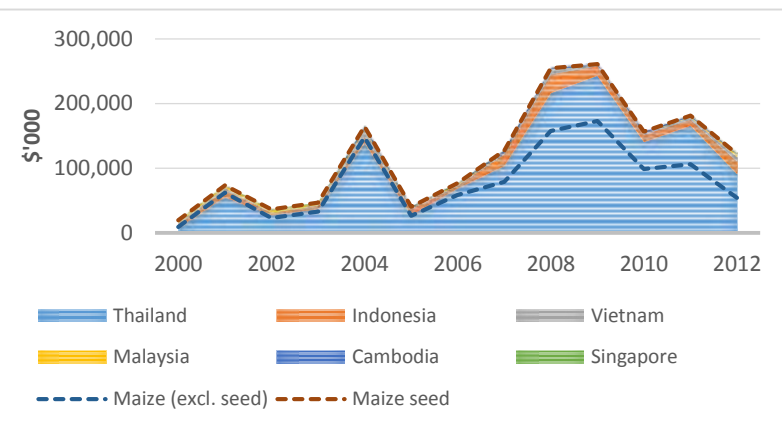
Corn [HS 1005]: ROA⁺ Value of Imports from World, by Reporting Country, 2000-2012

Top Importers, 2012:

- a) Japan: \$5,127 million (13.4%)
- b) Mexico: \$2,997 million (7.8%)
- c) Korea: \$2,603 million (6.8%)
- d) Egypt: \$1,958 million (5.1%)
- e) Spain: \$1,807 million (4.7%)

Top Exporters, 2012:

- USA: \$9,708 million (27.3%)
- Brazil: \$5,383 million (15.2%)
- Argentina: \$4,841 million (13.6%)
- Ukraine: \$3,893 million (11.0%)
- France: \$2,398 million (6.8%)



Corn [HS 1005]: ROA⁺ Value of Exports to World, by Reporting Country, 2000-2012

[†]Rest of ASEAN. Excludes Brunei, Laos and Myanmar due to insufficient data.

Swine and Chicken

With the increase in worldwide demand for meat, fast-growing species with efficient feed conversion ratios, such as pigs and poultry, are expected to account for a major share in the growth in the livestock sector. ASEAN countries that have low labor costs have the potential to be competitive exporters of meat to world markets. However, a significant threat to the development of trade in livestock products is the existence of diseases in exporting countries. Major costs of production in intensive livestock production systems include feed, breeding stock, labor and capital. (Thorpe, Warr, & Andrews, 2007)

Production of swine and chicken in the Philippines has been growing steadily over time, consistent with rising domestic demand due to an increasing population, urbanization, and greater purchasing power. The price of both swine and chicken have also been increasing over the years, driven by strong demand as well as the rising cost of animal feed. In response to the rising consumption, the value of swine and chicken imports have also been increasing rapidly in the past decade.

Philippine exports of swine is small (\$5 million in 2012) and is mostly in prepared or preserved form. Chicken, on the other hand, is often traded in parts, which creates product variety and the possibility of intra-industry trade (Briones, Estimates of Domestic Resource Cost in Philippine Agriculture, 2014). While the country's exports of chicken (mostly cuts and offal) is not that large, it reached \$44 million in 2012—almost twice the value in 2009.

The global meat market has been experiencing a rapid expansion, with exports growing over 40% in less than a decade (Briones, Estimates of Domestic Resource Cost in Philippine Agriculture, 2014). According to the Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD, 2011), developing countries are expected to produce 60% of the world meat production by 2020—a significant increase compared to their 31% share in 1980. Animal production has been steadily increasing in ASEAN; however, for some countries this has also resulted in increased dependency on imports of feed ingredients, veterinary supplies, and genetic material.

The swine industry is one of the largest contributors to Philippines agriculture, second only to rice. The top producing province in 2012 was Bulacan (11.3%) followed by Batangas (6.1%). The preference of Filipino consumers for fresh or chilled pork over frozen pork gives the local industry an assured market for its products. However, the supply of low-priced beef, buffalo and poultry meat from other countries may create a shift in consumption from pork to these cheaper alternatives (PCAARRD, 2011). This may pose a challenge for the local swine industry but will encourage producers to modernize and reduce their costs in order to enhance global competitiveness.

While pig is the main type of meat produced in ASEAN, only small amounts are actually exported by ASEAN countries due to concerns regarding hygiene and animal diseases such as foot and mouth disease and classical swine fever (Thorpe, Warr, & Andrews, 2007). If the Philippines is able to overcome issues

related to hygiene and animal diseases, while strengthening overall cost competitiveness, there might be potential for exports to other countries.

Historically, backyard operations have dominated meat production in most ASEAN countries. However, the contribution of backyard operations to total meat production has been declining over time, while that of integrated commercial operations has been developing and expanding. For instance, pig and chicken meat production in Thailand and chicken production in Malaysia are now largely carried out by commercial operations (Thorpe, Warr, & Andrews, 2007). In the Philippines, the share of backyard pig meat production in total pig meat production fell from 77% in 2000 to 65% in 2012.

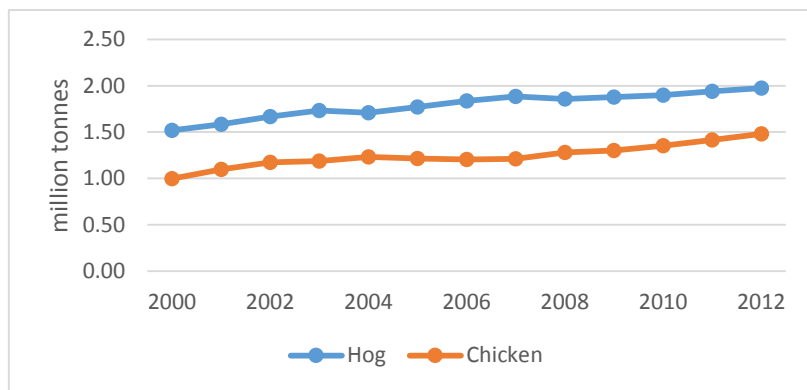
Integrated commercial operations provide a number of advantages, including the introduction of modern breeds and use of more advanced technologies and equipment in raising and slaughtering animals. Large integrated companies can also buy inputs (e.g., capital, storage, transport, marketing and distribution services) at more competitive prices compared to small operators. The expansion of commercial operations has the potential to improve productivity and sanitary standards so that meat producers are able to compete in export markets. (Thorpe, Warr, & Andrews, 2007)

Most countries in ASEAN are either small net importers or exporters of meat. Thailand, however, is an exception as it is a major exporter of chicken. Thailand's relatively low unit cost of production, high product quality, and ability to address sanitary problems have contributed to the rapid expansion of its chicken exports. Chicken meat in Thailand are produced mainly from large commercial operations that can meet international biosecurity standards more cost-effectively than backyard operations. In addition, chicken producers in the country have focused on more bio-secure processing procedures for exports, reducing the possibility of trade bans. (Thorpe, Warr, & Andrews, 2007)

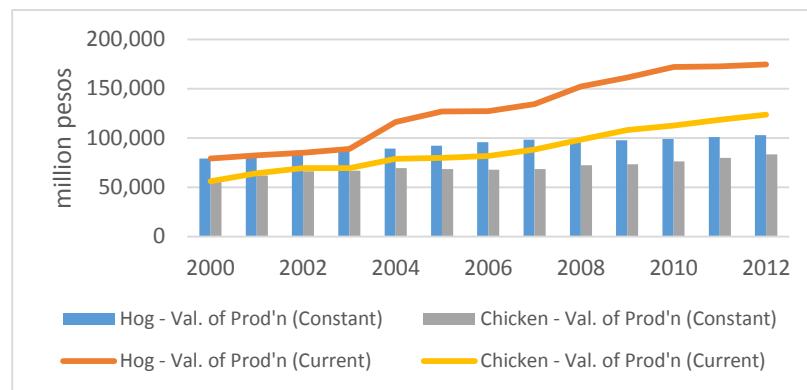
The development of feed, slaughter and processing technologies have increased safety and efficiency in the production of poultry. These developments, however, favor large-scale production and have led the poultry industry and the associated feed industry to scale up as well as position themselves close to input sources or final markets. According to FAO (2014), one aspect of the structural change has been a move towards contract farming in the rearing phase of production. This allows farmers with medium-sized flocks to gain access to advanced technology at lower cost.

Expenditures on feed account for a large share of the total cost of livestock production. In the Philippines, it represents roughly 60% of the cost to produce pig and chicken meat. The most common feed ingredients used in the country include yellow corn, rice bran, copra meal, fishmeal, and wheat; however, corn is considered the most critical as it represents about 50% of formulated animal feed rations. In the past, corn was considered as the bottleneck of both the feed milling and animal industries. However, with the implementation of an aggressive corn development program by the Philippine government, local production and supply of corn has stabilized. The quality and prices of domestic yellow corn have also improved (PCAARRD, 2011). If local livestock producers face lower feed prices, they may be able to become competitive in the international market.

Figure 8. Key Industrial Statistics: Philippine Hog and Chicken Industries



Hog and Chicken: Volume of Production, Philippines, 2000-2012



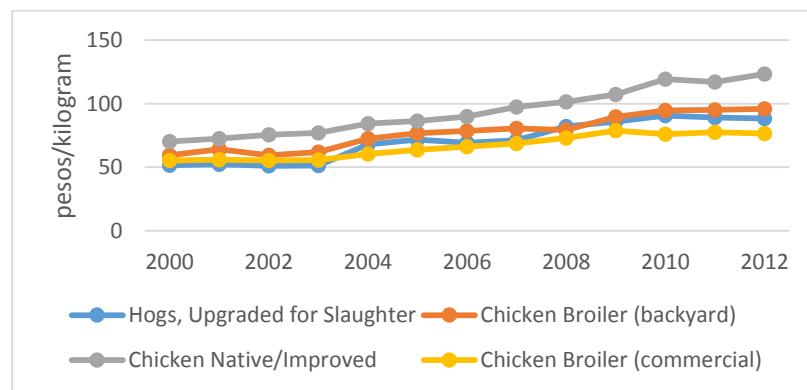
Hog and Chicken: Value of Production, Philippines, 2000-2012

Swine, Major Producers (volume of production), 2012:

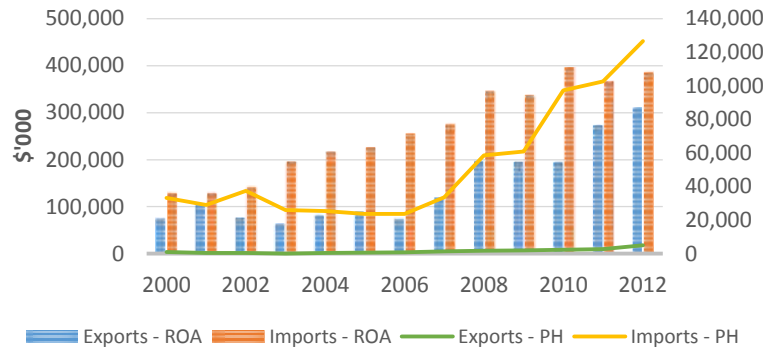
- a) Bulacan (11.3%)
- b) Batangas (6.1%)
- c) Cebu (4.1%)
- d) Iloilo (4.0%)
- e) Bukidnon (3.9%)

Chicken, Major Producers (volume of production), 2012:

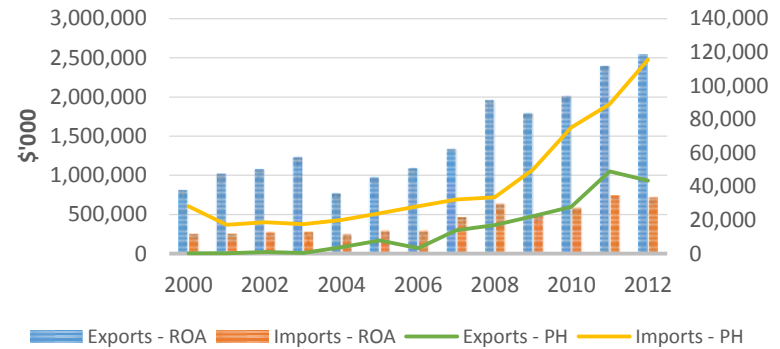
- a) Bulacan (8.7%)
- b) Pampanga (8.3%)
- c) Nueva Ecija (6.8%)
- d) Rizal (6.5%)
- e) Batangas (5.4%)



Hog and Chicken: Domestic Farmgate Prices, 2000-2012



Swine: ASEAN Imports and Exports to World, 2000-2012



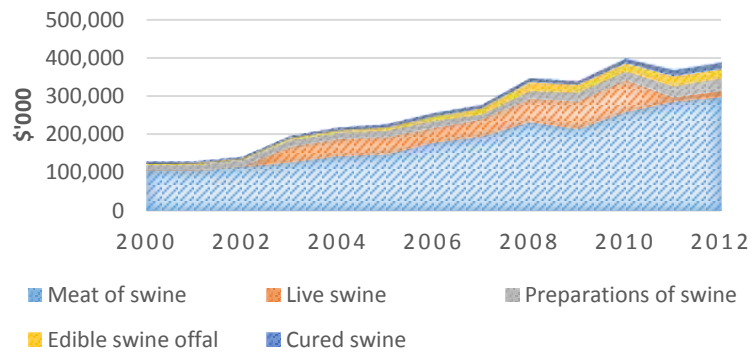
Chicken: ASEAN Imports and Exports to World, 2000-2012

Major Sources of Swine Imported by the Philippines, 2012:

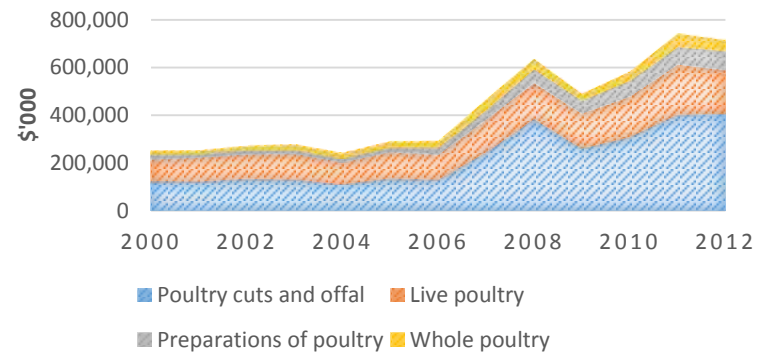
- United States: \$36.1 million (28.5%)
- Canada: \$27.7 million (21.9%)
- France: \$22.0 million (17.3%)
- Germany: \$9.3 million (7.4%)
- Spain: \$7.4 million (5.8%)

Major Sources of Chicken Imported by the Philippines, 2012:

- United States: \$58.1 million (50.2%)
- Canada: \$18.2 million (15.7%)
- Brazil: \$13.3 million (11.5%)
- Netherlands: \$9.8 million (8.5%)
- Australia: \$5.9 million (5.1%)



Swine: ROA[†] Imports from World, by Product Type, 2000-2012



Chicken: ROA[†] Imports from World, by Product Type, 2000-2012

[†]Rest of ASEAN. Excludes Brunei, Laos and Myanmar due to insufficient data.

A. Is the Philippine A&F Sector Ready for AEC?

Unlike other ASEAN countries, the Philippines' ranking in the World Economic Forum's (WEF) Global Competitiveness Index (GCI) has been consistently rising since 2010. From 85 (out of 144) in 2010, it jumped by a remarkable 33 places to 52 in 2014. While the country is still behind Singapore, Malaysia, Thailand, and Indonesia in terms of overall competitiveness, policies and reforms set in place by the current administration has allowed the Philippines to prepare for the AEC.

Details of the Philippines' performance on the various components of the GCI are in Annex 9. The country's advantages lie in its macroeconomic environment, market size, business sophistication, and financial market development. The Philippines' recent strong economic growth and macroeconomic fundamentals, for instance, has allowed it to secure investment grade credit ratings. More importantly, the country has expanded its fiscal space, which allows it to provide the infrastructure, public goods, and services, needed by the A&F sector to upgrade its competitiveness. It would be difficult for the country to compete without the fiscal resources needed to help make that happen.

The positive changes that have been observed on the Philippine economy are attributable to the banner reform on good governance of the current government. Good governance netted for the Philippine economy not only the fiscal resources that can be made available for improving its competitiveness, and for social protection programs benefiting the country's poor, but also added investments particularly by foreigners. In 2014, the country's foreign direct investments had exceeded US\$ 6 billion. A few years back the average FDI per year of the country was no higher than US\$ 2 billion.

While the Philippines ranks relatively well in efficiency enhancers and innovation and sophistication factors, it lags behind in basic requirements. Improving the provision and access to basic services is absolutely critical for the country to complete its transition from a factor- to an efficiency-driven economy.

Foreign direct investments are among the drivers of rising competitiveness of the economies of the country's neighbors. The levels of FDI inflows in these countries are at least double that of the country. The country lags behind particularly because of the relative high cost of doing business in the country and continuing restraints on foreign direct investments. There is a proposed Congressional resolution aimed at relaxing these regulations on foreign direct investments. The resolution amends the country's charter itself to enable Congress to open up selective industries for higher thresholds of foreign equity.

The most problematic issues for doing business in the Philippines have been identified to be corruption, inadequate supply of infrastructure, tax regulations and rates, and inefficient government bureaucracy (WEF, 2014). Starting a business was found to be particularly difficult, with the relatively high number of procedures and days needed to start a business. Trade costs such as due to red tape and inefficient customs procedures also dampen the competitiveness of both domestic and export industries. However, steps are currently being taken to address these issues. In 2013, President Aquino signed Administrative

Order No. 38, creating an inter-agency task force to implement reforms aimed to improve the ease of doing business in the country.

The government is also implementing major reforms in the Bureau of Customs to eliminate corruption and modernize procedures. A proposed law, the Customs and Tariff Modernization Act, is now deliberated in Congress, which if passed would amend the country's Tariff and Customs Code of the Philippines. The proposed law will align the country's customs laws, regulations, and business practices with international best practices as provided for in international agreements such as the Revised Kyoto Convention 1999 of the World Customs Organization, and the Trade Facilitation Agreement of the World Trade Organization.

Congress appears in the final stages of approving a law that ensures competition in the market place and provides the appropriate institution to implement realize the policy. By promoting competition, the law will reduce prices and increases the growth of small and medium enterprises. It is expected to attract investments in the economy by both resident and foreign enterprises.

The Philippines has some of the highest tax rates in ASEAN. To improve competitiveness, bills have been filed in the Senate and the House of Representatives to adjust individual income tax brackets and reduce individual income tax rates. Additionally, simplifying regulations and adjusting rates is expected to increase compliance and improve equity.

One of the major binding constraints to the Philippines' development is inadequate infrastructure, particularly in transportation. Hence, in 2014, the government approved an ambitious transport infrastructure development plan—developed with assistance from the Japan International Cooperation Agency (JICA)—for Metro Manila and its surrounding areas. Plans for Visayas and Mindanao are currently being developed and will be released within the next two years. The government by 2015 is set to allocate 5 to 6 percent of GDP for public infrastructure investments.

To enhance the competitiveness of the A&F industries for the AEC, the Department of Agriculture (DA) also developed a roadmap, although it is yet to be released to the general public. The DA reportedly plans to intensify investments on farm mechanization, irrigation, and financing, among other things. It is however the implementation of the industry roadmap that realizes the value of industry road mapping. The roadmap by itself, however good, will not make the sector competitive. Rather it is its effective implementation, which raises its value to the sector.

In the last section, the report discusses a more firm-based value chain mapping as opposed to industry road maps that reports on the strengths and weaknesses of industries in the A&F sector, and comes up with recommendations to build on the strengths and neutralizes the industry's weaknesses. There is a role of the public sector in such value chain road maps. Rural connectivity serving specific value chains; providing information about market opportunities; laboratories to give value chain participants better access to product standard certification services; facilitating the negotiation of enforceable and fair agreements among the participants; and other public services are among the public goods and services

that the government can deliver. A&F industry road maps are high level, which need to be complemented by value chain road maps that organize the participants producing and transporting competitive products to markets.

Limited government support has often been blamed for the underdevelopment of the A&F sector. However, data from FAO shows that, as a percentage of total outlay, the Philippines' government expenditure in agriculture, forestry, and fishing is actually highest among ASEAN countries (Table 1). The value of expenditure, meanwhile, is second only to Thailand. The surge, however, of spending in Thailand in 2010 and 2012, maybe linked to its implementation of the government's palay pledging program, which turned out to be disastrous to the rice sector of Thailand. The program, instead of raising the competitiveness of the rice industry of Thailand, reduced by half its rice exports.

Misdirection of funds, faulty design of programs, and resource leakages during implementation appear to be the main reasons for the sector's stagnant growth. A disproportionate share of the agricultural budget is directed to support a few crops, particularly rice, at the expense of the development of other commodities. The current administration is attempting to remedy these past mistakes by increasing support via the provision of public goods. It has, for instance, increased investments in farm-to-market roads, ports, and irrigation.

Table 27. Government Expenditure in Agriculture, Forestry, and Fishing

| | Percent of Total Outlay | | | | | | Value in US\$ Million | | | | | |
|-------------|-------------------------|------|------|------|------|------|-----------------------|-------|-------|-------|-------|-------|
| | 2001 | 2005 | 2010 | 2011 | 2012 | 2013 | 2001 | 2005 | 2010 | 2011 | 2012 | 2013 |
| Indonesia | | | | | | 1.0 | | | | | | 1,651 |
| Malaysia | 2.9 | 3.4 | 3.2 | 2.6 | 2.5 | 3.0 | 726 | 1,129 | 1,984 | 1,934 | 2,038 | 2,418 |
| Philippines | 4.4 | 4.2 | 5.9 | 3.6 | 4.8 | 5.5 | 608 | 722 | 1,912 | 1,293 | 2,088 | 2,618 |
| Singapore | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | | 31 | 39 | 88 | 67 | 66 | |
| Thailand | 7.4 | 5.2 | 5.6 | 2.0 | 4.6 | | 1,543 | 1,673 | 3,639 | 1,464 | 3,619 | |
| Viet Nam | | | | | | | | 239* | 111 | 109 | 89 | |

*Value is for 2006.

Note: Includes budgetary central government expenditures only.

Source: (FAO, 2015)

In December 2014, the DA launched the Philippine Rural Development Project (PRDP), a 6-year program aimed to increase rural incomes and improve productivity. It is largely financed through a loan from the World Bank along with counterpart funding from the national government and LGUs. The Global Environment Facility (GEF) also provided a US\$ 7 million grant, which will be used to strengthen the conservation and protection of selected coastal and marine protected areas.

The PRPD is currently one of the World Bank's biggest project in the Philippines and one of their biggest agricultural and rural development projects in the world. It will help identify and deliver key interventions along value chains to address constraints faced by farmers and fishers. Approximately two-thirds of the US\$ 670 million fund will be used for infrastructure and logistics development. This

includes farm-to-market roads, bridges, potable water supply, communal irrigation systems, as well as other infrastructures that will enhance productivity and add value to A&F products (e.g., production facilities, post-harvest facilities, marketing facilities, fish landings, fish sanctuaries, tram lines, green houses, solar driers, watch towers, storage facilities, and trading posts).

The PRPD uses a geo-tagging tool to monitor the progress of all of its subprojects in the country. The tool facilitates supervision as well as deters corruption and fraud during implementation. Aside from infrastructure development, the other major components are enterprise development, local planning, and implementation support. The PRDP will provide financial, technical and marketing assistance to farmers and fishers. Producers will be encouraged to increase diversity, add value, and improve the quality of their products.

That part of the AEC that impacts the sector most is the ASEAN Trade in Goods Agreement (ATIGA). ATIGA liberalizes and facilitates merchandise trade. It brought down the tariff and non-tariff barriers to imports of agricultural and fishery products. One fact about ATIGA is that it had been implemented since the 1990s under the ASEAN Free Trade Area (AFTA) agreement. AFTA got coded into ATIGA and the implementation of it was completed by 2010 except for sugar and rice. The tariff on sugar is now down to 5 % this year, and that of rice depends upon what happens to the rice waiver that the Philippines has secured with the WTO until 2017. But most of the import tariffs under the AEC are already no more than 5%.

The sector has competed with imported goods coming from the rest of ASEAN. Although there are problems on possible trade deflection such as the allegation by the corn producers that Vietnamese exports of corn to the Philippines do not meet the rules of origin under ATIGA, problem like these happen regardless of the state of readiness of a contracting party to implement the agreement. The fact that the country has a system to monitor such problems and to get these resolved is evidence of its readiness. It knows what to do if problems like these happen.

Adjustments to the A&F sector are expected. The prices of agricultural and fisheries products go down as import protection of the A&F sector is significantly reduced. Small producers maybe having or will have more difficulty staying in business with lower prices. Some of them may exit the industry and get into other lines of business or gainful employment. Others may innovate in order to reduce their production costs to the new normal of lower agricultural product prices. Innovation may include organizing small producers to contract with downstream investors whereby they produce the primary product that are processed by the latter.

When Charoen Pokphand, a Thai company, invested in broiler production in the Philippines about two years back, the backyard producers have been concerned. Even integrators, which have all the reasons not to be concerned of the entry of CP in the industry, have been sympathetic to the concern of the backyard producers. Although the issue raised was the granting of fiscal incentives to CP, it boils down to the fact that incentives had actually facilitated the competition that CP brings into the country's broiler industry. A few had articulated that CP's grand plan is to destroy the industry and become a

monopoly in the chicken business. Chicken prices may decline first to get rid of existing producers and may go up once CP is the dominant market player. Even if this unlikely event may happen, competition policy that is now in its final stages of becoming a law is the country's tool to frustrate possible anti-competition practices of CP or any other dominant player.

To the concern that CP's entry wipes out small producers, there is good observation from current integrators and CP's business practices in other countries that that is unlikely to happen. CP like the country's integrators in the industry has to contract with small producers who own the land and have the labor to grow broilers. It happened several years ago when the industry started to have large fully integrated companies. The integrators have outsourced the growing of chickens. This is the state of the art in organizing the broiler industry. CP does this in other countries where it has invested in growing chicken.

The adjustment to the industry may be that the backyard producers, rather than continuing to be small fully integrated businesses, which grow and market the broilers they produce, may contract the growing of the broilers of CP and other integrators that may invest in the industry. It is not mutually exclusive that some of them may scale back their current business but continue to run them, and add a new line of business by contracting with integrators to raise chickens. For as long as they are gainfully employed, these adjustments are welcome because they raise the competitiveness of the country's broiler industry.

This is the whole idea of getting the entire ASEAN region to be a single market in goods and services: make the region's industries become more competitive. If the country stays out of AEC, it would be left behind. Its producers would not learn how to become more competitive since protection will provide them the disincentive to work harder and become more efficient. As observers have noted when the country joined the WTO, the onus to make the sector more competitive falls on government, as if all that is required to become competitive is having more budget. Fiscal resources are important, but the producers would have to contribute as well. But when prices are kept high by import restrictions, the compelling factor to innovate is absent.

Import competition has the added benefit of inducing better performance from the government. It is widely recognized that government failure to provide the public goods and services to make the sector more competitive is key to why some stakeholders view that the sector has not benefited from the country's participation in the WTO agriculture agreement or that the country is not ready for AEC. If prices are set high which makes the marginal producers viable, there is no induced problem that puts pressure on the government to deliver. Lackluster performance of the government reflects the view that with protection the A&F producers survive.

Once prices start to fall because of significant reduction in import protection of the A&F sector, the problem is generated. Marginal farmers and fishery producers will be dislocated from their respective businesses as prices go down lower than their production costs. These are the stakeholders who would put effective pressure on the government to deliver, as their sources of livelihood are adversely affected

by the import competition. Why create crises to get better performance in the public sector? Can the government not deliver even as producers temporarily enjoy protection? That has been done following the infant industry argument for import protection. The proposition that infant industries in developing countries need to be protected until they become competitive has been followed since the 1960s. Ironically, the infants had never graduated themselves out of protection.

The rice industry is a good example of this. When the country joined the WTO in 1995, the government asked the WTO for a 10-year special treatment, which allowed it to maintain its quantitative import restriction on rice because the rice farmers were not ready yet for import competition. After ten years, the government sought an extension of the QR for the same reason. The WTO gave the country until 2012. When the extension expired, the government asked for a waiver from its obligation under the WTO agreement on agriculture to tariffy the rice QR, the reason being is that the rice farmers are still not ready for competition. The WTO allowed the waiver but only until 2017.

The approach to temporarily protect the A&F sector first while the government puts in place the measures that would make the sector competitive is not working. The alternative approach is monitored implementation of import liberalization, allowing prices to gradually fall to trigger the political forces in the country to demand better services from the government. When there are surges in imports threatening the industry's demise, then the government can temporarily use safeguards. When imports are dumped or subsidized, the government can slap anti-dumping or countervailing duties to level the playing field. In a way, this approach takes after the process of vaccinating animals to make them more immune to diseases. Import competition, the effects of which is closely monitored, is required in order to make the A&F sector become stronger and more competitive.

VIII. Readiness Enhancement Measures

Regional integration creates market opportunities for the country's producers, processors, and exporters of agricultural and fisheries products. It is also true that it displaces local industries that may not be competitive enough with imports without the requisite trade protection. The key to maximizing the benefits of regional integration is to stop quickly the displacement, and get the resources previously in import competing industries to become export-oriented, and the resources now in export-oriented industries made more effective in realizing larger and more diverse market opportunities.

A. Value-chain roadmaps

The message has long been communicated to farmers: farming has to be linked to markets. This has not worked well in the past, and it will even more likely fail in making small farmers take advantage of AEC. The AEC and other preferential trade agreements the country is involved with, e.g., the five ASEAN+1 trade agreements and Philippine-Japan Economic Partnership agreements, create even larger and more diverse market opportunities. They require better forms of organizing local production and processing activities in the country to reach the production scale, promptness, and high product standards required by regional markets.

The message of demand-driven farming fell through in the past because of poor organization of value chains. There is the chicken-egg problem: lack of coordination among related businesses in a value-chain. Investments are forgone due to infeasibility of the downstream business without adequate supply of primary farm products, which in turn are not grown or scaled up for lack of information about demands in downstream markets. The export opportunities of local products created by AEC integration will continue to unfold. High degree of preparedness of agro-based value chains is necessary to translate these opportunities into new sources of incomes for the country's agricultural and fisheries producers.

Business firms have used technology road maps in order to match short and long term goals with specific technologies to attain them. Such goals may include overcoming the challenges they face or realizing new business opportunities such as higher sales and profits. Garcia and Bray (2006) describe this as a product technology road maps, distinct from two other road maps which are the emerging technology and the issue-oriented road maps. The authors identify three phases of technology road mapping, namely preliminary activities, the development of the roadmap and the follow-up activities phase.

Value-chain or industry road maps relate market opportunities and local capacity to realize them. A major assumption of an industry road map is that no single firm is big enough to integrate the entire value added chain needed to deliver the processed farm products that are demanded in export markets. The required investment tends to be very large and risky. Thus, the coordinated effort of several small

and medium size firms to collectively decide that they would simultaneously make their respective investments along the value-chain is needed.

Market opportunities of farm products vary in complexity. There are agricultural commodities that have simpler value chain road maps, since they involve relatively low value adding. Rice for example is a food commodity. Varieties may differ, but the market demand is such that the commodity is seen to provide the basic nutrients needed for basic survival. There may be industrial uses of rice, e.g. one that requires a particular variety and standard of milling, but presently current rice trade is heavy in the former. For this market opportunity, the value chain comprises the following tasks, including provision of inputs to growing rice, production of rice paddy, harvesting and post-harvest activities, milling, storing and transporting the commodity to their markets. Different varieties of rice may go into one particular shipment, provided the shipment comprises similarly processed rice, e.g. 5 % broken white rice, parboiled rice, brown rice, etc.).

Other market opportunities are on agricultural produce, e.g. fruits, highly perishable items, that require additional product standards and technical processing in order to preserve particular attributes of it demanded by the market. For these, value chains get to be more complicated. To name a few, the use of particular inputs, seeds or livestock varieties, observance of required agricultural or husbandry practices to ensure the product to be harvested meets the market requirement (e.g. organic products), proper timing of harvest and post-harvest handling, particular storage temperature, and related technical procedures needed by the market. The lack of or incomplete observance of the required steps eventually shows up in products that the market will reject causing financial losses to all the firms and farmers involve in the supply chain.

Following Garcia and Bray (2006), the road mapping entails three phases, namely the preliminary activity, development phase and monitoring and follow up activities.

1. Preliminary Phase

The value chain road mapping requires that relevant stakeholders, particularly farmers, fisherfolk, and business firms, which are needed to participate in the value chain to complete and make it work, realize the importance in getting the value chain organized to realize market opportunities. The value chain is an alliance of business firms. The sponsor has to sell the idea of organizing the value added chain to other firms, upstream and downstream. Another other way of organizing production and processing is full integration. Unfortunately, this requires a lot of investments and is extremely risky, and thus the market opportunities may not be realizable.

The following are the essential qualities of a road mapping activity to succeed:

- It is needs- rather than solution-driven.
- It is properly delineated in scope, planning horizon and boundaries given a realistic assessment of the constraints faced by the participants but responsive to the market requirements.

- It is participatory. The list of participants in the road mapping activity is comprehensive enough as to represent the various businesses needed by the industry (upstream and downstream) and support groups (e.g. academe, civil society organizations working with small and medium agri-based firms, etc.)
- Its development is led by a leader/sponsor of the activity.

In this preliminary phase of the development of the industry road map, the chicken-egg situation arises. Studies need to be made in order to anticipate market opportunities and make the information available to farmers and small and medium enterprises to gain more from regional integration. The sponsor/leader may need to undertake the studies needed to establish the existence of the market opportunity and make the case that the businesses that participate in the value chain are reasonably rewarded. Without the initial evidence, the sponsor may find it difficult to attract participants in the value-chain mapping activity.

In the technology road map literature, the focus is a business firm's decision whether to adopt a given technology or not in order to improve its operational efficiency and thus profitability. As assumed above, value-chain road mapping has to involve several businesses to realizing the market opportunity presented by sponsor of the chain. On its own, the sponsor may narrowly define its objective, the result of which the country forgoes a larger value added. Using a non-agricultural industry to illustrate the point, a producer of flat-based steel used in producing cans, roofing material, opted to do a road map of its own business importing its own raw material. The country concerned is rich in iron ore and other metals that go into producing the intermediate product needed in turn to produce flat steel. Understandably the sponsor is aware it would be a much larger investment in time and resources to develop a larger value chain that stretches all the way to mining the minerals.

This case illustrates the importance of delineating the scope, boundaries, and planning horizons of the road map. There may be no problem about it except that the upstream industry mining knowing there are no downstream businesses decided to just export the mineral ore. The opportunity lies to link the two chains in order to develop a larger value chain, and generate more jobs. But clearly the sponsor, producer of the flat-based steel, is no longer interested as much as in developing its chain that imports its intermediate product and processing the import to produce its output.

Which stakeholder now has the wider span of public interest that ought to invest resources in order to develop the business case for a value chain? Which stakeholder now has the credibility to coordinate the resources and time of many businesses needed for such a chain to develop? These must be the trade and investment promoting agencies of the government, creating the required public goods to bring transaction costs down.

Initially for this preliminary stage to occur, the sponsor may draft an initial road map. This road map may answer the following questions:

- What are the market opportunities created by trade agreements for the country's primary or agri-based products?
- What are the essential conditions, e.g. standards, technical regulations, volume, delivery schedules, set in export markets of these products?
- What are the production, harvest, post-harvest, storage, and transport technologies and practices that meet the market requirements?
- What are the current constraints faced by the developing country including its small and medium enterprises in meeting the requirements?
- What businesses must participate in the value chain?
- What are the respective requirements of these businesses to become financially viable?
- What are the internal rules governing the participants of the value chain in order to meet the requirements of the market?
- What are the policies, regulations, and public goods that must be reformed and produced in order to reduce transaction costs within the value chain and facilitate the resolution of disputes among its participants?

The participants in the value chain may take up the issues faced by its members and come up with effective solutions of these problems. For example, price volatility is an issue, especially in the seaweed industry. Developing a mechanism to reduce this volatility needs to be worked out, as excessive price volatility is seen to force producers incur huge costs, reducing their incentive to stay in the market. The solution to the problem may be internalized by the participants, especially the sponsor, of the chain. Commodity futures are not feasible at the national level due to thin transaction volumes. Short of organized trading in seaweed futures, forward transactions complemented by financial options to secure a target price can mitigate volatility of export revenues.

Access to credit is an enduring concern of farmers and SMEs. The difficulty in securing credit is caused by the pawnshop mentality of banks and financial institutions. They require a collateral, which in agriculture would be the land. If the investment turns out bad, then the bank seizes the pawned land. In addition, process that these businesses go through in their effort to borrow money from banks or other financial institutions can be tedious. Banks may also shy away from such lending because of high transaction costs in processing the loan. Fishing enterprises are required to show proofs that they are firmly established in their business, which will be difficult if the fishing enterprise is just starting, or want to expand on food processing.

Improving the effectiveness of cooperatives is a step to improving readiness, one that includes basic sectors in the overall regional effort of economic integration. The country's cooperatives are viewed to be ineffective and unsuccessful in uplifting the wellbeing of its members. Thus, there is the need to improve the quality of the country's cooperatives in the agriculture and fisheries industries, which is among the AEC blueprint reforms. Regarding cooperatives, one suggestion is to fix the manner by which cooperatives are perceived. A cooperative is supposed to be a self-help organization, where every member should contribute for enhancing their organization. However, a few of its members, particularly the officers, may see their organizations as a source of windfall income. Cooperatives also

see the government in the same way: as an income generating asset. In addition, the requirements set by the Cooperatives Development Authority are seen as too impractical. Benefits from cooperatives may be that processing industries may benefit in terms of consolidating deliveries, and thus reducing logistics costs.

To be more competitive, quality of the country's agricultural products should be improved. First, this can be done by the application of good production practices, like GAP, GMP or the good aquacultural practices (GAqP). The AEC Blueprint already specifies provisions on such good practices. A concern seen in the requirement of these good practices is that they usually contain very general guidelines. In reality, each commodity requires very specific requirements. Second, regarding the corresponding harmonization of quality and safety requirements and the requirement of good practices, skills have to be upgraded. So improving the quality of our products really necessitates further investment in human capital stock development. Third, quality control should also be improved. Related to this is traceability. One should be able to trace where the materials and products come from, and check the manner by which these are produced. The AEC Blueprint provisions on RoO and Hazard Analysis Critical Control Points (HACCP) become relevant.

A challenge involves the farmers themselves, who tend to continue using their traditional way of farming and ignore good production practices they may learn from public extension programs. One normally expects resistance to change such as farming practices. The question then is how receptive are the country's farmers to adopting the good practices in agriculture and fisheries, if such practices are required by markets. It should be possible to introduce incentives such as price premium on farm products that were produced using the desired farming practices.

Presently, there appears to be a double standard: low standards imposed on local products as their producers see as laborious the task to comply with the quality and safety requirements, stricter standards on imported ones. The lack of application of product standards of locally produced agricultural products may be due to the fact that there is low risk of introducing new diseases or pests compared to imported products. Local produce could not introduce new diseases, but imported ones could. There is then an uneven implementation of the relevant standards due to differences in risk assessments. But there are situations that standards need to be applied on local products. If certain regions are free of diseases found in the rest of the country, a free movement of products can possibly spread the disease in the rest of the country. The foot and mouth disease is endemic in Luzon but not in Mindanao, which calls for restrictions in the movement of meats and live animals within the country.

There are other agricultural and fisheries products that the risk is equally the same. Meats or fresh fish are susceptible to bacteria or other micro-organisms if exposed for a long period of time to room temperature. Standards have to be applied equally to both. Exporting countries, whose products the Philippines imposes high standards, question inconsistent implementation of product quality standards. It has been pointed out that the issue may not be one of applying low standards. The country may have internationally consistent standards, and is working with its ASEAN neighbors in harmonizing product standards. The uneven implementation of standards, which trading partners observe, may be due to

poor implementation by the concerned regulatory agencies. This is hardly intentional. But it could be mitigated with changes in how some products of agriculture and fisheries industries are retailed. Meat standards may be difficult to enforce in the country's wet markets that sell local fresh meats, but are relatively easy to apply in the case of imported ones, which institutional buyers import, those that have cold chain facilities. In due time, practices may change on the part of local consumers, who may buy more from meat shops or supermarkets.

A public program that encourages product diversification in agriculture and fisheries can maximize the benefit the country gets from integration. For instance, coconut can be processed to produce coconut sugar, virgin coconut oil, or other coconut-based products. A longer value chain is needed to realize diversification in coconuts, but it delivers more benefits. A longer value chain will likely deliver a larger value-added from agriculture and fisheries, more jobs and income opportunities in on- and off-farm activities. Fisheries tend to have short value chains, and thus less value added. Studies need to be done to explore new products for exports based on the fisheries output that the country is relatively abundant with.

Regarding product diversification, some issues are deemed relevant. First, diversification should be based on comparative advantage. For example, Vietnam diversified to producing noodles and bread made of rice, a commodity that they produce in large volumes, instead of wheat. There are instances when public policies are set that inadvertently encumber the country's comparative advantage. A good example is sugar industry. Economic policies were developed to complement sugar production at the expense of other industries which the country can potentially develop. Another example is that efforts are not enough to export shallot (sibuyas tagalog), which is highly demanded in Indonesia, Malaysia, and the Middle East.

The country needs to preserve its genetic base. The environmental costs of economic activity need to be considered. In fisheries, dynamite fishing is prevalent, which undermines the country's genetic base by destroying coral reefs. There is also overfishing of the country's municipal waters. Small-scale fishermen are associated with overfishing. They use mosquito nets in fishing, which end up catching the fingerlings.

There are two outputs that the initial draft road mapping activity will produce. One is the road map itself. The other is the set of investment opportunity assessments, which must be shown to potential participants in the road-mapping activity and eventually in the value chain itself. Such assessments are pre-feasibility studies, assessments needed to initially attract the attention of small and medium enterprises.

The comprehensive agrarian reform program (CARP) was seen by those interviewed in this rapid appraisal more as a constraint to competitiveness than otherwise by those interviewed. Implementing CARP tends to reduce the country's chance of gaining economies of scale, as farmers will tend to own only a few hectares. Sugarcane, palm oil, plantation crops such as in bananas, pineapples, are few crops where scale economies are needed. However, economies of scale are achievable by an appropriate

organization of farmers owning separately contiguous small farm plots, which if consolidated together and the entire area run as a corporate farm, the organization costs and those needed to maintain the alliance comprise a serious deterrent to investors.

A bigger problem is economic opportunism, the tendency of stakeholders to pursue self-interest at the expense of other parties in an agreement. The farmers are susceptible to opportunism as well, and this may come in the form of extra-contractual sales, also known as pole-vaulting in the country. If hired to do farm work, there is the tendency to shirk knowing that the employer or principal could not effectively monitor the extent and quality of the work effort. When farmers are extended production loans to purchase inputs or prepare the farm for planting, they tend to use the money for personal expenses, like fiestas and house construction. This diversion reduces their capacity to pay back the loan they made. It is useful if a mechanism is adopted that will mitigate opportunism. The mechanism may involve a persistent mentoring of farmers the longer term benefit of keeping to their obligations in an agreement. The true non-governmental organizations can play this role.

The above are some of the issues that the value chain participants led by the sponsor can take up and together they find a solution to the identified constraints, problems, and weaknesses.

2. Development Phase

The complexity in coming up with value chain road maps and attracting stakeholders to devote their time and resources in developing them led to the suggestion that a draft initial road map may be developed. This phase of the road mapping validates the assumptions, analyses, and findings of the draft road map. The result of this phase is an industry road map, which has benefited from the inputs of the stakeholders. This phase entails series of meetings conducted to validate the initial road map.

Validating the product. The agri-based export, the product of the value chain, is described in the final road map in terms of the following characteristics: product standards, technical processing, applicable non-tariff measures, timing and volume of deliveries, market destination, applicable non-tariff and tariff barriers in origin and destination markets, length of export contracts (if any, and if none feasibility in coming up with mid-term contracts), key competitors, possible product differentiation which may provide added attraction of the product, and other product specifications which must be met. If the initial road map is done correctly benefitting from the advice of experts, this is likely to be a trivial step. However, other participants in the road mapping may include representatives of the market who are better prepared to provide information regarding product specification.

Scoping the value chain. The determination of the expected profitability of the export activity depends upon how the value chain is designed. The value chain may be large as to involve several business firms doing various tasks within the chain. On one hand, a large value chain will have larger benefits to the rural economy. On the other hand, it may become more challenging to organize and more importantly to keep together the business relationship. The decisions on the scope, boundaries, and planning

horizons are validated in this phase. These depend upon the assessment of the readiness of the various segments making up the industry. Taking up a large chain entails higher coordination cost and risk. Alternatively, the design of the large value chain may be done by phase.

Selecting the technologies. What are the technologies needed to meet the requirements of the market of the exported product? And among these, which has relatively the lowest cost to apply, given the validated information on the current constraints faced by the participants of the chain? These cover as well those that produce, handle and transport any intermediate products from one segment of the chain to the other. Product technology check lists may have to be developed in order to ensure that the respective technologies are applied correctly and uniformly. For example, the Philippine Rice Research Institute developed and distributed a palay checklist in order to facilitate the uniform application of the high yielding varieties of rice by hundreds of thousands of small rice farmers.

Product metrics. For the selected products and intermediate inputs, metrics would have to be developed by product characteristics. The metrics may be developed in ranges acceptable by the market. These metrics can also be used at any point in the chain whether or not the intermediate good can be accepted or rejected by a downstream processor. Differences among value chain participants have to do with their respective interpretations as to what an acceptable intermediate input is.

Rules-based trading. The validation of the initial draft road map may cover as well the formulation of rules that govern the economic transaction and relationship between parties of the value chain. A rules-based trading is needed in order to reduce uncertainty and encourage investments. The government is a party to these agreements in so far as it may be expected to carry out the policy reforms and implement spending to produce shared facilities and other public goods. One important rule that the development phase needs to come up with is the quick resolution of disputes. Economic friction, and with it transaction cost, increases with the absence of rules on behavior of participants in the chain. The profitability of the various businesses that are part of this chain is essentially revenues less production costs less transaction costs.

Documenting the agreements. The various agreements arrived in these meetings are documented, making up the rules of behavior of any business wishing to be part of the value chain.

3. Follow-up

With the value chain road map developed, the sponsor/leader (or it may be the investment promoting agency) promotes the investments needed to make the value chain a reality. In a small chain, the private sponsor may be adequate to pool the few investors needed to make the chain a reality. However in a larger chain, the government investment promoting agency may have to take the lead in coordinating and causing simultaneous investments in the supply chain. The sponsor/leader may have to come up with an implementation plan based on the commitments of the participants, and to see to it that the implementation plan will not cause delays in investments in other parts of the chain.

Simultaneous coordinated investments are required in order to break the chicken-egg dilemma, which disables developing countries to take advantage of market opportunities.

The implementation plan will have to be monitored and unforeseen problems that emerge analyzed and solved in order to keep the alliance.

Bibliography

- Aldaba, R. M., Briones, R. M., Israel, D. C., Llanto, G. M., Medalla, E. M., & Milo, M. S. (2013). *The ASEAN Economic Community and the Philippines: Implementation, Outcomes, Impacts, and Ways Forward*. Makati: Philippine Institute for Development Studies (PIDS).
- Ali, I., & Pernia, E. M. (2003). *Infrastructure and Poverty Reduction - What is the Connection?* Manila: Asian Development Bank (ADB).
- Amrouk, E. M., Rakotoarisoa, M. A., & Chang, K. (2013). *Structural Changes in the Sugar Market and Implications for Sugarcane Smallholders in Developing Countries: Country Case Studies for Ethiopia and the United Republic of Tanzania*. Rome: Food and Agriculture Organization of the United Nations (FAO).
- ASEAN Secretariat. (2006). *ASEAN GAP: Good Agricultural Practices for Production of Fresh Fruit and Vegetables in the ASEAN Region*. Jakarta: Association of Southeast Asian Nations (ASEAN) Secretariat.
- ASEAN Secretariat. (2008). *Handbook on Rules of Origin (RoO) in ASEAN*. Jakarta: Association of Southeast Asian Nations (ASEAN) Secretariat.
- ASEAN Secretariat. (2011). *Master Plan on ASEAN Connectivity*. Jakarta: Association of Southeast Asian Nations (ASEAN) Secretariat.
- ASEAN Secretariat. (2012). *Schedule to the ASEAN Comprehensive Investment Agreement - Philippines*. Jakarta: Association of Southeast Asian Nations (ASEAN) Secretariat.
- ASEAN Secretariat. (2013). Retrieved from ASEAN Single Window Portal: <http://asw.asean.org/>
- ASEAN Secretariat. (2013). *ASEAN Annual Report 2012-2013*. Jakarta: Association of Southeast Asian Nations (ASEAN) Secretariat.
- BAFPS. (2013). Retrieved October 2013, from Bureau of Agriculture and Fisheries Product Standards Web site: <http://www.bafps.da.gov.ph/>
- BFAR. (2012). *Philippine Tuna Fisheries Profile*. Quezon City: Bureau of Fisheries and Aquatic Resources (BFAR).
- Briones, R. M. (2014). *Estimates of Domestic Resource Cost in Philippine Agriculture*. Makati: Report submitted to World Bank. Processed.
- Briones, R. M., & Israel, D. C. (2012). *The ASEAN Economic Community Blueprint: Implementation and Effectiveness Assessment for Philippine Agriculture*. Makati: Philippine Institute for Development Studies (PIDS).
- Clarete, R. (2011). *Should Rice Self-sufficiency Be a Priority for Food Security in the Philippines?* Paper commissioned by the World Bank for the Philippine Department of Agriculture.
- Clarete, R. (2013). *CP and the Local Livestock Industry*. Unpublished note.
- Cororaton, C. B. (2013). *Tariffs, Economic Impact Analysis of the Reduction in Sugar Under the ASEAN Trade in Goods Agreement: The Case of the Philippine Sugar Sector*. Global Issues Initiative/Institute for Society, Culture and Environment, Virginia Tech.
- CountrySTAT. (2014). Retrieved from CountrySTAT Web site: <http://countrystat.bas.gov.ph/>
- DA. (2012). Retrieved from Department of Agriculture Web site: <http://www.da.gov.ph/index.php/2012-03-27-12-03-56/2012-04-13-12-38-36>
- ERIA. (2009, November). Trade Facilitation in the ASEAN Economic Community. *ERIA Policy Brief*.

- ERIA. (2012). *Mid-Term Review of the Implementation of the AEC Blueprint: Executive Summary*. Jakarta: Economic Research Institute for ASEAN and East Asia (ERIA).
- FAO. (2013). Retrieved October 2013, from Food and Agriculture Organization of the United Nations Web site: <http://www.fao.org/>
- FAO. (2014, January). Retrieved from FAO GLOBEFISH Web site: <http://www.globefish.org/>
- FAO. (2014). *Animal Production and Health*. Retrieved from Food and Agriculture Organization of the United Nations (FAO) Web site: <http://www.fao.org/>
- FAO. (2014). *Banana Market Review and Banana Statistics 2012-2013*. Rome: Food and Agriculture Organization of the United Nations (FAO).
- FAO. (2014, January 27). *Philippine coconut farmers struggling to recover from typhoon*. Retrieved from Food and Agriculture Organization of the United Nations (FAO) Web site: <http://www.fao.org/emergencies/fao-in-action/stories/stories-detail/en/c/213045/>
- FAO. (2015). (Food and Agriculture Organization of the United Nations) Retrieved February 2015, from FAOSTAT database: <http://faostat3.fao.org/home/E>
- FAOSTAT. (2014). Retrieved from FAOSTAT Web site: <http://faostat.fao.org/>
- Hamilton, A., Lewis, A., McCoy, M. A., Havice, E., & Campling, L. (2011). *Market and Industry Dynamics in the Global Tuna Supply Chain*. Honiara: Pacific Islands Forum Fisheries Agency (FFA).
- JASTPRO. (2012). *ASEAN Single Window: Hearing Survey in 2012 - Issues to be Studied*. Tokyo: Japan Association for Simplification of International Trade Procedures (JASTPRO).
- Llanto, G. M. (2012). *The Impact of Infrastructure on Agricultural Productivity*. Makati: Philippine Institute for Development Studies (PIDS).
- Llanto, G. M., Sombilla, M. A., & Quimba, F. M. (2012). *Inter-regional Trade of High Value Fruits and Vegetables: Issues on Transport and Shipping*. Makati: Philippine Institute for Development Studies (PIDS).
- Medalla, E. M. (2012). *Managing the ASEAN Economic Integration Process in the Philippines: An Assessment of Progress in Trade Liberalization and Facilitation*. Makati: Philippine Institute for Development Studies (PIDS).
- Medalla, E. M., & Rosellon, M. A. (2012). *ROOs in ASEAN+1 FTAs and the Value Chain in East Asia*. Makati: Philippine Institute for Development Studies (PIDS).
- PCAARRD. (2011). Retrieved from Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD) Web site: <http://www.pcaarrd.dost.gov.ph/>
- Philippine Tariff Commission. (n.d.). Retrieved September 2013, from Philippine Tariff Commission Web site: <http://www.tariffcommission.gov.ph>
- SEARCA. (2013). Adoption of Good Agricultural Practices (GAP) in the Philippines: Challenges, issues, and policy imperatives. *SEARCA Policy Brief Series*.
- Thorpe, S., Warr, S., & Andrews, N. (2007). *ASEAN Meat Exports*. Canberra: ABARE report prepared for AusAID.
- UNCTAD. (2012, April). *Market Information in the Commodities Area*. Retrieved from United Nations Conference on Trade and Development Web site: <http://www.unctad.info/en/Infocomm/>
- WEF. (2014). *The Global Competitiveness Report 2014-2015*. World Economic Forum.
- World Bank. (n.d.). Retrieved November 2013, from World Bank Databank: <http://data.worldbank.org/>

World Bank. (n.d.). *World Integrated Trade Solution (WITS)*. Retrieved November 2013, from UN COMTRADE Data Base: <http://wits.worldbank.org/wits/index.html>

WTO. (n.d.). Retrieved October 2013, from World Trade Organization Web site: <http://www.wto.org/>

WTO Secretariat. (2011). *Trade Policy Review - Thailand*. World Trade Organization Secretariat.

WTO Secretariat. (2013). *Trade Policy Review - Indonesia*. World Trade Organization Secretariat.

WTO Secretariat. (2013). *Trade Policy Review - Viet Nam*. World Trade Organization Secretariat.

Annex 1: AEC Actions with Possible Implications on the A&F Sector: Tariff Measures

| Strategic Approach | Phase ¹³ | Priority Action | Country | Status and Comments |
|--|---------------------|---|------------------------|--|
| A1. Free Flow of Goods | | | | |
| 1. Common Effective Preferential Tariffs-ASEAN Free Trade Area (CEPT-AFTA) | 1 | 1. Enhance CEPT Agreement (2008) | All | |
| 2. Tariffs Reduction | 1 | 2. Complete the tariff reduction schedule to 0-5% for all Included List (IL) products for Laos and Myanmar (2008) | LA, MM | |
| | 2 | 3. Complete the tariff reduction schedule to 0-5% for all IL products for Cambodia (2010) | KH | |
| | | 4. Reduce tariffs on SL products to 0-5% for ASEAN-6 (2010) | BN, ID, MY, PH, SG, TH | Philippines will reduce tariffs on sugar to 5% in 2015 |
| | | 5. Complete the tariff reduction schedule for HSL to the agreed end-rate | All | Philippines will reduce tariffs on rice to 35% in 2015 |
| | 3 | 6. Reduce tariffs on SL products to 0-5% products for Viet Nam (2013). In the case of sugar Viet Nam shall reduce the tariffs to 0-5% by 2010 | VN | |
| | 4 | 7. Complete phase in of the remaining products in the SL into the CEPT Scheme and reduce tariffs on these products to 0-5% (2015 - Lao PDR and Myanmar, 2017 - Cambodia) | LA, MM, KH | |
| 3. Elimination of tariffs | 1 | 8. Integrate products outside the CEPT Scheme in accordance to the CEPT Agreement (2008) | All | |
| | | 9. Eliminate import duties on 60% of all IL products except for those phased in from Sensitive List (SL) and Highly SL (HSL) for Laos and Myanmar (2008) | LA, MM | |
| | | 10. Eliminate import duties on 80% of all IL products except for those phased in from SL and HSL for ASEAN 6 (2007) | BN, ID, MY, PH, SG, TH | |
| | | 11. Eliminate import duties on products in the Priority Integration Sectors (PIS) for ASEAN-6 (2007) | BN, ID, MY, PH, SG, TH | |
| | | 12. Elimination of duties for 1st and 2nd tranche ICT products for CLMV in accordance to the Framework Agreement on e-ASEAN (2008 for the 1st tranche ICT products and 2009 for the 2nd tranche ICT products) | KH, LA, MM, VN | |

¹³ Phase 1: 2008-2009; Phase 2: 2010-2011; Phase 3: 2012-2013; Phase 4: 2014-2015.

| Strategic Approach | Phase 13 | Priority Action | Country | Status and Comments | |
|-------------------------------|---------------------------------------|---|--|---|--|
| A1. Free Flow of Goods | | | | | |
| | 2 | 13. Eliminate import duties on 60% of all Included List (IL) products except for those phased in from (SL) and (HSL) for Cambodia (2010) | KH | | |
| | | 14. Eliminate import duties on 80% of all IL products except for those phased in from SL and HSL for Viet Nam (2010) | VN | | |
| | | 15. Eliminate tariffs on all products, except for those phased in from the SL and HSL, for ASEAN 6 (2010) | BN, ID, MY, PH, SG, TH | | |
| | | 16. Elimination of duties for the 3rd tranche ICT products in CLMV in accordance to the Framework Agreement on Agreement on e-ASEAN (2010) | KH, LA, MM, VN | | |
| | 3 | 17. Eliminate import duties on 80% of all IL products except for those phased in from SL and HSL for Laos and Myanmar (2012) | LA, MM | | |
| | | 18. Eliminate import duties on products in the PIS for Cambodia, Myanmar, Lao PDR and Vietnam (CLMV) (2012) | KH, LA, MM, VN | | |
| | 4 | 19. Eliminate tariffs on all products, except for those phased in from the SL and HSL, for CLMV 2015 with flexibility on some sensitive products up to 2018 | KH, LA, MM, VN | | |
| | 4. Elimination of Non-Tariff Barriers | 1 | 20. Abide by the commitment of a standstill and rollback on NTBs, effective immediately | All | |
| | | | 21. Enhance transparency by abiding to the Protocol on Notification Procedure and setting up an effective Surveillance Mechanism | All | |
| 2 | | 22. Eliminate NTBs for ASEAN 5 (2010) | BN, ID, MY, SG, TH | | |
| 3 | | 23. Eliminate NTBs for the Philippines (2012) | PH | Pending deliverable: Effective Elimination of the Third Tranche of NTBs | |
| 4 | | 24. Eliminate NTBs for CLMV (2015) with flexibility to 2018 for some sensitive products | KH, LA, MM, VN | | |

Annex 2: AEC Actions with Possible Implications on the A&F Sector: Non-Tariff Measures

| Strategic Approach | Phase ¹⁴ | Priority Action | Country | Status and Comments |
|---------------------------------------|--|---|-----------------------------------|-------------------------------------|
| A1. Free Flow of Goods | | | | |
| 25. Rules of Origin | 1-4 | 26. Continuously reform and enhance the CEPT ROO to respond to changes in global production processes, including making necessary adjustments such as the introduction of advance rulings and improvements to the ROO (2007) | All | Pending deliverables (0 out of 1) |
| | | 27. Simplify the Operational Certification Procedures for the CEPT ROO and ensure its continuous enhancement, including the introduction of facilitative processes such as the electronic processing of certificates of origin, and harmonisation or alignment of national procedures to the extent possible (2007) | | |
| | | 28. Review all the ROO implemented by ASEAN Member Countries, individually and collectively, and explore possible cumulation mechanisms, where possible | | |
| 29. Trade Facilitation Work Programme | 1-4 | 30. Finalisation of the Comprehensive Work Programme on Trade Facilitation | All | Pending deliverables (0 out of 1) |
| | | 31. Assessment of Trade Facilitation conditions in ASEAN | | |
| | | 32. Establish Regional Trade Facilitation mechanism | | |
| | | 33. Promote transparency and visibility of all actions and interventions by all stakeholders within international trade transactions | | |
| | | 34. Establish ASEAN Trade Facilitation Repository | | |
| | | 35. ASEAN Criteria for authorised traders | | |
| 2-4 | 36. Promote transparency and visibility of all actions and interventions by all stakeholders within international trade transactions | All | Pending deliverables (0 out of 3) | |
| | 37. Simplified, harmonized, and standardised trade and custom, processes, procedures and related information flows to move goods and associated services internationally from seller to buyer, and to pass payment in opposite direction | | | |
| Customs Integration | 1-4 | 38. Integrate customs structures (Phase 1-3) | All | Pending deliverables (9 out of 26): |

¹⁴ Phase 1: 2008-2009; Phase 2: 2010-2011; Phase 3: 2012-2013; Phase 4: 2014-2015.

| Strategic Approach | Phase 14 | Priority Action | Country | Status and Comments |
|---|-------------|--|---------|--|
| A1. Free Flow of Goods | | | | |
| 39. Strategic Plan of Customs Development | | 40. Modernise customs techniques, guided by simple and harmonised customs procedures and formalities through the implementation of regional models of processing of cargoes and shipments (ASEAN Cargo Processing Model and ASEAN Customs Declaration Document in 2007) as committed (Phase 1-2) | | <ul style="list-style-type: none"> • Develop advance ruling systems for tariff classification, value assessment for customs purposes and origin determination • Implement the ASEAN Cargo Processing Model • Finalisation and Implementation of Protocol 2 relating to ASEAN Customs under the ASEAN Framework on the Facilitation of Goods in Transit • Finalisation and Implementation of Protocol 7 relating to ASEAN Customs under the ASEAN Framework on the Facilitation of Goods in Transit • Develop guidelines for valuation advice and valuation ruling system. • Develop the ASEAN Customs Training Module of Implementation of CEPT/ATIGA ROOs. • Develop the training materials of essential customs techniques. • Develop the training materials of customs modernisation and management. • Compile and publish national legislations related to customs enforcement. |
| | | 41. Establish ASEAN Customs Transit system to facilitate movement of goods and means of transport (Phase 1-2) | | |
| | | 42. Establish ASEAN Customs systems dealing with special customs regimes such as Temporary Admission, Outward Processing and Inward Processing with the view to facilitate integration of production and supply chains (Phase 1-2) | | |
| | | 43. Modernise tariff classification, customs valuation and origin determination and establish ASEAN e-Customs (Phase 1-2) | | |
| | | 44. Adopt international standards and practices to secure a uniform system of tariff classification, a synchronised system of value assessment for customs purposes and a harmonised system of origin determination (origin conferring), and information exchange, where possible (Phase 1-3) | | |
| | | 45. Smoothen customs clearance (Phase 1-3) | | |
| | | 46. Strengthen human resources development (Phase 1-4) | | |
| | | 47. Implement ASEAN e-Customs (Phase 1-4) | | |
| 48. Promote mutual assistance for better customs efficiency and effectiveness (Phase 1-4) | | | | |
| 49. ASEAN Single Window | 1-3 | 50. Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore and Thailand operationalise their National Single Windows by 2008 | All | Pending deliverable (1 out of 3): Development of the Legal Framework for Implementation of Measures of Simplifying, Harmonising, and Standardising Trade and Customs regarding ASEAN Single Windows. |
| | | 51. ASEAN-4 (Cambodia, Lao PDR, Myanmar and Viet Nam) operationalise their National Single Windows no later than 2012 (Phase 1-3) | | |
| | | 52. Implementation of measures of simplifying, harmonising and standardising trade and customs, processes and procedures (Phase 1-3) | | |

| Strategic Approach | Phase 14 | Priority Action | Country | Status and Comments |
|-------------------------------|-------------|---|---------|---------------------|
| A1. Free Flow of Goods | | | | |
| | | 53. Standardisation of data elements based on WCO data model, the WCO data set and United Nation Trade Data Directory (UNTDDED) and acceleration of introduction of information, communication and technology (ICT) for digitalised processing and exchange (Phase 1-3) | | |
| | | 54. Application of ICT in all areas related to trade facilitation and customs management are paramount in the ultimate creation of an ASEAN Single Window (Phase 1-3) | | |

Annex 3: AEC Actions with Possible implications on the A&F Sector: Food, Agriculture and Forestry

| Strategic Approach | Phase ¹⁵ | Priority Action | Country | Status and Comments |
|---|---------------------|---|---------|--|
| A7. Food, Agriculture and Forestry | | | | |
| <ul style="list-style-type: none"> Enhance intra- and extra-ASEAN trade and long-term competitiveness of ASEAN's food, agriculture and forestry products/ commodities. | 1 | <ul style="list-style-type: none"> Develop and apply fisheries quality management system that ensure food safety and support competitive position of ASEAN fisheries products on world markets through the implementation, validation, verification of Hazard Analysis Critical Control Point (HACCP)- based systems and improved laboratories practices, and adapting quality and safety management systems so that they may be applied to small enterprises in ASEAN by 2009 | All | Pending deliverables (0 out of 4) |
| | | <ul style="list-style-type: none"> Harmonise the Maximum Residue Limits (MRLs) of commonly used pesticides for widely traded crop products in accordance with international standards/ guidelines, where applicable, by 2010 | | |
| | | <ul style="list-style-type: none"> Harmonise guidelines for the use of chemicals in aquaculture and measures to eliminate the use of harmful chemicals by 2009 | | |
| | | <ul style="list-style-type: none"> Define legality standard of timber by 2008. | | |
| | | <ul style="list-style-type: none"> Finalised draft Guideline on Phased-approach to Forest Certification by 2009. | | |
| | 2 | <ul style="list-style-type: none"> Harmonise the quarantine and inspection/ sampling procedure by 2010 | All | Pending deliverables (1 out of 4): Define and Finalise Country-specific Verifiers for Legal Timber. |
| | | <ul style="list-style-type: none"> Field testing on the Implementation of the Guideline by 2010. | | |
| | | <ul style="list-style-type: none"> Capacity building activities for the implementation of the Guideline at national level during 2010 - 2011 | | |
| | 3 | <ul style="list-style-type: none"> Establish Good Agriculture / Aquaculture Practices (GAP), Good Animal Husbandry Practices (GAHP), Good Hygiene Practices (GHP), Good Manufacturing Practices (GMP), and Hazard Analysis Critical Control Point (HACCP) based systems; for agricultural and food products with significant trade / trade potential by 2012 | All | Pending deliverables (0 out of 2) |

¹⁵ Phase 1: 2008-2009; Phase 2: 2010-2011; Phase 3: 2012-2013; Phase 4: 2014-2015.

| Strategic Approach | Phase 15 | Priority Action | Country | Status and Comments |
|---|-------------|---|-------------------------------|-----------------------------------|
| A7. Food, Agriculture and Forestry | | | | |
| | 4 | <ul style="list-style-type: none"> • Sanitary and Phytosanitary (SPS) measures for agricultural, food and forestry products with significant trade / trade potential by 2015 • Harmonise the regulatory framework for agricultural products derived from modern biotechnology by 2015 • Harmonise the safety and quality standards for horticultural produce and agricultural products of economic importance in the ASEAN region by 2015 • Harmonise the animal (both terrestrial and aquatic animals) health control for safety of food of animal origin through a common bio-security management standards scheme by 2015 • Develop a regional reference framework on phased-approach to forest certification by 2015 | All All All All - | Pending deliverables (0 out of 3) |
| <ul style="list-style-type: none"> • Promote cooperation, joint approaches and technology transfer with international, regional organisations and private sector | 1-4 | <ul style="list-style-type: none"> • Develop joint strategies / positions on issues of related interest to ASEAN with international organisations such as WTO, FAO, OIE, IPPC, CODEX, CITES and dialogue partners • Promote collaborative research and technology transfer in agriculture, food and forestry products • Establish strategic alliances and joint approaches with the private sectors in promoting food safety, investment and joint venture opportunities, promotion of agricultural products and market access • Strengthen efforts to combat illegal logging and its associated trade, forest fire and its resultant effects • Strengthen efforts to combat illegal fishing | All | Pending deliverables (0 out of 6) |
| <ul style="list-style-type: none"> • Promote ASEAN agricultural cooperatives as a means to empower and enhance market access of agricultural products, to build a network mechanism linking agricultural cooperatives, and to fulfil the purpose of agricultural | 1-4 | <ul style="list-style-type: none"> • Strengthen strategic alliance between agricultural cooperatives in ASEAN through bilateral, regional and multilateral cooperation • Establish business linkages among the potential agricultural cooperatives within ASEAN • Promote direct investment and strategic partnership with ASEAN agricultural cooperatives producers, consumers, and traders | | Pending deliverables (0 out of 1) |

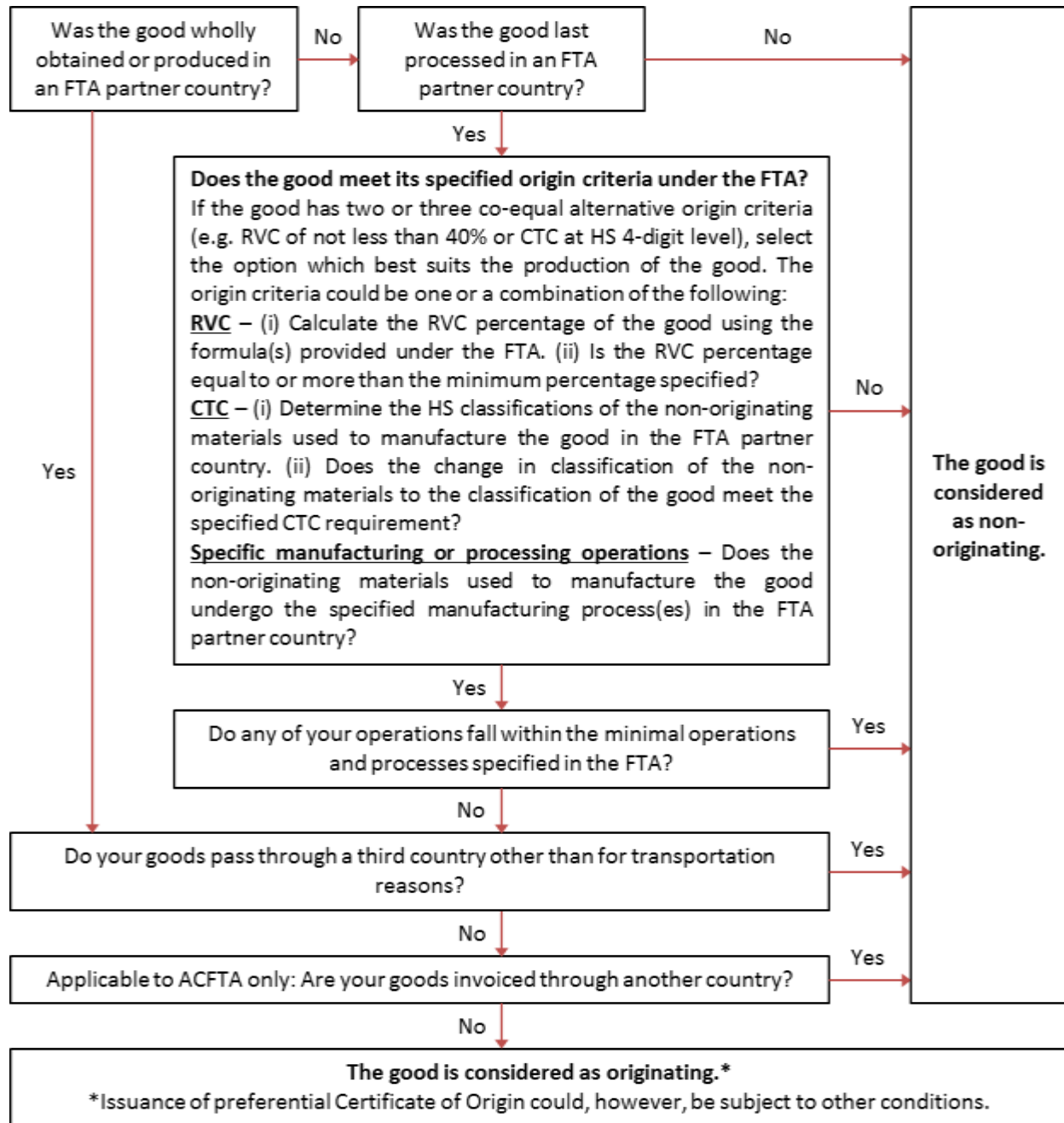
| Strategic Approach | Phase 15 | Priority Action | Country | Status and Comments |
|---|-------------|-----------------|---------|---------------------|
| A7. Food, Agriculture and Forestry | | | | |
| cooperatives for the benefit of farmers in the region | | | | |

Annex 4: Philippine Sensitive List Tariff Reduction Schedule

| AHTN 2012 | Description | ATIGA Tariffs (%) | | | |
|-------------------|---|-------------------|------|------|------|
| | | 2012 | 2013 | 2014 | 2015 |
| | Live swine. | | | | |
| | - Other: | | | | |
| 0103.91.00 | -- Weighing less than 50 kg | 5 | 5 | 5 | 5 |
| 0103.92.00 | -- Weighing 50 kg or more | 5 | 5 | 5 | 5 |
| | Live poultry, that is to say, fowls of the species Gallus domesticus, ducks, geese, turkeys and guinea fowls. | | | | |
| | - Weighing not more than 185 g: | | | | |
| | -- Fowls of the species Gallus domesticus: | | | | |
| 0105.11.90 | --- Other | 5 | 5 | 5 | 5 |
| | - Other: | | | | |
| | -- Fowls of the species Gallus domesticus: | | | | |
| | --- Other: | | | | |
| 0105.94.91 | ---- Weighing not more than 2 kg | 5 | 5 | 5 | 5 |
| 0105.94.99 | ---- Other | 5 | 5 | 5 | 5 |
| | Meat of swine, fresh, chilled or frozen. | | | | |
| | - Fresh or chilled: | | | | |
| 0203.11.00 | -- Carcasses and half-carcasses | 5 | 5 | 5 | 5 |
| 0203.12.00 | -- Hams, shoulders and cuts thereof, with bone in | 5 | 5 | 5 | 5 |
| 0203.19.00 | -- Other | 5 | 5 | 5 | 5 |
| | - Frozen: | | | | |
| 0203.21.00 | -- Carcasses and half-carcasses | 5 | 5 | 5 | 5 |
| 0203.22.00 | -- Hams, shoulders and cuts thereof, with bone in | 5 | 5 | 5 | 5 |
| 0203.29.00 | -- Other | 5 | 5 | 5 | 5 |
| | Meat and edible offal, of the poultry of heading 01.05, fresh, chilled or frozen. | | | | |
| | - Of fowls of the species Gallus domesticus: | | | | |
| 0207.11.00 | -- Not cut in pieces, fresh or chilled | 5 | 5 | 5 | 5 |
| 0207.12.00 | -- Not cut in pieces, frozen | 5 | 5 | 5 | 5 |
| 0207.13.00 | -- Cuts and offal, fresh or chilled | 5 | 5 | 5 | 5 |
| | -- Cuts and offal, frozen: | | | | |
| 0207.14.10 | --- Wings | 5 | 5 | 5 | 5 |
| 0207.14.20 | --- Thighs | 5 | 5 | 5 | 5 |
| 0207.14.30 | --- Livers | 5 | 5 | 5 | 5 |
| | --- Other: | | | | |
| 0207.14.91 | ---- Mechanically deboned or separated meat | 5 | 5 | 5 | 5 |
| 0207.14.99 | ---- Other | 5 | 5 | 5 | 5 |
| | - Of turkeys: | | | | |
| | -- Cuts and offal, frozen: | | | | |
| 0207.27.10 | --- Livers | 5 | 5 | 5 | 5 |
| | --- Other: | | | | |
| 0207.27.91 | ---- Mechanically deboned or separated meat | 5 | 5 | 5 | 5 |
| 0207.27.99 | ---- Other | 5 | 5 | 5 | 5 |
| | - Of ducks: | | | | |

| | | | | | |
|-------------------|--|----|----|----|---|
| 0207.41.00 | -- Not cut in pieces, fresh or chilled | 5 | 5 | 5 | 5 |
| 0207.44.00 | -- Other, fresh or chilled | 5 | 5 | 5 | 5 |
| 0207.45.00 | -- Other, frozen | 5 | 5 | 5 | 5 |
| | - Of geese: | | | | |
| 0207.51.00 | -- Not cut in pieces, fresh or chilled | 5 | 5 | 5 | 5 |
| 0207.54.00 | -- Other, fresh or chilled | 5 | 5 | 5 | 5 |
| 0207.55.00 | -- Other, frozen | 5 | 5 | 5 | 5 |
| 0207.60.00 | - Of guinea fowls | 5 | 5 | 5 | 5 |
| | - Manioc (cassava): | | | | |
| | -- Sliced or in the form of pellets: | | | | |
| 0714.10.11 | --- Dried chips | 5 | 5 | 5 | 5 |
| 0714.10.19 | --- Other | 5 | 5 | 5 | 5 |
| | -- Other: | | | | |
| 0714.10.91 | --- Frozen | 5 | 5 | 5 | 5 |
| 0714.10.99 | --- Other | 5 | 5 | 5 | 5 |
| | - Sweet potatoes: | | | | |
| 0714.20.10 | -- Frozen | 5 | 5 | 5 | 5 |
| 0714.20.90 | -- Other | 5 | 5 | 5 | 5 |
| | Maize (corn). | | | | |
| | - Other: | | | | |
| 1005.90.10 | -- Popcorn | 0 | 0 | 0 | 0 |
| 1005.90.90 | -- Other | 5 | 5 | 5 | 5 |
| | Grain sorghum. | | | | |
| 1007.10.00 | - Seed | 0 | 0 | 0 | 0 |
| 1007.90.00 | - Other | 0 | 0 | 0 | 0 |
| | Cane or beet sugar and chemically pure sucrose, in solid form. | | | | |
| | - Raw sugar not containing added flavouring or colouring matter: | | | | |
| 1701.12.00 | -- Beet sugar | 28 | 18 | 10 | 5 |
| 1701.13.00 | -- Cane sugar specified in Subheading Note 2 to this Chapter | 28 | 18 | 10 | 5 |
| 1701.14.00 | -- Other cane sugar | 28 | 18 | 10 | 5 |
| | - Other: | | | | |
| | -- Other: | | | | |
| | --- Refined sugar: | | | | |
| 1701.99.11 | ---- White | 28 | 18 | 10 | 5 |
| 1701.99.19 | ---- Other | 28 | 18 | 10 | 5 |
| 1701.99.90 | --- Other | 28 | 18 | 10 | 5 |

Annex 5: Flowchart for Determining the Origin of a Good



Source: Handbook on Rules of Origin in ASEAN (ASEAN Secretariat, 2008)

Annex 6: List of Philippine National Single Window Participating Agencies

| Issuing Import/Export Permit Government Agencies | Users of Inter-Agency Portal |
|--|---|
| 1) Board of Investments | A. Banko Sentral ng Pilipinas |
| 2) Bureau of Animal Industry | B. Bureau of Immigration |
| 3) Bureau of Customs | C. Criminal Investigation and Detention Group |
| 4) Bureau of Export Trade Promotion | D. DOF One Stop Shop |
| 5) Bureau of Fisheries and Aquatic Resources | E. Fiber Industry Development Authority |
| 6) Bureau of Forestry | F. Insurance Commission |
| 7) Bureau of Import Services | G. Intellectual Property Office |
| 8) Bureau of Internal Revenue | H. Land Transportation Office |
| 9) Bureau of Plant Industry | I. National Intelligence Coordinating Agency |
| 10) Bureau of Product Standards | J. Philippine Shippers Bureau |
| 11) Bureau of Quarantine | |
| 12) Civil Aviation Authority of the Philippines | |
| 13) Dangerous Drugs Board | |
| 14) Department of Health | |
| 15) Environment Management Bureau | |
| 16) Fertilizers and Pesticide Authority | |
| 17) Firearms and Explosives Office | |
| 18) Food and Drug Administration | |
| 19) Maritime Industry Authority | |
| 20) National Food Authority | |
| 21) National Meat Inspection Service | |
| 22) National Telecommunications Commission | |
| 23) Optical Media Board | |
| 24) Philippine Coconut Authority | |
| 25) Philippine Drug Enforcement Agency | |
| 26) Philippine Economic Zone Authority | |
| 27) Philippine National Police | |
| 28) Philippine Nuclear Research Institute | |
| 29) Philippine Ozone Desk | |
| 30) Sugar Regulatory Administration | |

Source: ASEAN Single Window Portal (ASEAN Secretariat, 2013)

NAFC Members

Food Crops Sector:

Dulce Gozon (National Onion Growers Cooperative Marketing Association)
Pedro Kho (Fresh Food Dealers' Association of Manila, Inc.)

Commercial Crops Sector:

Edward David (Coffee Foundation of the Philippines)
David Santos (Ka Tribu Ug Ang Lasang Foundation Inc.)

Poultry, Livestock, and Feed Crops Sector:

Jess Cham (Meat Importers and Traders Association)
Elias Jose Inciong (United Broiler Association)

Fisheries Sector:

Arsenio Tanchuling (Tambuyog Development Center, Inc.)
Romel Sotto (Seachamp International Export Corp.)

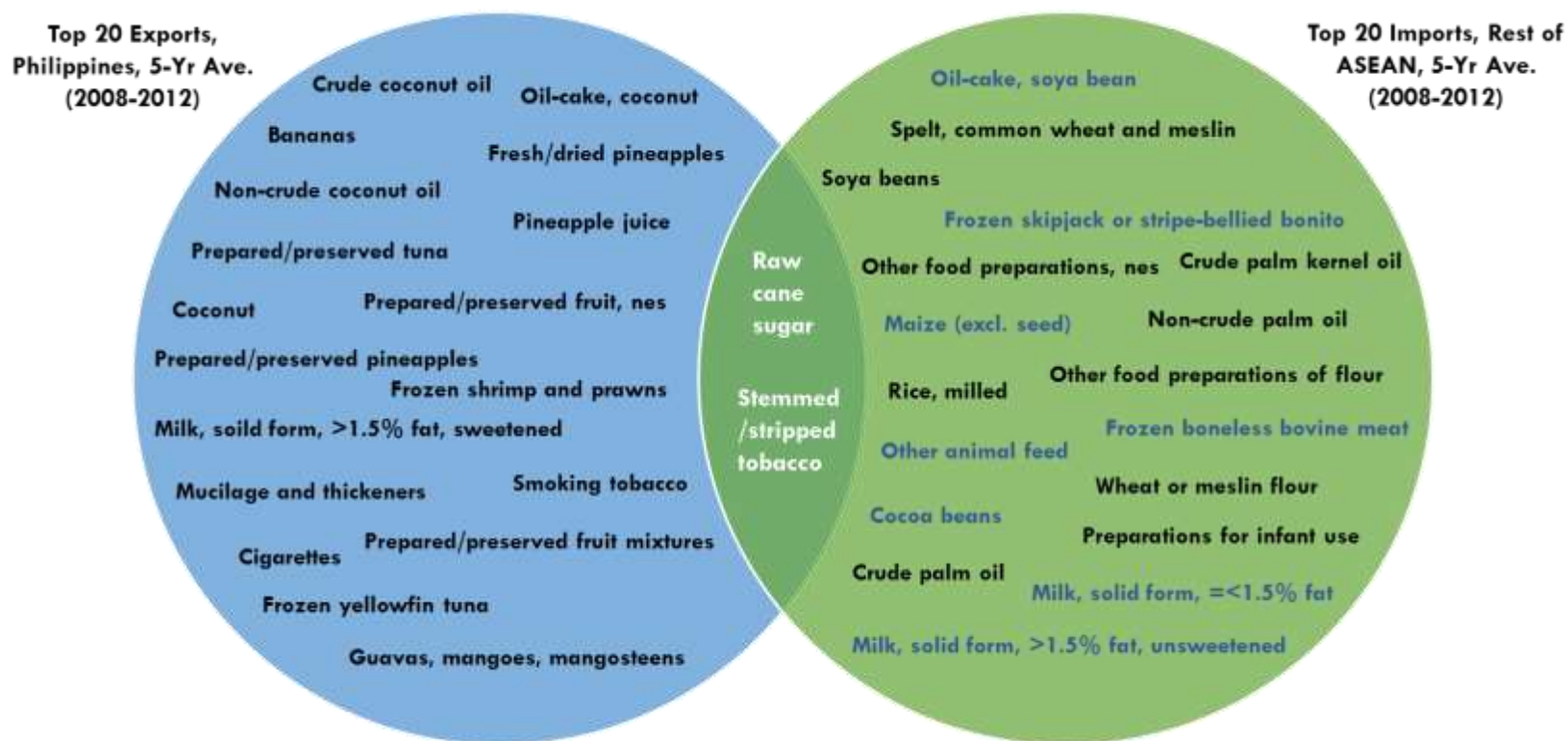
International Trade

Alonso Tan (Inter-Island Deep Sea Fishing Association, Alliance of Phil. Fishing Federation Inc.)
Raul Montemayor (Federation of Free Farmers Cooperative, Inc.)

Non-NAFC Members

Ogie Reyes (Cocoa Foundation of the Philippines)
Georgie Tan and Teresita de Jesus (Inter-Island Deep Sea Fishing Association)
Michael Lim (Alliance of Phil. Fishing Federation Inc.)

Annex 8. Exploring Export Opportunities



Annex 9. Global Competitive Index, Philippines, 2014-2015

| Indicator | Value | Rank | Indicator | Value | Rank |
|---|------------|-----------|---|------------|-----------|
| 1st pillar: Institutions | 3.9 | 67 | 6.06 No. procedures to start a business* | 15.0 | 141 |
| 1.01 Property rights | 4.3 | 61 | 6.07 No. days to start a business* | 35.0 | 119 |
| 1.02 Intellectual property protection | 3.7 | 66 | 6.08 Agricultural policy costs | 3.7 | 86 |
| 1.03 Diversion of public funds | 3.1 | 78 | 6.09 Prevalence of trade barriers | 4.5 | 51 |
| 1.04 Public trust in politicians | 2.6 | 89 | 6.10 Trade tariffs, % duty* | 3.6 | 48 |
| 1.05 Irregular payments and bribes | 3.6 | 86 | 6.11 Prevalence of foreign ownership | 4.9 | 51 |
| 1.06 Judicial independence | 3.6 | 77 | 6.12 Business impact of rules on FDI | 4.5 | 65 |
| 1.07 Favoritism in decisions of government officials | 3.1 | 66 | 6.13 Burden of customs procedures | 3.5 | 99 |
| 1.08 Wastefulness of government spending | 3.3 | 60 | 6.14 Imports as a percentage of GDP* | 29.7 | 119 |
| 1.09 Burden of government regulation | 3.4 | 73 | 6.15 Degree of customer orientation | 5.2 | 25 |
| 1.10 Efficiency of legal framework in settling disputes | 3.7 | 68 | 6.16 Buyer sophistication | 3.7 | 46 |
| 1.11 Efficiency of legal framework in challenging regs. | 3.5 | 56 | 7th pillar: Labor market efficiency | 4.0 | 91 |
| 1.12 Transparency of government policymaking | 3.8 | 85 | 7.01 Cooperation in labor-employer relations | 4.9 | 29 |
| 1.13 Business costs of terrorism | 4.6 | 110 | 7.02 Flexibility of wage determination | 4.8 | 86 |
| 1.14 Business costs of crime and violence | 4.3 | 77 | 7.03 Hiring and firing practices | 3.4 | 104 |
| 1.15 Organized crime | 4.7 | 69 | 7.04 Redundancy costs, weeks of salary* | 27.4 | 124 |
| 1.16 Reliability of police services | 3.6 | 101 | 7.05 Effect of taxation on incentives to work | 3.9 | 47 |
| 1.17 Ethical behavior of firms | 4.3 | 49 | 7.06 Pay and productivity | 4.5 | 27 |
| 1.18 Strength of auditing and reporting standards | 5.1 | 48 | 7.07 Reliance on professional management | 5.0 | 29 |
| 1.19 Efficacy of corporate boards | 5.1 | 29 | 7.08 Country capacity to retain talent | 3.5 | 60 |
| 1.20 Protection of minority shareholders' interests | 4.5 | 45 | 7.09 Country capacity to attract talent | 3.3 | 82 |
| 1.21 Strength of investor protection, 0–10 (best)* | 4.3 | 105 | 7.10 Women in labor force, ratio to men* | 0.6 | 106 |
| 2nd pillar: Infrastructure | 3.5 | 91 | 8th pillar: Financial market development | 4.4 | 49 |
| 2.01 Quality of overall infrastructure | 3.7 | 95 | 8.01 Availability of financial services | 5.0 | 42 |
| 2.02 Quality of roads | 3.6 | 87 | 8.02 Affordability of financial services | 4.8 | 43 |
| 2.03 Quality of railroad infrastructure | 2.3 | 80 | 8.03 Financing through local equity market | 4.4 | 23 |
| 2.04 Quality of port infrastructure | 3.5 | 101 | 8.04 Ease of access to loans | 3.5 | 30 |
| 2.05 Quality of air transport infrastructure | 3.6 | 108 | 8.05 Venture capital availability | 3.3 | 31 |
| 2.06 Available airline seat km/week, millions* | 1171 | 25 | 8.06 Soundness of banks | 5.5 | 46 |
| 2.07 Quality of electricity supply | 4.2 | 87 | 8.07 Regulation of securities exchanges | 4.6 | 45 |
| 2.08 Mobile telephone subscriptions/100 pop.* | 104.5 | 86 | 8.08 Legal rights index, 0–10 (best)* | 4.0 | 96 |
| 2.09 Fixed telephone lines/100 pop.* | 3.2 | 113 | 9th pillar: Technological readiness | 3.8 | 69 |
| 3rd pillar: Macroeconomic environment | 5.8 | 26 | 9.01 Availability of latest technologies | 5.1 | 58 |
| 3.01 Government budget balance, % GDP* | -0.1 | 25 | 9.02 Firm-level technology absorption | 5.1 | 41 |
| 3.02 Gross national savings, % GDP* | 22.9 | 51 | 9.03 FDI and technology transfer | 5.0 | 31 |
| 3.03 Inflation, annual % change* | 2.9 | 57 | 9.04 Individuals using Internet, %* | 37.0 | 91 |
| 3.04 General government debt, % GDP* | 38.3 | 58 | 9.05 Fixed broadband Internet subscriptions/100 pop.* | 2.6 | 93 |
| 3.05 Country credit rating, 0–100 (best)* | 55.5 | 59 | 9.06 Int'l Internet bandwidth, kb/s per user* | 57.6 | 46 |
| 4th pillar: Health and primary education | 5.4 | 92 | 9.07 Mobile broadband subscriptions/100 pop.* | 20.3 | 79 |
| 4.01 Malaria cases/100,000 pop.* | 23.8 | 23 | 10th pillar: Market size | 4.7 | 35 |
| 4.02 Business impact of malaria | 4.9 | 34 | 10.01 Domestic market size index, 1–7 (best)* | 4.5 | 30 |
| 4.03 Tuberculosis cases/100,000 pop.* | 265.0 | 127 | 10.02 Foreign market size index, 1–7 (best)* | 5.1 | 42 |
| 4.04 Business impact of tuberculosis | 4.4 | 114 | 10.03 GDP (PPP\$ billions)* | 456.4 | 31 |
| 4.05 HIV prevalence, % adult pop.* | 0.1 | 1 | 10.04 Exports as a percentage of GDP* | 28.0 | 102 |
| 4.06 Business impact of HIV/AIDS | 4.9 | 94 | 11th pillar: Business sophistication | 4.3 | 46 |
| 4.07 Infant mortality, deaths/1,000 live births* | 23.5 | 95 | 11.01 Local supplier quantity | 4.6 | 69 |
| 4.08 Life expectancy, years* | 68.6 | 101 | 11.02 Local supplier quality | 4.4 | 65 |
| 4.09 Quality of primary education | 4.2 | 60 | 11.03 State of cluster development | 4.0 | 51 |
| 4.10 Primary education enrollment, net %* | 88.2 | 105 | 11.04 Nature of competitive advantage | 3.4 | 77 |
| 5th pillar: Higher education and training | 4.4 | 64 | 11.05 Value chain breadth | 4.1 | 44 |
| 5.01 Secondary education enrollment, gross %* | 84.6 | 89 | 11.06 Control of international distribution | 4.4 | 43 |
| 5.02 Tertiary education enrollment, gross %* | 28.2 | 82 | 11.07 Production process sophistication | 4.3 | 44 |
| 5.03 Quality of the education system | 4.5 | 29 | 11.08 Extent of marketing | 4.7 | 41 |
| 5.04 Quality of math and science education | 4.1 | 70 | 11.09 Willingness to delegate authority | 4.7 | 24 |
| 5.05 Quality of management schools | 4.7 | 40 | 12th pillar: Innovation | 3.5 | 52 |
| 5.06 Internet access in schools | 4.3 | 66 | 12.01 Capacity for innovation | 4.5 | 30 |
| 5.07 Availability of research and training services | 4.4 | 49 | 12.02 Quality of scientific research institutions | 3.6 | 75 |
| 5.08 Extent of staff training | 4.6 | 27 | 12.03 Company spending on R&D | 3.5 | 42 |
| 6th pillar: Goods market efficiency | 4.3 | 70 | 12.04 University-industry collaboration in R&D | 3.8 | 55 |
| 6.01 Intensity of local competition | 5.2 | 61 | 12.05 Gov't procurement of advanced tech products | 3.7 | 53 |
| 6.02 Extent of market dominance | 3.5 | 85 | 12.06 Availability of scientists and engineers | 4.0 | 71 |
| 6.03 Effectiveness of anti-monopoly policy | 4.0 | 72 | 12.07 PCT patents, applications/million pop.* | 0.3 | 86 |
| 6.04 Effect of taxation on incentives to invest | 3.9 | 52 | | | |
| 6.05 Total tax rate, % profits* | 44.5 | 100 | | | |

Note: Values are on a 1-to-7 scale unless otherwise annotated with an asterisk (*). Source: (WEF, 2014)

Basic requirements

Efficiency enhancers

Innovation and sophistication factors