



# Summary of ERIA Research Projects

2014–2015



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**DEEPENING  
ECONOMIC  
INTEGRATION**

# 1

## **Framing the ASEAN Socio-Cultural Community Post 2015: Engendering Inclusiveness, Resiliency, Sustainability and Unity for One ASEAN Community**

### **Abstract**

This project is a joint ERIA-ASEAN Secretariat (ASEC) ASCC Department project, with the end view of providing guidance to the ASCC bodies as they develop and agree on the action plans for ASCC Blueprint post 2015.

In framing the ASCC post 2015, the project has enlisted specialists and consultants to prepare “think pieces” on selected key components of the ASCC. The think pieces provide the (analytic) framework to frame the review of the past and/or the direction of the future, and the corresponding way forward.

Each think piece takes into consideration the ASEAN vision from the ASCC Blueprint and ASEAN regional agreements on the selected area of concern, and where feasible, suggests outcomes of the vision and regional agreement(s) and the possible indicators of such outcomes, and examines the evolution of the indicators of the outcomes of the ASEAN vision/regional agreement(s), where such indicators are available. The objective of such examination of the evolution of outcome indicators is to explore setting targets for end period, say by 2025 or 2030, drawing what is feasible from the literature, analytic work, and experiences of other regions, and discussions with concerned stakeholders like ASEAN officials.

The framing of the ASCC for the post 2015 period necessitates understanding of the performance of ASCC and the implementation of the ASCC Blueprint action plans over the past half-decade or so. This review will draw from the results of the Mid-Term Review of the ASCC undertaken by the monitoring data of the ASEC ASCC Department, and other reports undertaken for ASEAN Secretariat. A key challenge for the think pieces is that besides national dimensions, regional perspective and dimension have to be brought into the many areas of the Socio-Cultural Community. This may include development and use of indicators or bench marks as trigger points for collective ASEAN action to meet collective targets. The specification of the review, analysis, and the way forward may include the following where relevant and as much as possible:

- Concerted (national) efforts on policies, institutional development, etc. among AMSs in order to achieve the goals and targets consistent with the vision set out;
- Regional (ASEAN) cooperation initiatives, perhaps in tandem with global and/or extra-ASEAN (e.g., East Asia wide) initiatives; and
- Technology and innovation possibilities and considerations, OR community-based dimensions

In both the review and the way forward on the above, the large difference in levels of development among AMSs would be taken into consideration.

The project does not cover the whole range of areas under the ASCC Blueprint. Instead, it focuses on a number of important areas for ASCC with the end view of providing frameworks and perspectives that would help shape and enrich the ASCC Blueprint Post 2015. Many of the topics are framed to highlight the interconnection between the ASCC and the AEC Blueprint measures. This reflects an underlying presumption in the Project that a truly well performing and successful AEC is underpinned and complemented by a well performing and successful ASCC, and vice versa<sup>1</sup>.

## Areas and Topics

### TOWARDS GREATER RESILIENCY:

#### 1. Disaster Risk Reduction, Management and Response

- a. Establishing the Hyogo Framework as the overriding architecture for concerted initiatives toward disaster risk reduction and resilience among AMSs: analysis of the HF measures and their implementability among AMSs. **Venkatachalam Anbumozhi.**
- b. Strengthening regional cooperation in disaster risk management and response: status, challenges and way(s) forward. **Prof. Minquan Liu, Beijing**
- c. Innovative insurance mechanisms to enhance pro-poor risk management and reconstruction. **Prof. Yasuyuki Sawada, University of Tokyo**

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<sup>1</sup> Thus, for example, the equity dimension of AEC Blueprint is enhanced by investments in education and health and much better access to quality education by the poor under ASCC Blueprint. Similarly, ASEAN peoples would likely support more full liberalization among ASEAN member states (under AEC) if they value highly their sense of ASEAN identity and consider themselves as part of one ASEAN community (under ASCC).

## **TOWARDS GREATER SUSTAINABILITY**

### **2. Green Growth and Climate Change**

- a. Can thinking green and sustainability be an economic opportunity for ASEAN? **Venkatachalam Anbumozhi and Ponciano Intal Jr.**
- b. Climate change, food security and climate change mitigation in ASEAN. ASEAN is one of the most vulnerable regions in the world with respect to the impact of climate change on food production and food security. **Paul Teng and Mely C. Antony, RSIS, NTU, Singapore**
- c. Engendering livable low carbon smart cities in ASEAN as an inclusive green growth model and the opportunities for regional cooperation. **Prof. Sivanappan Kumar, AIT, Bangkok.**
- d. Strengthening natural resources management in ASEAN: national and regional imperatives, targets, and opportunities. **Prof. Kaliappa Kalirajan, ANU, Canberra. Confirmed.**
- e. Empowering communities and countries to preserve biodiversity at national and ASEAN level: status, challenges, way forward. **Dr. Percy Sajise, Plant Genetics Research Institute, Biodiversity International and SEARCA.**
- f. Tracking clean energy progress in AMSs and analysis of implementation deficits in cross-border cooperation. **Venkatachalam Anbumozhi and ERIA Energy Unit. Confirmed.**
- g. Reframing ASEAN's Trans-boundary Haze Pollution Problem. **Dr. Apichai Sunchindah, formerly ASEAN Foundation**

## **TOWARDS GREATER UNITY**

### **3. Cultural Diversity and ASEAN Identity**

- a. Enhancing awareness and interconnectedness towards greater belongingness: status, better organization and innovations to raise regional and national initiatives to a higher level. **Elaine Tan, ASEAN Foundation, Dr. Apichai Sunchindah, formerly ASEAN Foundation, and Dr. Alexander Chandra, ABAC**
- b. Shared cultures; shared histories; shared geography: Towards Unity in Diversity in ASEAN. **Prof. Farish Ahmad Noor, RSIS, NTU, Singapore**



- c. In search of ASEAN Identity: Insights from the past; challenges and opportunities in the present. **Eddin Khoo and Pauline Fan, Seni Pusaka, Malaysia**
- d. In search of ASEAN identity. Some thoughts and perspectives on ASEAN identity. **Hidetoshi Nishimura**
- e. Investing in cultural heritage and development for competitiveness and growth in the creative world economy. **Dr. Mari Pangestu, GOI. TBC.**
- f. CoHHO and “The Sea is Longing for the Forest” Movement: Reframing ASEAN environmentalism and as foundation of emerging ASEAN identity. **Prof. Masaru Tanaka, Emeritus Professor, Kyoto University, and Mr. Sigetsu Hatakeyama**
- g. Engendering ASEAN identity: the role of film. **Miguel de la Rosa**

## **TOWARDS GREATER EQUITY AND SOCIAL WELFARE:**

### **4. Health**

- a. Engendering concerted national efforts towards improved health outcomes: status, challenges, targets, way(s) forward. **Dr. Oscar Picazo, formerly World Bank**
- b. Strengthening regional cooperation, coordination and response to regional or sub-regional health concerns (e.g., health pandemics, emerging infectious diseases): status, challenges and way(s) forward. **Dr. Jacob Kumaresan, World Health Organization, New York**

### **5. Social Welfare and Protection**

- a. People to people connectivity and cooperation for poverty reduction and human capital improvement in ASEAN: status, challenges and way(s) forward. **Elaine Tan, ASEAN Foundation**
- b. Addressing poverty and vulnerability in ASEAN: analysis of measures and implications for the way forward. **Dr. Sudarno Sumarto, SMERU, Indonesia**
- c. Rural development, employment, and inclusive growth in ASEAN. **Dr Vo Tri Thanh, CIEM, Hanoi**
- d. Social insurance and social protection in ASEAN: status, challenges and way(s) forward. **Prof. Mukul Asher, NUS, Singapore and Fauziah Zen**

- e. Improving the regulatory and support environment for migrant workers towards greater productivity, competitiveness and social welfare in ASEAN. **Naomi Hatsukano, BRC Bangkok**
- f. Managing industrial adjustment and labor market churning: can there be a facilitative industrial relations environment? **Dr. Rene Ofreneo, SOLAIR, UP Diliman and Dr. Kun Wardana Abyoto, UNI-APRO**
- g. Social Welfare and Social Protection of Vulnerable Groups in ASEAN: Status, Challenges, and Way Forward. **Braema Mathiaparanam, Past Regional President (Southeast Asia and Pacific), International Council of Social Welfare.**

## **6. Education and Human Resource Development**

- a. Investing in quality basic education for all. **Prof. Tereso Tullao, DLSU Manila**
- b. Investing in workers and firms as learning centers for industrial upgrading. **Dr. Hank Lim, SIIA, Singapore**
- c. Investing in higher education, research and development for technological upgrading, innovation, and competitiveness. **Prof. Robin Sakamoto, Kyorin University, Tokyo**

There will be an **Integrative Report**, under the responsibility of Ponciano S. Intal, Jr., Venkatachalam Anbumozhi, and Fauziah Zen. They are also the coordinators of the study. The draft Integrative Report will be submitted to ASEC and ASCC Council in end June 2015. The book and final Report will be published in June 2016.

# 2

## **Towards Responsive Regulations and Regulatory Coherence in ASEAN and East Asia: Deconstructing Effective and Efficient Regulatory Management System**

### **Abstract**

This project is a joint undertaking of ERIA and New Zealand Institute of Economic Research (NZIER), and it was initiated by the perceived need for improving connectivity and regulatory coherence in the EAS region. Countries in the region are reviewing the role of regulatory management (RM) regimes as a means of reducing the costs of doing business, facilitating international trade and investment, and improving regulatory outcomes in areas such as health, safety and environmental protection.

Building on the 2011 East Asia Summit (EAS) Declaration on ASEAN Connectivity, which declared that EAS members would seek to support ASEAN efforts to build physical, institutional and people-to-people connectivity, the EAS has an important role to play in building cooperation between ASEAN and other EAS participating countries in internal regulatory management, and regulatory cooperation across borders; reducing behind the border regulatory barriers to trade, the flow of skilled labour and investment. The study is in fulfilment of this objective.

This study also complements the need for a responsive ASEAN, which involves ASEAN and ASEAN Member States (AMSs) being responsive to, and address the concerns of, business in the region because ASEAN and AMSs need to create and maintain conducive business and investment environments. This would entail a responsive regulatory regime, which in terms of process involves consultation, coordination and evaluation, and in terms of content involves pro-competitive, commensurate and non-discriminatory regulations which are streamlined, meaningful, adaptive, relevant and transparent. Finally, Responsive ASEAN entails regulatory coherence to facilitate an attractive business and investment climate. This would call for greater regulatory convergence of rules, regulations, standards, etc. and much reduced trade barriers among AMSs.

All this is underpinned by a well-performing (i.e., effective and efficient) regulatory management regime. This study will focus on the development of responsive regulatory

regimes in the region. It will also guide capacity-building by sharing understanding across countries and providing evidence for ‘good practice’ based on what works while avoiding the simplistic trap of the notion of ‘best practice’. The study focuses on the elements of regulatory management systems/regimes and what are the critical elements for RM regimes to succeed in improving regulatory quality.

The study will submit its integrative report to the East Asia Summit in October 2015, preceded by submission on highlights of the study to the HLTF-EI in July 2015.

This research will have three outputs:

1. The country study will be undertaken on the following countries: Indonesia, Malaysia, Philippines, Thailand, Viet Nam, Australia, New Zealand, Japan, Korea, and a study on the experiences of Singapore and cases in India and China at the state level. The country/state studies consist of four parts: (a) Introduction and country context; (b) Evolution of the country’s regulatory management system; (c) The current state of the regulatory system; (d) The system assessment.
2. Two case studies per country on a successful regulatory improvement and non-successful regulatory change.
3. Integrative report which will synthesize the findings from the country studies, literature review, cluster analysis (by using APEC baseline study), and econometrics analysis.

The findings of the research will be on:

1. The elements of regulatory management system which generate the most value (i.e. the ones which produce a successful regulatory management system).
2. The benefits relative to the costs of different combinations of the regulatory management systems’ elements.

### **Progress of the Research**

Countries differ substantially in regulatory reform experiences and in the evolution and practice of their regulatory management systems. The experiences range from an initial focus on streamlining business regulations and reducing administrative procedures (e.g. Malaysia, Viet Nam) to major structural and regulatory reforms in response to crises or secular decline in relative standards of living (e.g. Australia, Korea, New Zealand). The approach ranges from top down mandates (e.g. Viet Nam) to initiatives that have been largely driven by the

private business sector (e.g. Philippines). The significant differences among countries in their experiences and their circumstances (e.g. levels of development, institutional capacities, political processes) mean that there is no single “magic way forward”; instead, there would be different ways forward with the paths tailored to the unique circumstances of each country.

Despite the differences in experiences and approaches, the findings have brought out a number of common characteristics of “high performance” regulatory management systems. They include:

- Strong and continuing political commitment from the top leadership
- Role of the private business sector must be managed more productively through robust partnerships with the government sector and other stakeholders; e.g., focus groups under PEMUDAH.
- Importance of managing local regulations, because ultimately all business is “local”. Vertical regulatory coherence between national and local regulations is as important as horizontal regulatory coherence among regulations of related government agencies.
- Critical role of a credible institution, which is technically competent and relatively unbiased and independent that will provide the factual basis and analysis to support decisions on specific regulatory issues.
- Importance of a relatively competent and engaged bureaucracy.
- Importance of transparency and a decision process that engenders predictability.
- In managing the flow of new regulations, what is important is the functionality of the Regulatory Improvement Agency (RIA) rather than the formalism of an RIA per se.
- Pilot projects and special zones can be used creatively to push the implementation of good regulatory practices, especially down the subnational levels; e.g., Malaysia’s focus group initiative on construction permits.

Regulatory improvement and implementation of good regulatory practices is a long journey and a dynamic process. And the impetus for regulatory reform has differed among the AMSs and other East Asian countries in the project. Regional agreements and initiatives like the ASEAN Economic Community can be used to provide impetus for starting or deepening

AMSs efforts at regulatory improvement towards a more concerted programmatic and systematic implementation of good regulatory practices in the region.

Some of the initial recommendations of the study are that ASEAN should undertake a concerted inventory of business regulations and review of such regulations –at both the national and regional levels--by each of the AMSs, together with an **agreed target** of reducing (if not eliminating) the unnecessary or overlapping regulations. The initial focus could be in the national and local regulations related to trading across borders, starting a business, getting a construction permit and enforcing contracts. It also recommends to institute a regional cooperation program on strengthening capacity of the government bureaucracies in AMSs through sharing of experiences, cross border or joint training and even curricular or specialized offering. The capacity building program is especially important in CLM countries. The deepening of linkages among civil service training institutions within ASEAN could follow from the experience between Malaysia and Singapore.

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# 3

## ASEAN Economic Community Scorecard Phase IV Study

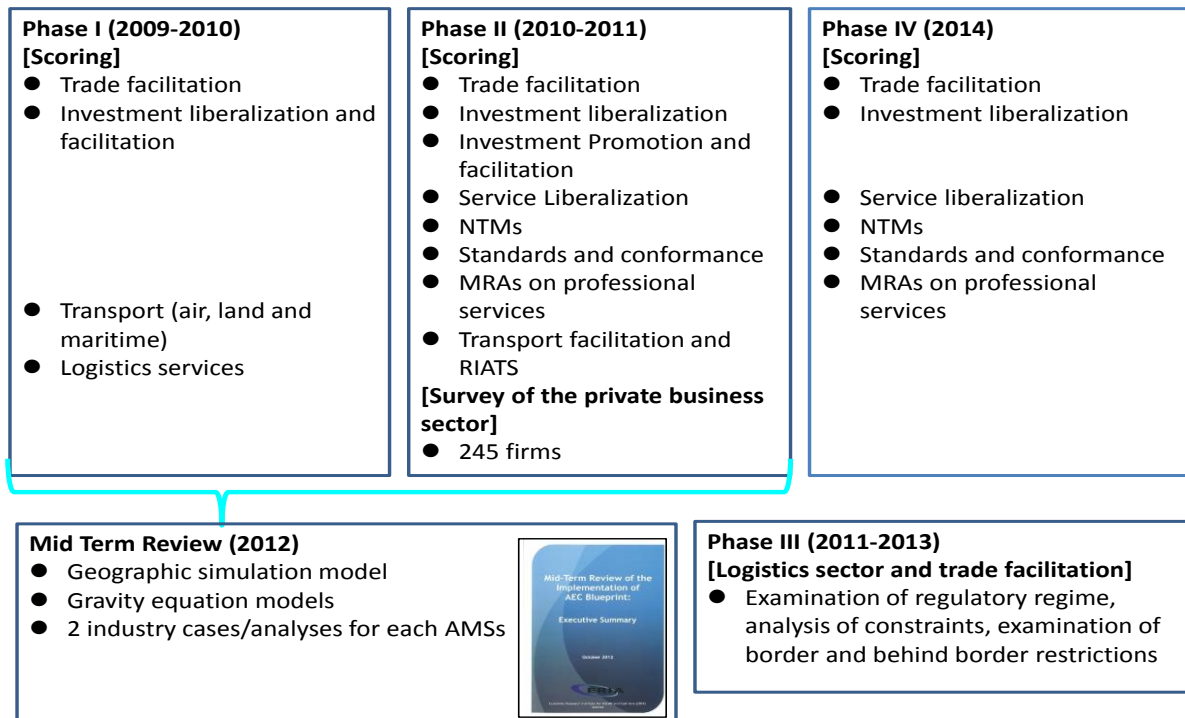
### Abstract

ERIA has been undertaking a series of studies, together with its Research Institutes Network (RIN) member institutions from the 10 ASEAN Member States and the ASEAN Secretariat, to review and assess the implementation of AEC measures. These studies are:

- AEC Scorecard Study Phase I (2009-10)
- AEC Scorecard Study Phase II (2010-2011)
- Mid-Term Review of the Implementation of the AEC Blueprint (2011-2012)
- AEC Scorecard Study Phase III (2012-2013)
- AEC Scorecard Study Phase IV (2014-2015), the current project which is the focus of this Executive Summary

ERIA also undertook a major related study on moving ASEAN and AEC forward Post 2015 titled ‘ASEAN RISING: ASEAN and AEC Beyond 2015.’

### ERIA’s Studies on the Implementation of AEC Measures



The official AEC Scorecard Reports are comprehensive compliance scorecard of all the four pillars of the AEC Blueprint 2009-2015. By design, and also resource constraints, the ERIA AEC scorecard studies focus on a selected key AEC measures in Pillar 1, and provides a more analytic assessment of the selected key AEC measures than the official AEC Scorecard.

The project AEC Scorecard Phase IV is the latest of the ERIA assessments of the AEC measures. Given particularly tight time constraint, and by agreement of the ASEAN High level Task Force on Economic Integration, the Phase IV study focused on six (6) key Pillar 1 AEC measures; namely, NTMs, trade facilitation, standards and conformance, service liberalization, investment liberalization, and MRAs on professional services and Movement of Natural Persons (MNP).

## **Major Findings and Recommendations**

### **Non-Tariff Measures and Non-Tariff Barriers**

With the near elimination of tariffs as barrier at the border to intra-ASEAN trade, the policy focus among ASEAN officials has increasingly shifted to Non-Tariff Measures (NTMs) and Non-Tariff Barriers (NTBs), which are NTMs used primarily for trade protection. It is not easy to determine an NTB because NTMs have usually non-trade protection objectives such as addressing environmental, health and safety, security or cultural considerations. At the same time, the administration and/or regulatory specification of such NTMs can be applied to support protectionist intents. Thus NTMs can actually be much more insidious trade barriers than tariffs.

AMSs vary tremendously in the incidence of “core” NTMs as well as “non-core” NTMs. The incidence and restrictiveness index in “core NTMs” is lowest among Lao PDR, Singapore, Thailand, Cambodia and the Philippines and highest in Indonesia, Malaysia and (before the currency unification) Myanmar. Lao PDR, Singapore, Cambodia and Thailand remain the lowest incidence and restrictiveness of “non-core NTMs” while the Philippines turns the third highest after Indonesia and Malaysia in the incidence and restrictiveness of “non-core NTMs”. “Core NTMs” include such measures as quantity control measures (e.g., quotas, prohibitions), price control measures and finance control measures; they tend to be most likely to be NTBs. “Non-core NTMs” consist mainly of SPS and TBT measures, which are also susceptible to protectionist use through their administration.



Based on firm responses and country reports, the study emphasizes on streamlining and simplification of permits (including import permits) and accreditation requirements as the primary recommendation to address the problems related to NTMs.

Automation of customs and permit process and the full and effective implementation and completion of National Single Window (NSW) and National Trade Repository (NTR), streamlining of procedures, harmonization of data and automated sharing of such data across agencies are some of the other felt requirements. The study recommends that such streamlining of procedures and greater coordination and consistency among agencies be undertaken as a government wide initiative, similar to Malaysia's PEMUDAH Task Force efforts at "modernizing business practices".

Other recommendations include increased transparency of NTMs and related regulations, and a continuously updated and accessible list of regulations. The study also recommends an ASEAN Directive which requires member countries to notify new NTMs to the ASEAN Secretariat and all member countries before their laws are to be enforced, to ensure the NTMs are in line with ASEAN standard/guidelines.

The study recommends to address the lack of infrastructure (internationally accepted conformity assessment bodies, e.g., testing centers, laboratories), especially in the poorer AMSs. Expedient harmonization of standards is also recommended.

### **Trade Facilitation**

AMSs are beset with very wide gaps in performance and significant challenges remain towards sufficiently well performing and efficient trade facilitation in the ASEAN.

In terms of **customs modernization**, Singapore and Malaysia were the leaders in ASEAN in 2011, followed by Indonesia and Thailand.<sup>2</sup> At the other end of the spectrum are Myanmar and Lao PDR. There have been improvements especially in Cambodia and Viet Nam, and to some extent, Myanmar. Cambodia, Lao PDR and Myanmar are all in process of accelerating the modernization of their customs.

Singapore, Malaysia, Thailand and Indonesia have virtually fully implemented the **National Single Window**, with further improvements being planned in Indonesia. The Philippines

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<sup>2</sup> Singapore and Malaysia were excluded from scoring for 2014 because they are very much the, or nearly the, global leaders

scores much lower. Both Brunei Darussalam and Vietnam are advancing in their implementation of NSW but Cambodia, Lao PDR and Myanmar are still in early stage of implementation with significant time and resource challenge with respect to the development and testing of the technical infrastructure.

The successful implementation of the scaled-down pilot project for **ASEAN Single Window** involving 7 AMSs, along with the agreement of all AMSs (through the ASW Committee) of the Protocol on the Legal Framework to implement the ASW, could allow the pilot be developed into a full-fledged ASW, ideally in 2015.

The national and ASEAN **trade repositories**, which are important mechanisms for greater transparency and predictability of the trading environment in ASEAN, are still in the process of implementation with the notable exception of Indonesia and Thailand.

The study recommends to design an **ASEAN Trade Facilitation Agreement and Action Plan 2016-2025**, as an amplification of the WTO Agreement, which would have targets and timelines to accelerate the operationalization of the National and ASEAN Trade Repositories by 2015 as targeted in ATIGA, or by 2016 at the latest. The agreement will ensure operationalization of a sustainable institutional mechanism at the national level for consultations on proposed laws and regulations. The study also recommends a government-wide initiative of **process and document simplification** and reduction as well as data harmonization in all the important government agencies related to trade. This will also help to contribute to overall regulatory improvement in the AMSs.

Further recommendations for trade facilitation include ensuring effective implementation of authorized economic operators (AEO) program, full implementation of self-certification program, strengthening border cooperation and full implementation of AFAFGIT and finally, a program of human resource and institutional capacity building at the national and regional levels in support of effective and efficient trade facilitation in AMSs and ASEAN.

### **Standards and Conformance**

There have been many improvements in reducing the technical barriers to trade through the standards and conformance initiatives in ASEAN as compared to the 2011 review. At the regional level, almost all regional obligations have been met in all sectors where applicable. At the national level, progress has also been recorded across all sectors.

In the **Cosmetic sector**, most AMSs have fully transposed the ASEAN Cosmetic Directive into applicable national regulation and have identified a test laboratory to be under the ASEAN Cosmetic Testing Laboratory Committee (ACTLC). But deficiencies remain in electronic notification, risk classification, non-compliance of ACD in terms of GMP (good manufacturing practice) by MSMEs, and inadequate knowledge of regulatory requirements of cosmetic products among SMEs. In the **Automotive sector**, most AMSs have transposed the regionally agreed upon standards, though challenges remain on technical capacity and quality infrastructure front.

In the **EEE sector**, 7 AMSs have fully transposed the ASEAN Harmonized Electrical and Electronic Equipment (EEE) Regulatory Regime (AHEEERR) into applicable national regulations, 6 AMSs have fully revised their applicable national regulations to be aligned with the ASEAN EEE MRA, with 6 AMSs having appointed their listed testing laboratories and conformity assessment bodies. For **standards harmonization**, 6 AMSs have adopted at least 80 percent of the 121 regionally agreed upon standards. For the **Medical Device** sector, the majority of member states have transposed the regionally agreed upon standards to the applicable national regulation. Similar readiness shows in **Pharmaceutical sector** in implementation of ASEAN Common Technical Requirements (ACTR) and ASEAN Common Technical Dossier (ACTD).

The **major challenges** in S & C efforts revolve around lack or inadequate technical infrastructure and capacity, such as lack of qualified testing laboratories and IT infrastructure, manpower to implement post market surveillance, and lack of competence of the accreditation body, and sometimes, a lack of capability of SMEs to meet the identified standards. Lack of clear regulatory framework in some sectors, lack of communication or consultation with stakeholders, standards development in local language are some obvious challenges that persist.

The study recommends **improving the technical capacity** of SMEs and the government officials (especially in the newer member of ASEAN), **improving the physical infrastructure**, provide more financial resources to establish qualified testing centers, and **improving the governance** to harmonize the national standards with regional/international standards.

## Service Liberalization

The study estimated the liberalization rate of commitments in the ASEAN Framework Agreement on Services (AFAS), comparing commitments in AFAS 7 and AFAS 8. It found that without the flexibility clause, the overall liberalization rate in AFAS barely improved from AFAS 7 to AFAS 8; i.e., from 72 percent in AFAS 7 to 73 percent in AFAS 8. The liberalization rate of AFAS 8 commitments range from 50 percent for the Philippines to around 84-86 percent for Myanmar, Lao PDR, Singapore and Cambodia. A comparison between the liberalization rates with and without the 15 percent flexibility clause shows a large 14 percentage points rise in the overall liberalization rate due to the use of the flexibility clause in AFAS 8. Effectively, the improvement of the AFAS liberalization from AFAS 7 to AFAS 8 is **solely at the extensive margin and there is no significant improvement at the intensive margin** as AMSs made marked use of the flexibility clause. This finding, together with the significant delay in the signing of the AFAS 9 (and AFAS 10), suggest that it is increasingly difficult for AMSs to forge agreement(s) which will deepen service liberalization under AFAS any further.

However, a comparison of commitments with actual policy in selected service subsectors (medical services, health services, tourism, maritime services, telecommunication services, banking services, insurance services) undertaken in the study reveal that in **most of the cases, actual practice is less restrictive than commitments**. Commitments lag behind actual practice across the development spectrum. Further, the restrictions declined in both actual practice and commitments over time. However, commitments remain lagging behind actual practice, and in some cases far behind.

The study recommends that the ideal approach for AFAS moving forward is to switch to a negative list approach with clear and strict criteria on subsectors in the Reservation List, and agreed upon time table to remove the measures in the Reservation List to a desired minimum by a target year.

The second best approach for AFAS moving forward is the continuation of the current positive list approach but with additional actions in order to mimic the negative approach in terms of impact; i.e., positive list package. The study further recommends substantial reduction in the 15% flexibility rule, exhaustive policy review to ensure coherence of domestic policies and regulations in AFAS 9 and AFAS 10 (under ATISA), enhance transparency, and set time table and targets for the convergence of bound (commitment) and

applied (actual) regulations, and eventual lock in of regulatory status quo. This should be complemented with a program of regulatory improvement. **Improved domestic regulatory processes** will ensure that the AFAS process drives real reform, rather than simply improving scorecards.

### **Investment Liberalization**

Investment liberalization is central to attaining free and open investment regime in the region. It also raises further the investment attractiveness of the ASEAN region.

The Project estimated the investment liberalization rate based on the ACIA Reservation List. The liberalization rate is a weighted average of allowable foreign equity (60%) and other investment related restrictions (i.e., other market access restrictions and national treatment derogations). The results show that the liberalization rate in manufacturing (including services incidental to manufacturing) is very high among AMSs, ranging from the high 70 percent for Vietnam to more than 90 percent for most AMSs (i.e., Brunei Darussalam, Cambodia, Malaysia, Philippines, Singapore and Thailand). The liberalization rates in the agriculture, fishery and forestry sector is much more mixed, with one group of AMSs (i.e., Cambodia, Lao PDR, Myanmar and Singapore) very open to foreign investment while the other group of AMSs (Brunei Darussalam, Lao PDR, Indonesia, Philippines, Thailand and Vietnam) take a more restrictive stance.

A number of country reports under the AEC Scorecard project bring out the challenges of further investment liberalization. There are complex cultural, political and security sensitivities to foreign equity majority control in some sectors, especially in agricultural and natural resource based industries as well as in traditional industries which tend to be carved out for small domestic firms. There are likely strategic industrial, nationalist and/or developmental gap considerations against foreign control in a few manufacturing sectors in a few AMSs. At the same time, some country reports bring out that at present AMSs are giving emphasis on other factors affecting the countries' attractiveness to foreign direct investment (e.g., investment facilitation measures, infrastructure) instead of investment liberalization.

The study **recommends** that only a small number of sectors (following a commonly agreed level of disaggregation of sectors) should be set as ceiling in Component 1 of ACIA with clear criteria to be exempt from liberalization. There should be agreed upon time table and

possible formula for further investment liberalization for the sectors in Component 2 of ACIA. This would give ACIA more “teeth” in its liberalization program in the region, similar to AFAS.

Greater socialization with concerned stakeholders on the benefits of investment liberalization is recommended. Investment liberalization, especially of the “sensitive industries” would need to be undertaken in tandem with the broader strategy of improving the overall business and investment climate. A change in mindset may be important in addressing national treatment derogations of small and medium enterprises (SMEs) and increase focus on SME development with the objective of tempering the protection policies for SMEs over time.

### **MRAs on Professional Services and Movement of Natural Persons (MNP)**

In examining the implementation of the MRAs, the study focused on 3 professions; i.e., architects, engineers and nurses, due to time and resource constraints. The results show that the regional actions to be implemented are largely done; and implementation mechanisms at the national level are in place. But revision of national laws and regulations in order to align them with the regional MRAs remain. Only 5 AMSs have completed the necessary regulatory revisions (for consistency with regional MRAs) for Engineering Services and Nursing Services, while only 1 AMS has done the same for Architecture Services.

A number of AMSs have alternative mechanisms allowing the movement of the professionals (architects, engineers, nurses) such that the MRAs are perceived to offer only limited benefits to the professionals who wish to work in other AMSs. Country reports in the Project also indicate lack of incentive or interest to work abroad in some AMSs; e.g., engineers in Indonesia because the domestic demand is large and growing. Most of the actual movement of professionals in the region is as corporate employees, where the MRAs may not be that much relevant.

ASEAN is also starting to address the issue of movement of “unregulated professions” (e.g., tourism professionals) for which the differences in legal and education systems matter much less than regulated professions. It will set regional standards and elevate the quality of local professions by implementing collaborative training / education programs resulting in higher quality of local services providers. It would be worthwhile for ASEAN to undertake MRAs similar to the MRAs on Tourism Profession.

The analysis of the ASEAN Movement of Natural Persons (MNP) Agreement shows that despite four types of MNP, most of the AMSs commitments are focused on business visitors and intra-corporate transfers. Nonetheless, in comparison with AFAS 8, the MNP commitments are an improvement in terms of coverage of more types of natural persons and sector coverage. The initial commitments can be deepened and enlarged over time as the MNP Agreement is enhanced.

The study recommends that MRAs should cover more “unregulated professions” through a regional registration system which would bridge the information gaps between potential employers and potential employees and thus enhance the mobility of skilled labor. Other recommendations are on the MRAs of regulated professions, such as, special arrangement for visa facilitation for ASEAN MRAs (e.g., NAFTA Professional Visa), link MNP commitments with ASEAN MRAs. The two instruments should be consistent with each other, identify best practice regulations and involve all the stakeholders (i.e., including user industries) in the policy discussion. The benefits of ASEAN MNP Agreement should extend to manufacturing sectors also. The commitments of mode 3 & 4 should be synchronized and minimum standards be set. Introduction of an ASEAN Business Travel Card will enhance intra-regional economic activities.

### **Core Team for the Study**

Ponciano Intal Jr. (ERIA), Dionisius Narjoko (ERIA), Yoshifumi Fukunaga (ERIA), Philippa Dee (ANU), Made Cynthia Rini (ERIA), Rully Prassetya (ERIA).

### **Background Papers and Country Reports**

Jonathan Koh, Toh Kheng Guan, Yong Chee Tuan (BDIPSS), Chap Sotharith (CICP), Yose Rizal Damuri (CSIS), Leeber Leebeuapao and Amphaphone Sayasenh (NERI), Shankaran Nambiar (MIER), Mya Thandar (YUE), G. Llanto, R. Serafica, E. Medalla, K. Ortiz, K. Detros, F. Del Prado, M. Mantaring, V. Ulep, D. Ortiz, P. Padronia, and A. Maddawin (PIDS), Hank Lim (team leader), Bernard Aw and Loke How Yeong (SIIA), Saowaruj Rattanakhamfu, Sumet Ongkittikul, Nutthawut Laksanapunyakul, Nichamon Thongpat, and Natcha O-Charoen (TDRI), Vo Tri Thanh, Tran Binh Minh, Nguyen Anh Duong, Trinh Quang Long, and Dinh Thu Hang (CIEM).

# 4

## **Comprehensive Asia Development Plan 2.0**

### **Abstract**

The Comprehensive Asia Development Plan (CADP) was originally formulated by ERIA in 2010 in response to the request made by the EAS leaders in 2009. The CADP provides a grand spatial design of economic infrastructure and industrial placement in East Asia. The plan covers both deepening of economic integration and narrowing development gaps, while presenting a comprehensive list of projects for logistics and infrastructure which should be implemented to realize both simultaneously.

Since the formulation of the CADP, substantial progress has been made in infrastructure developments and economic integration in ASEAN and East Asia in preparation for the AEC in 2015. As a result, even less industrialized countries such as Cambodia, Lao PDR, and Myanmar have begun participating into international production networks for middle and high-tech manufacturing products. ERIA has taken up this research project to review the progress of economic development achieved by ASEAN and East Asia since 2010 when the CADP was launched, and to revise the CADP to upgrade the spatial design of economic infrastructure and industrial placement.

The initiation of this research project was welcomed by the Economic Ministers at the 2nd EAS Economic Ministers Meeting in August, 2014 in Nay Pyi Taw.

### **Expected Outcomes**

The research will aim to create a conceptual framework and assessment of industrialization and soft & hard infrastructure development in ASEAN and East Asia. It will combine the original research from CADP and materials from other ERIA research projects including Industrial Cluster Project, and put in place a CADP 2.0 (the revised version of the CADP).

The study is in progress and is expected to be completed in 2016.

### **Contributors**

Fukunari Kimura (ERIA), Yasushi Ueki (ERIA) and other ERIA researchers and external experts including IDE-GSM team.



# 5

## **Trade Policy Change and Firm Adjustment: A Search for the Underlying Mechanisms**

### **Abstract**

Recent literature on heterogeneous firms and trade have emphasized on new mechanisms through which changes in trade policy (trade liberalization) increase aggregate productivity and welfare, namely: (1) allocative efficiency gains associated with shifting labor and capital out of small, less-productive firms into large, more-productive firms, and (2) productive efficiency gains associated with trade-induced innovation. A growing body of empirical studies utilizing firm, or plant-level micro data provide evidence in support of these theoretical predictions. While this development has certainly revolutionized the view on how an economy responds to trade and trade policy changes, it is also true that there would still be only a partial understanding, in particular, of how trade policy changes affect aggregate productivity and welfare, and of the mechanisms through which the impacts are realized. Better understanding of the mechanisms is likely to be very important from a policy perspective.

Against this backdrop, the ERIA Microdata Project for Fiscal Year 2014, which is the seventh in the series of Microdata study, aims to empirically examine the effect of trade policy changes on aggregate productivity and welfare and, more importantly, discern the mechanisms in operation through which the effects are realized. The study particularly focuses on clarifying various mechanisms through which trade policy changes affect welfare gains from trade. Depending on the country context, it is important to focus on a particular mechanism put forward by existing literature and examine whether and why (or why not) that particular mechanism works. However, it is expected that this project will uncover new mechanisms through which an economy responds to trade policy changes.

The studies conducted in this project utilize micro data (i.e., firm, plant, or product-level datasets) and conduct a publication-quality empirical study complemented with descriptive analyses.

## **Major Findings and Recommendations**

The studies reveal many interesting findings. For example, a study on Indonesian manufacturing examine the effects of tariff reduction on firms' quality upgrading by employing Indonesian plant-product-level panel dataset, matched with plant-level dataset. This study specifically explores the effects of reduction in output tariffs and input tariffs separately. It finds that reduction in output tariffs does not affect firms' quality upgrading, but reduction in input tariffs did indeed improve the quality upgrading in general. This is especially seen in import firms, as is consistent with the fact that the source of such boosting is to import more foreign inputs with high quality.

For policy makers, these findings underline the importance of continuing the efforts in trade liberalization. The detail of the study also suggest the importance of conducting trade liberalization in tandem with investment liberalization because the underlying mechanism for the improvement in technology upgrading is productivity spillover from firms with foreign ownership or local firms which installed machineries with high technology content.

The study using Thai plant-level manufacturing data highlights the important role of trade policy in promoting firms' productivity. Firms operating in more liberal trade policy environment (measured by the lower effective rate of protection) generally have higher productivity. The effects of input and output tariffs on productivity are found differently from each other so that decomposing ERP in the empirical analysis is more preferable. Nonetheless, lowering input tariff would have at least two effects running in opposite. On the one hand, lowering input tariff could enhance firms' productivity as it allow firms to access higher quality foreign inputs and benefit from learning effects from the foreign technology embodied in them. This would positively affect firms' productivity as found in the previous studies. What is new in this study and different from other studies is that lowering input tariff could increase the effective rate of protection granted toward finished products and negatively affect firms' productivity. This is highly relevant for policy making in developing countries whose trade policy reform process overemphasizes input tariff reduction while leaving output tariff untouched. A key policy inference is that while input and output tariffs could work differently on promoting firms' productivity, trade policy reform process should take both input and output tariffs into consideration to ensure that trade is actually liberalized; otherwise, this could retard productivity improvement.

The study using Japanese case study investigate how real effective exchange rate (REER) uncertainty affects firms' research and development (R&D) investment, using the firm-level panel data for the Japanese manufacturing firms for the period 1994-2011. The results show that firms more exposed to REER uncertainty are less responsive to changes in demand conditions. Uncertainty increases real option values making firms more cautious when investing because high uncertainty increases the chances of making a costly mistake. The study thus find evidence of the caution effect of uncertainty. The caution effect also increases the persistence of R&D, implying that R&D investment does not increase much even though firms are in good demand conditions. In terms of policy, it is important for governments, including central banks, to maintain a robust macroeconomic situation because this study shows that reduction in REER uncertainty could stimulate R&D investment for firms which are more exposed to international competition. This policy approach, however, needs to be complement with an effective incentive system to stimulate R&D investment.

**Project leader:** Dr. Chin Hee Hahn and Dr. Dionisius Narjoko

# 6

## Non-Tariff Measures in ASEAN

In Progress: To be completed by September 2016

### Abstract

With tariffs constrained by the WTO disciplines, it is expected to see an increasing number of non-tariff measures (NTMs) designed to protect domestic firms and industries. This trend is quite feasible in ASEAN, one of the fastest growing regions in terms of growth in economy and trade

Non-tariff measures (NTMs) in general are defined as policy measures, other than ordinary customs tariffs, that can have an economic effect on international trade in goods, changing the quantities traded, or prices, or both (UNCTAD, 2013). The number of NTMs recorded by the Global Trade Alert, a think tank, rose substantially between 2008 and 2011. However, the increase in the number of NTMs across the globe is not necessarily a bad sign for the economy. As consumer wealth rises around the world, the demands on governments for health, safety and environmental protection rise as well.

In the context of developing countries, many of them have greatly benefited from their integration in the global economy through international trade in goods and services. In the past, developing countries' integration in international markets was made possible by appropriate conducive policies such as tariff liberalisation, as well as initiatives related to trade facilitation and aid for trade. Today, deeper integration increasingly requires policy responses to various forms of complex trade-related regional economic integration. The rising specialization and fragmentation of production has led increasingly to trade in intermediate goods and in particular to regional production networks.

In the case of ASEAN, however, the latest official data on NTMs by HS-4 digit for ASEAN countries are only available since 2009, as released by the ASEAN Secretariat. A number of surveys have been conducted to fill the gap, but more work is needed. In this context, this study brings a strong multi-agency collaboration between ERIA and UNCTAD supported by experts on NTMs to: (i) collect, validate and classify NTMs data from official sources issued by governments; (ii) improve general understanding of these measures and their impact on

world trade; and (iii) provide insights on policy recommendations for streamlining NTMs and trade regulation reforms.

Once the NTM data are collected according to the MAST NTM classification and UNCTAD's NTM data collection approach, analyses can be prepared and policy options can be devised to make appropriate assessment of the trade and development impacts of such barriers to trade.

### **Objectives**

The project aims to contribute to developing export capacities by improving NTM transparency and providing trading partners with access to NTMs related information.

The value added of this project is to provide analytical exercises of impact assessment analyses of trade related reforms. This will be done by providing reliable and up-to-date NTMs' information, conducting rigorous analyses on NTMs as to how these will affect trade policy and overall trade performances, comparing NTMs in ASEAN region to the other regions, and providing inputs in streamlining NTMs in this region.

### **Outputs**

Phase I (January – September 2015): NTM Database Development

Output: NTM Database which will be made publicly available

Team: ERIA-UNCTAD-National teams (10 ASEAN countries)

Phase II (September 2015 – September 2015): Analyses on NTMs in ASEAN

Output: A report which consists of 8 Chapters, 8 ERIA Discussion Paper

Team: ERIA-UNCTAD-Economists (Olivier Cadot, Lili Yan Ing, Shujiro Urata, Ralf Peters, Santiago Cordoba, Ken Itakura, and others)

**Coordinators:** Lili Yan Ing and Shujiro Urata

# 7

## **Regional Comprehensive Economic Partnership**

### **In Progress**

#### **Abstract**

Regional Comprehensive Economic Partnership (RCEP) is a critical element in deepening regional integration in East Asia and Pacific.

RCEP takes initiatives on regional economic integration in East Asia to a higher level. In contrast to the ASEAN+1 FTAs where individual ASEAN member states (AMSs) had essentially bilateral commitments with individual dialogue partners of ASEAN, AMSs would likely need to have common commitments vis-à-vis the partners (with perhaps a few exceptions) under RCEP. Second, the commitments of the dialogue partners need to be common commitments congruent with those of the AMSs. Third, the commitments under RCEP need to be substantially better than those under the ASEAN+1 FTAs; in short, RCEP should not be merely a consolidation of the ASEAN+1 FTA commitments for the simple reason that mere consolidation is only feasible at the lowest common denominator that delivers far less than a number of the ASEAN+1 FTAs. Thus, RCEP would need to be a high quality agreement in order for it to be credible and worthy of the resources and time expended for the negotiations and related activities to ensure a successful conclusion of RCEP. Moreover, given that RCEP effectively includes an implicit FTA agreement among China, Japan and South Korea which results in trade and investment diversion from ASEAN as compared to the ASEAN+1 FTAs, only deeper facilitation and liberalization commitments would provide additional benefits to ASEAN Member States as compared to the current ASEAN+1 FTAs.

In order to strengthen the ongoing negotiations, the current study on RCEP will be providing inputs to negotiators on related issues. The study will consist of the following 10 chapters and will also result in 10 ERIA discussion papers.

1. How Restrictive Are ASEAN's Rules of Origin (Olivier Cadot and Lili Yan Ing)
2. The Impact of ASEAN+1 FTAs on ASEAN's Trade (Misa Okabe)
3. The Use of FTAs in Thailand (Archanun Koophaiboon)
4. The Use of ASEAN+1 FTAs in Korea (Inkyo Cheong)

5. Trade in Services: An analysis of liberalisation in commitments in AFAS and ASEAN+1 FTAs (Hikari Ishido)
6. A Mapping Study on ACIA and ASEAN+1 Investment Agreement (James Julianto)
7. An Analysis on Liberalisation in ACIA (Nanda Nuridzki)
8. A Mapping Study on Rules of Origin of ASEAN+1 FTAs (Erlinda Medalla)
9. The Impacts of ASEAN+1 FTAs on Trade and Economic Welfare (Ken Itakura)
10. The Impact of Service Liberalisation on Productivity (Shandre Tavangelu)

# 8

## **ASEAN+1 FTA: The Use of FTAs in ASEAN**

In Progress: To be completed by June 2015

### **Abstract**

Economic Research Institute for ASEAN and East Asia (ERIA) in collaboration with ASEAN Business Advisory Council (ASEAN BAC) and national think tanks conducted surveys on the usage of free trade agreements (FTAs) by the private sector. The surveys cover 630 exporting or importing manufacturing firms and 182 services firms that use imported goods in their business operation across ASEAN countries. The surveys were complemented by interviews and focus group discussions with firms, business associations, chambers of commerce and government officials. Considering the relatively small number of manufacturing and services firms in Brunei, focus group discussions were organised instead of surveys. The surveys started in April 2013 and was conducted throughout August 2013.

### **Key Findings**

The survey and focus group discussion findings reveal a moderate usage of FTAs in ASEAN. In the manufacturing sector, ASEAN Free Trade Agreement (AFTA) has the highest usage of 32% for exports, while ASEAN China Free Trade Agreement (ACFTA) has the highest usage of 33% for imports. In the services sector, AFTA has the highest usage of 36% for imports. This translates to an overall relatively low usage of FTAs, and the main reasons are twofold:

1. Small Benefit Margins of FTAs:
  - (a) Small differences between applied most favoured nations (MFN) tariff rates and preferential tariff rates. Moreover, as tariff rates are getting lower, the number of non-tariff measures (NTMs) is perceived to be on the increase.
  - (b) While the official costs of obtaining an FTA certificate of origin (COO) are perceived to be reasonable, the procedure to obtain COOs is perceived to be quite cumbersome
2. Limited information about FTAs.



## **Key Recommendations**

Based on the survey findings, focus group discussions, and discussions among ERIA, national think tanks and ASEAN BAC, the following quick win actions to increase the use of FTAs by the private sector are proposed:

1. Raise Benefit Margins of FTAs:
    - a. – Set a motivating yet feasible level of tariff elimination
    - Design a mechanism to ensure the lowest tariff rates applied
    - Set up country-level regulatory-oversight agencies to carry out NTM reviews
  - b. Adopt a common rules of origin (ROO)
- 
2. Improve the quality of government websites and help desks; raise the knowledge and skills of officials responsible for implementing FTAs; and increase the use of other means of communication, apart from government websites (e.g. mobile phones) to disseminate the information about FTAs.

In conclusion, businesses indicate that they will be better off with FTA preferential tariffs than without. However, it is for the governments, in collaboration with chambers of commerce and business associations, to increase benefits of FTAs for, and to increase the use of FTAs by the private sector.

## **Outputs**

10 country reports on the use of FTAs by firms in ASEAN countries

2 reports on the use of FTAs by firms in the manufacturing and services sector

**Coordinators:** Lili Yan Ing and Yoshifumi Fukunaga

# 9

## **Economic and Technical Cooperation in Regional Comprehensive Economic Partnership**

### **Abstract**

This study presents information and options aimed at assisting the Economic and Technical Cooperation (ETC) Working Group (ETCWG) of the Regional Comprehensive Economic Partnership (RCEP) in advising on the structure and financing of ETC activities to support implementation of the RCEP. The aim of this study is to assist the ETCWG under the RCEP to plan for providing economic and technical cooperation (ETC). The study addresses the issue of identifying relevant RCEP related development gaps and capacity-building needs (especially the capacity needed to help reduce development gaps). It maps the existing ETC programs, activities, and implementation mechanisms under ASEAN+1 FTA framework, as well as in other regional cooperation programmes, and recommends the activities, governance structure and financial mechanisms for undertaking the ETC plan for successful implementation of RCEP.

Anticipated RCEP commitments are expected to stimulate improvements in institutional capacity and economic governance in the region, thereby stimulating increased and more equitable investment, employment, and living standards in the region. ETC among the RCEP countries is considered as the effective tool for maximizing mutual benefits from RCEP implementation.

### **Major Findings and Recommendations**

Considerable RCEP-related ETC support is already being provided nationally and regionally, including direct support to the ASEAN Secretariat (ASEC) and the ASEAN+1 FTAs. It is important to learn from this experience. Some countries struggle to effectively utilise ETC resources because of limited capacity. Thus, it will be important to minimize duplication with bilateral development programs, and other regional programs.

The study recognizes that potential comparative advantage of RCEP ETC support is most likely to be in activities directly linked to RCEP implementation and that ETC can play a catalytic role in accelerating improvements in regional institutional capacity and economic

governance. It identifies some priority areas for cooperation among countries which will help in:

- Building awareness and support for RCEP.
- Facilitating technical WG efforts to identify and address bottlenecks in implementing RCEP commitments, and share regional experiences and good practices related to implementing RCEP commitments.
- Facilitating the institution building and policy reform processes (especially in the CLMV) that will be needed to help implement RCEP objectives, and
- Monitoring and evaluating RCEP implementation and periodically review ETC needs and priorities.

RCEP ETC support would be especially useful to help lower income RCEP countries to:

- Analyse the benefits and costs of RCEP reforms, and support to disseminate study results to help address potential political economy concerns.
- Formulate and implement priority policy and institutional reforms directly related to RCEP implementation.

The study addresses the institutional issues for implementation of RCEP, providing a multi-option matrix of secretarial and financial frameworks. It also provides the members with techniques, both quantitative and qualitative, for monitoring and evaluation of RCEP implementation.

**Study Team:** Anita Prakash (ERIA), Raymond Mallon (Australia) and Donny Erytasha (Indonesia)

# 10

## Trade in Value Added of Southeast Asia

In Progress: To be completed by December 2015

### Abstract

East Asia Pacific (EAP) economic growth has outperformed the world growth for the last two decades, except from 1997 to 1999 due to the Asian Financial Crisis. Most East Asian economies are now well-positioned to weather any renewed volatility. The drivers of global economic growth are shifting towards East Asia. The Emerging East Asian economies (EEA) are well-positioned to benefit from this growing power. The emerging Southeast Asian Economies experienced strong growth in the last two decades and are estimated to be on a par with China.

After a decade of China's membership of the WTO, no one can afford not to trade with China. Nevertheless, export performance of China was anemic in 2011 and has weakened further in subsequent years. China's growth pattern is changing as it moves up the income stages, and is likely to rely more on consumption and less on investment and exports, and more on services and less on industry. In this scenario, opportunities emerge for Southeast Asia to expand their economies through trade and investment. Asia accounts for more than 50% of the world's automobile production, 62% of liquid display screens, 86% of smartphones and 100% of digital cameras (Hiratsuka, 2013). Much of this production is based in production networks. Imports are largely used as inputs for exports. Many countries are engaged directly and indirectly in producing final products.

The study aims to provide a framework on globalization's second unbundling related to trade and industrialization in Southeast Asia. The study will cover the following issues:

- How does the slowdown in trade in China affect Southeast Asian trade?
- How does Southeast Asia manage to level up its product value added and improve trade competitiveness?

### Objectives

The study will aim to provide:

- rigorous analyses on Southeast Asia's value added and trade competitiveness

- rigorous analyses on product development, product variety, quality upgrading, export market concentration and new market creation of its manufactured export products

### **Expected Policy Contributions:**

- To provide inputs to improve Southeast Asia's value added and trade competitiveness
- To provide lessons learned from building or joining production network

### **Outputs**

The study consists of 12 chapters which will be published as a book:

1. Building Production Networks in East Asia: Now and Then – Fukunari Kimura
2. Levelling up value added of Southeast Asia's products – Dr Javier, OECD
3. The impacts of the processed trade of China on Southeast Asia's trade – Miaojie Yu and Lili Yan Ing
4. The impacts of trade, industrial and investment policies in levelling up value added and improving competitiveness in Southeast Asia – Hall Hill
5. Levelling up value added in Southeast Asia: An analysis on Labour market flexibility and innovation - Xiao Jiang and I Kadek Sutrisna Artha

### **Country Analyses**

6. Indonesia – Lili Yan Ing, Chandra Triputra
7. Malaysia - Tham Siew Yean
8. Singapore - Toh Mun Heng
9. The Philippines - Rafaelita Aldaba
10. Thailand - Patarapong Intarakumnerd  
Vietnam - Vo Thri Thanh and Anh Duong
11. Developing domestic and export markets and levelling up trade in value added: Lessons learned - Ben Shepard
12. The way ahead – Fukunari Kimura

**Coordinators:** Lili Yan Ing and Fukunari Kimura

# 11

## **Developing the Automobile and Auto-parts Manufacturing Industry in ASEAN: Using AEC 2015**

In Progress

### **Abstract**

The ERIA research project on this subject in FY 2013 entitled “Contribution of Automobile and Auto-parts Manufacturing Industries in ASEAN and India to Regional Integration” found that ASEAN Economic Community 2015 (AEC 2015) is leading into two distinct methods of automobile production within the ASEAN region, namely, fully integrated and completely knocked-down (CKD) kind. Although Japanese assemblers have developed the fully integrated production system in major automobile production sites like China and Thailand, there are companies such as Tan Chong (Malaysia) and Truong Hai (Vietnam) which have started production in CKD in CLMV countries. Completely knock-down type of production system could bring new opportunities for developing countries to develop the automobile industry.

This research project investigates how AEC 2015 causes or induces the emergence of these two distinct types of automobile production. Moreover, the question arises whether the CKD type production is only a temporary phenomenon or whether it will continue due to market liberalization under AEC 2015. A related issue is if CKD assembly is a viable business model for specialized niche producers.

The study team will interview companies and categorize them as either (1) fully integrated type such as Toyota and Honda or (2) CKD type such as Tan Chong and Truong Hai, in order to understand their utilization of provisions under AEC 2015.

The research team is composed of a mix of sectoral experts from Waseda University and researchers from governmental research institutes in order to get a better understanding and future perspective of the industry, and derive policy implications from the perspective of ASEAN member states.

## **Contributors**

Hidetoshi Nishimura (ERIA), Nobuhiko Fuwa, Hideo Kobayashi, Mitsuhide Shiraki, Yingshan Jin, Martin Schroeder (all from Waseda University), Maureen Ane Duran Rosellon (PIDS), Fatima Lourdes E. del Prado (PIDS), Truong Thi Chi Binh (Institute for Industry Policy and Strategy, MOIT, Vietnam), Nguyen Manh Linh (Institute for Industry Policy and Strategy, MOIT, Vietnam)

# 12

## **FTAs and Spatial Extension of Production Networks in East Asia: Highlighting the Complementary Relationship between Thailand and Neighboring Economies**

### **Abstract**

The research project consists of three supporting research projects: Prospects for Forming Mekong Business Area: Thai Plus One Corporate Strategy and Its Supporting Policies (“Thai Plus One”); Labor Migration in Thailand and Neighboring Countries: Situation and Challenges of the Migrant Workers (“Migration”); and Comprehensive Analysis on Free Trade Agreements in East Asia (“FTA”).

**Prospects for Forming Mekong Business Area: Thai Plus One Corporate Strategy and Its Supporting Policies (“Thai Plus One”):** The research project aims to understand why MNCs and domestic companies in Thailand invest in the CLMV countries, which areas (capital cities or border areas) are chosen as investment location, and what kinds of benefits the companies can enjoy. The study also focuses on supporting policies for companies including border area development strategies in Thailand, and feasibilities to apply public-private partnership (PPP) schemes for cross-border infrastructure development. The study shows that lower wages are the major reasons for these four countries to attract FDIs. As for the location, capital cities are important for domestic-market-oriented companies while border areas with Thailand are mostly for export-oriented companies. Regarding the supporting policies, Thai government plans to adopt a policy to permit to hire commuting migrant workers but the laws on the PPP have not yet been developed in Thailand.

**Labor Migration in Thailand and Neighboring Countries: Situation and Challenges of the Migrant Workers (“Migration”):** Thailand is the hub of the Mekong sub-region and attracts migrant workers from Cambodia, Laos, and Myanmar (CLM). Labor shortages, mismatch in the labor market in Thailand, and the economic development gap between Thailand and the CLM countries is pulling CLM workers into Thailand. The long land border and poor governance makes it difficult to manage migrant workers effectively, resulting in irregular influx of migrant workers. This research project aimed to confirm the current socio-economic status of the migrant workers in Thailand, the workers’ recruitment process, socio-



economic impact of remittances, and the migration policy, mainly focusing on Cambodian migrant workers and also referring to Myanmar migrant workers.

**Comprehensive Analysis on Free Trade Agreements in East Asia (“FTA”):** The aim of this project is threefold. First, it compares the magnitude of trade creation effects through tariff reduction with that of trade creation effects through the reduction of non-tariff barriers (NTBs). Second, it examines the benefits accruing to exporters from FTA use, specifically on how much change occurs in tariff-exclusive import prices before and after exporters’ FTA utilization. Behind this analysis is the fact that while importers enjoy “visible” benefits of saving tariff payments from the use of FTA schemes, the benefits to the exporters are unclear in spite of carrying out necessary documentation work. Third, the study quantifies documentation costs for FTA use. To examine these, it employs two kinds of dataset. One is transaction-level import data in Thailand during 2007-2011. This dataset helps to identify not only import firms, date, export countries, and commodity but also tariff schemes, including most favored nation (MFN) rates or FTA rates. The other is tariff-line level trade data in the world during 2007-2011. This dataset cannot identify tariff schemes but covers trade among a large number of countries. These two datasets are complimentary in terms of depth and coverage.

### **Major Findings and Policy Recommendations**

**“Thai Plus One”:** Explaining the reasons for FDI, MNCs and Thai domestic companies clearly enumerate new marketing opportunities for Vietnam and Myanmar, in addition to lower wages of all the CLMV countries. Among Japanese companies, fragmentation type investments in Lao PDR and Cambodia is a major reason. Thai domestic companies can be divided into two types: big companies expanding their market in order to prepare for the oncoming of the aged society in 2025, while smaller companies in the labor-intensive industries establish production bases in search of lower wages. The Thai government needs to implement structural reform of service sectors so as to reduce the higher input cost for manufacturing sector and promote the sustainable development of neighboring countries. In the CLMV countries, the improvements of infrastructure such as electricity and road is highly demanded by the investors. Mutual benefits between Thailand and the neighboring countries should be arranged for border area development. Finally, cross-border infrastructure projects have to be taken up after examining the profit and risk sharing, on a case to case basis, and related PPP laws in the CLMV countries.

**“Migration”.** For Mekong's region-wide development, it is important to protect workers effectively by promoting the official route of recruitment, reducing the administration cost and to encourage the efficient use of the remittance. Furthermore, a long-term policy to send and receive migrant workers which is compatible with the domestic industrial development policy and the domestic labor market in relevant countries is necessary.

**“FTA”.** First, there is a significantly positive trade creation effect due to tariff reduction, while weak effects are detected from NTB removal. Therefore, although recent RTAs tend to include provisions for various policy modes related to NTBs, the reduction of tariffs is still a core part of RTAs, in terms of trade creation effects. Second, the use of FTA schemes raises export prices, although the magnitude of their rise differs according to the extent of product differentiation, income levels of export/import countries, and import firms' sizes. It is useful for policy makers to encourage exporters to use FTA schemes by introducing or disseminating the existence of these benefits for exporters. Third, documentation costs for FTA use are estimated to be around two thousand US dollars in the case of exporting from China and around one thousand US dollars in the case of exporting from Korea, in terms of median values. To further enhance firms' FTA utilization, it is important for policy makers to reduce these costs.

### **Contributors to Research**

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# 13

## Mekong-India Economic Corridor as a Land Bridge

In Progress

### Abstract

Transport facilitation is no doubt one of the essential measures for ASEAN to deepen the economic integration, to strengthen ASEAN's competitiveness and to enhance people-to-people connectivity. ASEAN Economic Community (AEC) Blueprint, Master Plan on ASEAN Connectivity and Brunei Action Plan clearly emphasized the importance of transport facilitation and specified the prioritized transport facilitation measures (ASEAN 2009, 2010a and 2010b). ASEAN Member States have signed three framework agreements on transport facilitation toward full operationalization by 2015. The mid-term review of AEC Blueprint examined the implementation status of the measures and discussed the difficulties in implementation.

While AEC measures have not been implemented in full, production networks are expanding and becoming more sophisticated using various new and existing trade and transport facilitation measures. In Vientiane, Lao PDR and Bavet, Cambodia, Thai and Vietnamese trucks can pick up the cargo from the industrial estates in Lao/Cambodian side to ship the products to Thailand and Vietnam, respectively. In Kalimantan Island, there are transit-bus running between Indonesia, Malaysia and Indonesia. The Mekong region is a forerunner of ASEAN in terms of transport facilitation. There are bilateral MoUs between countries and the cross-border transport agreement (CBTA) led by ADB.

Simulation analysis by IDE/ERIA-GSM revealed that development of the Mekong-India Economic Corridor (MIEC) had a larger impact on the Mekong region than the other GMS economic corridors. While MIEC is promising, there are two missing links in MIEC: (1) Dawei deep seaport and link between Dawei and Kanchanaburi and (2) Transit transport between Bangkok and Ho Chi Minh City. IDE/ERIA-GSM suggested that firms will want to utilize those links and they will boost the economic activities in the Mekong region.

Under the circumstances, there are following research questions:

- What are the real bottlenecks in the missing link of current ASEAN connectivity, among several soft and hard infrastructure issues, e.g., what are the differences between Bangkok-Ho Chi Minh City transit route and Bangkok-Hanoi route?
- Bilateral MoUs, instead of the CBTA, have been operated at most of the borders in the Mekong Region. The difference and the gap between the MoUs and the CBTA can affect the transport facilitation during the transition period. What are the gaps between them?
- What transit transport measures should we implement for the Dawei-Kanchanaburi route for full-fledged utilization of MIEC?
- What are differences between the East-West Economic Corridor (EWEC) and MIEC? How can we maximize the potential benefit of EWEC?
- Will coming AEC transport measures help us solve the issues? What are the potential gains of AEC transport measures, when we consider existing domestic regulations, bilateral MoUs and sub-regional agreements? Are the potential gains significant, or marginal? Will AEC measures benefit small and medium enterprises or just empower large multinationals? How do AEC measures affect domestic logistics firms? And how do AEC measures contribute to reformation of production networks?
- What areas should we address after we have AEC measures?

These questions have been not well addressed compared with its importance. For example, Bangkok-Hanoi transit route was examined by Ishida and Isono (2012) while Bangkok-Ho Chi Minh City transit route has not been compared with the Bangkok-Hanoi route.

In order to identify the additional gains from AEC measures to existing schemes and to specify the difficulties in implementation of the measures, we need to conduct comprehensive stocktaking among domestic regulations, bilateral MoUs, sub-regional initiatives, and possible AEC measures. This study will cover both passenger cars and freight transport.

### **Expected Deliverables from Project**

Report to be published by ERIA and submitted to ASEAN Transport Facilitation Working Group.

## **Contributors to the Project**

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**NARROWING  
DEVELOPMENT  
GAPS**

# 14

## **ASEAN Public Private Partnership (PPP) Guidelines**

### **Abstract**

In FY 2013, The ASEAN Coordinating Committee on Connectivity (ACCC) mandated a task to ERIA to conduct a study on Financing Modality of ASEAN Connectivity. The task has been accomplished and there had been subsequent workshops and meetings related to the study results. One of important implications of the study is the need to follow up the concept with actions. There are two initiatives withdrawn from the study, which got supports from the member countries, namely: (i) setting up of PPP Forum and (ii) developing PPP Guidelines.

PPP Guidelines is put in place with the awareness to recognize the unique features of AMS, including their differences on PPP Policy maturity and stage of development. Thus, the PPP guidelines should be based on general principles of PPP and open for innovative approaches to maximize potentials without jeopardizing the economy. The draft of PPP Guidelines will be provided to the stakeholders, namely The ACCC and related technical officers in charge of PPP in their home countries. Since the main players of PPP in the region are expected to be present in PPP Forum, hence PPP Guidelines will be communicated and discussed in the Forum. The draft will be improved to incorporate the inputs and feedbacks from the Forum.

### **Major Findings and Policy Recommendations**

The ASEAN PPP Guidelines is designed to cater to both international standards and typical emerging countries' needs. It provides a common set of policy principles for ASEAN member countries and a broad framework based on best practice standards. The Guidelines support the ASEAN Member States which are developing their PPP by providing robust principles to ensure consistency, confidence and certainty to foreign private investors, to conduct and facilitate cross-border PPP projects, and to enhance greater connectivity through harmonisation of member's regulatory requirements.

The Guidelines offer a broad scope of PPP from initial, intermediate to mature stages of PPP Policy. Its outline is arranged from the concept of infrastructure investment to the implementation phase, according to practices. It has flexibilities for early adopters of PPP,



and features Lite PPP (as alternative of Full PPP) and Cross-border PPP (with example). The Guidelines also provides links to other resources especially on technical aspect.

The book of ASEAN PPP Guidelines was launched officially in Manila on 16 December 2014.

Link in ERIA Website: [http://www.eria.org/publications/key\\_reports/asean-ppp-guidelines.html](http://www.eria.org/publications/key_reports/asean-ppp-guidelines.html)

## **Contributors to Research**

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Inputs and feedback were also received PPP-related institutions in ASEAN Member States, especially PPP Center of the Philippines, PT SMI and PT IIGF of Indonesia, The ACCC, The World Bank PPP Group in Singapore, JBIC Representative Office in Singapore, METI (Japan and Singapore), and TDRI (Bangkok).

# 15

## **Firm-to-Firm Matching with Technology Transfers in the Local and Global Economy: Findings from Southeast Asia**

### **Abstract**

This research project focuses on conditions for realizing inter-firm vertical knowledge transfer. The research also looks at obstacles to vertical knowledge transfer, which are important in formulating the policy implications.

The research takes two approaches. First is the case study on South-South FDIs and knowledge transfer within ASEAN. Whether the increasing FDIs from South triggers knowledge transfer to the AMS or not is an issue for policy makers to consider when making continuous efforts for deepening the economic integration in ASEAN and East Asia.

Second is the introduction of cooperative chain concept into the research approach. This research investigates a focal firm as a knowledge transferee from its buyer and as a knowledge transferor to its supplier. Questionnaire surveys have also been conducted to collect quantitative information to augment the results of the case studies.

### **Major Findings and Policy Recommendations**

Buyer-driven knowledge transfer triggers the formation of local knowledge transfer links along a production network that penetrates incoming new knowledge to a wider range of local suppliers.

The main motivation for firms to enter into buyer-supplier knowledge transfer relationships is to assure and enhance product quality: knowledge transferors need quality inputs to produce quality products, whereas knowledge transferees want to enhance their quality control capacity.

Knowledge transferors and transferees tend to have direct or indirect international exposures and experiences. Ensuring access to information on foreign market and technology is crucially important to realize knowledge transfer. Learning capacity of knowledge transferee is also a condition for exploiting knowledge transfer opportunities. Lack of qualified and internationally experienced managers may cause the local firms to miss opportunities for

receiving knowledge transfer. To implement knowledge transfer, firms make use of face-to-face interactions between trainers and trainees.

Liberalization policies for promoting freer flows of goods, services, investments, people, and knowledge are fundamental to facilitate buyer-supplier knowledge transfer. Undeveloped physical infrastructure, inadequate institutional infrastructure, and competitive restriction hinder smooth knowledge transfers.

Capacity building is indispensable to bring knowledge transfer relationships into production networks. Many FDI firms take up practical stopgap measures by providing training in farming and at production sites or at training facilities and corporate universities in their home countries.

Informational barriers demand public support for knowledge transfer facilitation. Lack of information on either side of knowledge transferee or transferor may cause a mismatch. Public organizations can provide local firms with market and technical information, financial assistance to participate in trade fairs and exhibitions, and partner in search and match making services.

In food-related industries, public research institutes (PRIs) can take a leading role in developing new varieties, production methods and machines, and in assuring food safety. PRIs can facilitate farmer-manufacturer linkages, and promote related industry.

### **Contributors**

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# 16

## **SME Participation in ASEAN and East Asian Regional Economic Integration**

In Progress

### **Abstract**

The economies of ASEAN and East Asia have become increasingly integrated. This process of regional economic integration has been driven by the mutually reinforcing market forces and trade agreements (regional and preferential). A major area of concern amongst policy makers has been the extent to which small and medium enterprises (SMEs) are participating and benefiting from regional economic integration. It is a valid concern given that about 95-99 percent of all firms in the region are SMEs. Furthermore, SMEs are also likely to be more resource-constrained (compared to large firms) to take advantage of the benefits from trade and investment liberalization. Despite their importance, there is currently a lack of systematic and comprehensive research on these issues.

The main goal of the proposed research project is to undertake a systematic, comprehensive and comparative analysis of SME participation in ASEAN and East Asian regional economic integration. The key research questions for the project include the following:

- What is the state of SMEs participation in regional trade, production networks, and investment activities?
- What are the enabling factors and obstacles to SME participation in regional trade, production networks, and investment activities?
- How have regional and preferential trade agreements affected SMEs' activities and performance?
- What is the nature of multinational enterprises' engagement with host country SMEs and how are such interactions affected by regional and preferential trade agreements?
- What are the policy imperatives at national and regional level to promote active participation of SMEs in regional trade, production networks, and investment?

### **Expected Deliverables from Project**

The project's output and activities will comprise:

- Two (2) research workshops – at Jakarta (ERIA) and Singapore (ISEAS)
- Twelve (12) working papers and one synthesis paper – to be published as ERIA-ISEAS working papers
- One ISEAS perspective article (synthesis of findings and policy implications)
- One special issue journal
- One book manuscript (to be published by ISEAS)

### **Project leaders and Members (Tentative)**

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# 17

## Industrial Cluster in East Asia

### Abstract

This research project builds upon the study on a region-wide industrial cluster development policy, which was tasked out by the East Asia Summit Economic Ministers in 2013. Additionally, the research project is expected to contribute to the formation of Mekong Industry Development Vision that was tasked out by Mekong-Japan Economic Ministers Meeting in 2013 to the AEM-METI Economic and Industrial Cooperation Committee's West-East Corridor Development Working Group (AMEICC WEC-WG).

The current research activities under this project are twofold. One is to contribute to inter-governmental meetings by presenting interim research findings. In 2014, ERIA was invited to two meetings of WEC-WG (meetings on Mekong-Japan Economic and Industrial Cooperation under WEC-WG) held in May in Bangkok and in July in Hanoi. Contributions were also made to second SEOM-EAS Consultations held in July in Yangon and Policy Workshop for ASEAN Small and Medium Enterprises Strategic Action Plan (2016-2025) held in September 2014.

The other stream of activity is for conducting research. In 2014, ERIA organized a small-scale research project titled "Geographical Simulation Analyses and Detection of Industrial Clusters in East Asia" that was undertaken by IDE-JETRO. This supporting study consists of two types of research: Geographical Simulation Analyses (GSA); and Detection of Industrial Clusters (Cluster). The GSA project provides analytical services based on the Geographical Simulation Model (GSM). The Cluster project is a pilot to develop a methodology for detecting industrial clusters with an index and maps.

The Cluster project applies the method proposed by Mori and Smith (2013) to the manufacturing clusters in Cambodia, Laos, and Thailand. Although the reasons for agglomerations cannot be identified by this method, Mori and Smith method provides a map of industrial clusters by industry, which is tested against the hypothesis of spurious clusters. Moreover, Mori and Smith method classifies industrial agglomerations into four spatial patterns using their Global Extent (GE) and Local Density (LD) indices. The study results will be useful for identifying potential locations for specific industries.

## **Expected Outcomes**

The expected research activities for this research project are threefold: simulation of industrial cluster formation by using the GSM; analysis on knowledge transfer within and between industrial districts by using questionnaire survey data; and if data is available, patent analysis by using data for an ASEAN member state.

ERIA will cooperate with IDE to update GSM's base map from 2005 to 2010. ERIA is pursuing for an agreement with BPS (Statistics Indonesia) to develop a customized Indonesian regional GDP data and to provide the updated data for Indonesia into the new base map. The updated base map will help to obtain new insights from the GSM.

Although the GSM will show a macro perspective of industrial cluster development, the questionnaire survey data conducted in Indonesia, Philippines, Thailand, and Vietnam will provide micro data based evidence on knowledge transfer channels.

Using GSM and materials from other ERIA research projects, this project attempts to make a substantial contribution to EAS Economic Ministers Meeting and other related meetings by providing findings and materials from the research results. This research project will also become a foundation for future policy-oriented researches related to industrial development, innovation, and connectivity issues.

The study is in progress and is expected to be completed in 2016.

## **Contributors**

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# 18

## **Intellectual Property Policies for Investment Promotion - Phase II**

In Progress

### **Abstract**

This study was requested by the ASEAN-Japan Heads of Intellectual Property Offices (IPOs) to examine IP policies for investment promotion.

ASEAN adopted ‘ASEAN Intellectual Property Rights (IPR) Action Plan 2011-2015’ in 2011. The Action Plan recognizes that to encourage foreign direct investments (FDI) in the region, ASEAN needs to ensure the protection and enforcement of IPRs of trading partners. In order to support this recognition and promote FDI, there is a need to identify the protection and enforcement measures pertaining to IPRs which are essential for FDI.

This study investigates the current status of IP regime and IP policy in the ASEAN Member States (AMS) and how the AMSs should develop their IP-related policies in order to promote the investment from MNCs. In Phase I study, there were several interesting findings, including (i) IP related issues are not usually critical factors before expanding into ASEAN countries, but they are perceived as major problems after expansion, (ii) major aspects of items in IP related factors considered before and after expansion into ASEAN countries are “trademark”, “trade secret” and “patent”, (iii) cost of obtaining IP rights and the examination timeline are the most common and of highest concern in trademark, patent and design related issues, especially before expansion to ASEAN countries.

In Phase II study, the working group will be increasing the number of target companies for survey, analyze specific behavior of several industrial sectors and compare them. It is also going to clarify the acceptable levels of cost of obtaining IP rights, the examination timeline and other factors which were identified by Phase I study as barriers of FDI.

### **Expected Outcomes**

Phase II study will mainly produce the following outcomes:



1. Factors which were given importance in determining direct investment in the ASEAN countries for specific sectors including pharmaceutical industry and automobile industry
2. Acceptable levels of factors which were given importance in determining direct investment in the ASEAN countries, including cost of obtaining IP rights and the examination timeline
3. Expectations for robust and satisfactory IP systems and policies in the ASEAN countries beyond 2015

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# 19

## **Industrial Scenario in Myanmar and Enhancement of Mekong-India Economic Corridor Development**

### **Abstract**

Myanmar is expected to enter the phase of high economic growth against the backdrop of ongoing political reform and increased inflow of FDI. However, it is a prerequisite for Myanmar government to prepare and execute appropriate industrial policies in order to accomplish high and inclusive growth, leveraging on Myanmar's intrinsic strength. Myanmar also needs to take advantage of her geographic location as realization of AEC and globalization progresses rapidly. In this context, the governments of Japan and Thailand affirmed the importance of promoting Dawei Special Economic Zone (SEZ) project through trilateral consultation among Japan, Thailand and Myanmar during Japan-Thailand summit meeting held on February 9, 2015. This SEZ promotion reflects the importance of Myanmar's integration into the Mekong-India economic corridor region.

This research offers both short-term and long-term industrial scenario which are most suitable for Myanmar to accomplish sustainable growth, with a special focus on developing the Dawei SEZ and its development as a connecting link in the Mekong India Economic Corridor.

### **Major Findings and Expected Policy Recommendation**

In elaborating Myanmar's industry scenario, authors have surveyed the existing research, namely, Myanmar Comprehensive Development Vision as well as various policy documents and literature written by Myanmar government and research institutions such as ERIA. Authors also performed extensive field research where interviews with various stakeholders such as Myanmar government officials, SMEs, MNCs as well as industry institutions and experts in various areas were conducted. Field trips were undertaken to manufacturing factories, agriculture/fishery markets, Industrial Estates and SEZs to understand the strength of Myanmar as well as the constraints for development of Myanmar.

Based on the findings, agriculture/fishery/food processing, rubber, textile/garments, and tourism sectors are recommended as the core of the priority sectors, for which specific policy

measures should be taken in order to accelerate current economic growth and to establish the foundation for the sustainable growth.

For the priority sectors from the point of medium and long term view, authors recommend the development of automotive, automotive components, electric appliance, and electronic components. The study emphasises that Myanmar needs to be integrated in the regional as well as global value chains in order to incorporate the dynamics of economic development of neighboring countries. The industries mentioned above have extensive value chains and Myanmar has a high possibility to become a part of it by removing various constraints and implementing appropriate policy measures.

For resource based heavy industries, such as petrochemical industry and steel industry, cautious approach should be taken for policy planning as substantial investment is required to build these complex industries. Any mismatch with global demand supply situation will easily distort commodity prices. However, demand for petrochemical and steel products will inevitably increase as the domestic demand grows in near future.

The study also discusses the possibility of the logistic advantage on which Myanmar could leverage on. Authors believe that by establishing the logistic hub in Dawei, Mekong-India economic corridor development will be enhanced and that the function of the logistic hub will help facilitate the agglomeration of the industry in Dawei area.

The study also elaborates on Dawei SEZs, from the viewpoint of the geographical characteristics and industrial linkage.

The study establishes that it is critical to integrate SMEs into the industrial development policy for the inclusive growth in Myanmar. Through the field research including visit to SMEs, authors identified issues and constraints specific to the SMEs and proposed several policy options to revitalize SMEs. During early stage of economic development, Agro-industry, food processing and tourism industry should be promoted by leveraging on abundant labor and rich natural resources.

Taking advantage of Myanmar's geographic location and its comparatively earlier stage of economic development in ASEAN, the logistics-related industry as well as the industry which can be integrated into the global value chain should be promoted. This will then become the foundation for industrial development at the next stage.

For longer term, the policy focus should shift to light manufacturing industry, followed by heavy industry. The critical factors to promote them are:

- Development of infrastructure (transportation, logistics, and electricity etc.)
- Capacity development
- Development of financial system and scheme to financial access
- Promotion and enhancement of SME's ability along with effective use of FDI
- Legal & institutional framework
- Social and environment impacts

It is a prerequisite to carry out in-depth feasibility study followed by development and improvement of the above critical factors before developing FDI-led large scale project such as SEZ. Development benefit should be shared by the whole country in order to accomplish inclusive growth. Therefore, following policy measures should be taken towards extensive industrial development and improvement.

- Two-polar (Yangon & Mandalay) metropolitan development
- Enhancement of geographical and functional linkage among three SEZs
- Improvement and development of industrial linkage with neighbouring countries such as Thailand, China and India.

### **Contributors to Research**

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# 20

## **Evaluation of PPP for Infrastructure Development in Myanmar**

### **Abstract**

The current government in Myanmar has undertaken various economic reforms. Consequently, the country which is seen as the last large Asian economy to open up, has been attracting investments and new economic activities from both domestic and foreign entities.

However, it becomes clear that existing infrastructure cannot meet the growing demands coming from these increased economic activities. Although development of new infrastructure and upgrading of existing infrastructure is much needed, current financial situation of the Myanmar government limits these initiatives. Hence, Public Private Partnership (PPP), which uses managerial skills, know-how and funds of private entities, is expected to speed up the delivery of infrastructure projects. Following the success of PP in neighbouring countries in the region, PPP in power, port and industrial estates sectors can be a practical method, both from the perspective of regional economic development and reduction in public spending.

However, similar to the experience in many other developing countries, there would be many challenges for delivering PPP infrastructure projects in Myanmar. The challenges include a lack of overall regulatory and institutional framework, demand risk, land acquisition risk and foreign exchange risk. Therefore, it is important to support implementing reforms and establishment of new framework which encourages investors to take part in PPP infrastructure projects. There is some evidence that international organisations and some donor countries will also start supporting the activities for improving investment climate for PPP infrastructure projects in Myanmar. Since factors which could influence investor's attitude on PPP infrastructure projects are diversified, it is preferable that these activities should be harmonised for achieving regional and country wide development.

With this background, this research will cover:

1. Evaluation of the environment for PPP infrastructure projects in Myanmar
2. Analysis of key factors for deriving an adequate PPP infrastructure in the context of longer-term region-wide development.

3. Analysis of key factors for encouraging financial arrangements such as debt for PPP infrastructure projects
4. Recommendation for activating PPP infrastructure projects in Dawei SEZ.

### **Expected Outcomes**

Following the analysis of precedents in other developing countries which have achieved economic growth, it would be established that for a region-wide development, it is preferable that public organisations should be responsible for formulating regional development plan and its road map, as well as the delivery of basic infrastructure projects such as port, primary road network, electricity and water. Formulation of long-term vision and development of basic infrastructure by public organisations with support of ODA will encourage private entities to have confidence for delivering PPP infrastructure projects, especially in power generation, port and industrial estate sectors.

In the context of the success of each PPP infrastructure project, it is important to introduce security packages for mitigating risks for private entities. Moreover, government's comprehensive support for delivering projects such as land acquisition and resettlement will also be needed.

Therefore, in Dawei SEZ, for encouraging PPP infrastructure projects, it is important to identify the adequate role and risk sharing between public and private entities, and ensure that they also provide a road map for a region-wide development. However, it is also important that "the adequate role and risk sharing between public and private entities" will undergo changes, reflecting the changes in factors of development.

### **Contributors to Research**

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**SUSTAINABLE  
ECONOMIC  
DEVELOPMENT**

# 21

## Formulating Policy Index for Natural Disaster Resilience

In Progress

### Abstract

In Asia, natural and human-induced disasters are unquestionably huge and imminent risks that can intercept regional economic activities and development. During the past decade, Asia experienced more than 150 incidence of natural disasters (40% of the world total) annually, affecting more than 200 million people annually (about 90%); and causing more than USD 41.6 billion in annual damage (39%). For ASEAN, the number of disaster events in 2001-2009 account for 14% of global disaster events. Although some disasters have been recurring and to some extent are predictable, disaster risk management (DRM) is a relatively young concept—particularly for ASEAN policymakers who tended to view disasters purely as a matter of humanitarian response and relief instead of a development concern. A series of mega-disasters<sup>3</sup> during last decade had eventually shifted leaders' perspectives into the latter, and gained their interest to be more progressive in managing regional disasters.<sup>4</sup>

In *ex ante* effort, the data of potential risk and government's risk management are important. They will represent a degree of resilience and can be useful to help policy makers in improving the status of their preparedness. There is no widely used method of representing the resilience of an area, especially in South East Asia region.

ERIA's previous study on Disaster Management has recommended establishing a regional center for collecting and studying disaster risk data, modeling and potential insurance schemes. This research is aimed at formulating a policy index for disaster resilience. The indicative scope of study focuses on resilient variables influenced by policymaking process, such as infrastructure condition, institutional setting, community preparedness, etc.

The results of the study will be useful in:

1. Providing the government information and a chance to conduct self-assessment on

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<sup>3</sup> 2004 mega-tsunami in South East Asia, 2011 Great East Japan earthquake.

<sup>4</sup> ASEAN leaders had unanimously ratified AADMER (ASEAN Agreement on Disaster Management and Emergency Response) in July 2005, which entered into force in 24 December 2009.



- disaster resilience
2. Providing the institutions working in Disaster Risk Reduction (DRR) with relevant information on disaster resilience
  3. Providing ways to explore critical area which require improvement, and
  4. Providing primary data on disaster resilience for insurance analysis

### **Expected Outcomes**

Based on its findings, the study will result in:

- a. Formulation of policy index.
- b. Guidelines to utilize the policy index.
- c. Interpretation of the policy index.
- d. Sample from pilot project.

### **Policy Recommendation**

- a. The areas of strengths and how to scale up them to other areas.
- b. The areas of improvement, useful for policy makers and international organizations.

### **Contributors to Research**

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# 22

## **Social Protection Floor: A Perspective from the Developing East Asia**

In Progress

### **Abstract**

Discussions among international policymakers on the adoption of the Social Protection Floor (SPF) concept into the post-MDGs' Sustainable Development Goals (SDGs) have become increasingly intensive and heading towards unanimous acceptance. For the case of the developing East Asia, however, this must be approached carefully. While for a developed country a robust SPF—which covers basic social security guarantees, i.e. access to essential healthcare and basic income security for all over the lifecycle—may be affordable and indispensable for social cohesion, for developing countries who are staging their development, the adoption will require earmarking of a large part out of scarce fiscal resources, and hence may risk the potential for higher growth. Furthermore, existing literatures are being widely dominated by advocacy agencies, which tend to underestimate the cost for the adoption and/or expansion of the SPF.

In this project, the team reviews existing social protection programs in the countries of study - which are grouped into: (1) middle-income countries with large population, i.e. China, India, Indonesia; (2) middle-income countries in South East Asia: Philippines, Thailand, Vietnam; and (3) emerging middle-income countries in South East Asia: Cambodia, Lao PDR - and analytically links them to fiscal implications under several scenarios of expansion of SPF to meet selected SDGs. After assessment on policy and organizational coherence among pension, health care, social pension, child benefits and other elements of existing social protection system, and suggestions are made on policy measures and initiatives to improve their effectiveness.

The analysis and findings of the study will equip the EAS leaders with analytical reports on countries' stage of social protection implementation, and inform EAS leaders to be aware of fiscal implications of SPF/SDG future commitments and of sustainability, fairness, efficiency, and effectiveness criteria.

## **Expected Deliverables**

The project is expected to be delivered as an analytical report on existing social protection programs, transfer mechanisms, and the relevance of SPF—including fiscal and capacity gap implications of its adoption, and later as a book publication. It is to:

1. Review existing methodologies used by ILO, ADB, and other organisations for estimating the current and future costs of social protection floor.
2. Map how existing social protection programs fit into the SPF advocated.
3. Estimate additional fiscal costs and their dynamics overtime if the specific package of SPF is adopted.
4. Suggest feasible initiatives which could improve the effectiveness of existing social protection programs in individual countries.

The study is expected to be finished in July 2015 (submission of Final Report) and September 2015 (Manuscript for book publication).

## **Contributors to Research**

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# 23

## **Applying Space-based Technology for Building Resilience in ASEAN Region**

In Progress

### **Abstract**

In order to create a strong social infrastructure on disaster management, there is a need to develop space infrastructure system that integrates a variety of geospatial information with the utilization of space technology such as remote sensing, communication and navigation/positioning system. Such space-based infrastructure system is expected to function as a disaster prevention infrastructure because of its inherent capacity to provide services for wide geographic areas at once, with high efficiency.

This policy research offers the road-map for the long-term vision of infrastructure system development assuming the introduction/application of space-based technology and geospatial information technology; which contributes to national/regional resilience in ASEAN countries. This study is expected to show the path for sustainable development of the region by means of effective development of space and geospatial information technology-based infrastructure for the whole region, maximizing the disaster risk prevention effects and its economic benefits, and achieving resilience to disasters. In the end, it will contribute to strengthening the linkage/tie between ASEAN countries.

### **Expected Policy Recommendations**

The study will show several scenarios of the longer-term vision (or road-map) that introduces space and geospatial information technology, which is consistent with the phase of economic and technology development in each Asian country. It will also study the cost benefit analysis as well as the impact analysis of each scenario. Based on above analysis, the study will propose several types of the disaster management system utilizing space and geospatial information technology for each country, and offer policy recommendations for developing an infrastructure system based on space and geospatial information technology for ASEAN region, which will have expected role for each country.

These scenarios will include:

- development of ground infrastructure (CORS(Cross-Origin Resource Sharing), sensor data network etc.), formulating international/regional operating body for data management and application development; policy/institutional mechanism (e.g. integrated data management, interoperable use of acquired data/information, standardizing technology and operation (workflow) of applying these data/information etc.) as well as capacity development for each country to sustainably use and operate these systems.
- propose and examine specific strategy and plans of regional cooperation for disaster management, in consideration of high-level international/regional strategy and roadmap such as the proposed “Disaster Management Network for ASEAN region”.

Expected specific policy proposals will be: integrating current ICT infrastructure of AHA Center for disaster management, future space-based/geographic information infrastructure and in-situ sensor data, other related data; which will create more valuable information and solution & services leading to connectivity and resilience in ASEAN countries; and finally contribute to sustainable development of the region.

**Contributors to the Project:**

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# 24

## Mitigating Supply Chain Risks Due to Natural Disasters

In Progress

### Abstract

Climate induced natural disasters are increasingly becoming a challenge to global economic development. Left unchecked, increase in frequency and magnitude of such disasters could cause worldwide supply chain disruptions. The East Asia Summit Region is more vulnerable to disaster risks than other regions due to its dependence on trade integration. Concentrated production and economic activities in coastal areas as well as weak institutions add to the susceptibility of this region. Resilience along the value chain and adaption – making adjustments in sectoral level economic systems in response to actual or expected disaster stimuli- becomes key strategy for sustaining economic growth. This study examines the framework conditions for integrating climate change adaption and disaster risk management measures along primary, secondary and service sectors for the East Asia Summit region countries.

The objectives of the study are as follows:

- a. Identify the major factors that amplify the impact of global supply chain disruptions due to climate change and related natural disasters
- b. Determine how communities and companies can prepare for the emergency situations such as energy supply disruptions occurring in the supply chain due to natural disasters
- c. Evaluate insurance tools, emergency plans, and adaptation measures that communities and governments can employ to prepare for supply chain disruptions
- d. Model how ASEAN Disaster relief mechanisms could be made compliant to business continuity plans of major supply chains

### Outcomes and Expected Recommendations

Climate change tends to increase the frequency and intensity of weather related disasters, which puts supply chains at risk. Economic, social and environmental impacts of disasters on

supply chains further increase vulnerability and tend to setback economic integration. This study addresses the differential vulnerability of supply chains in emerging economies, introducing concepts and methods for analysis and illustrating the potentials of regional cooperation to reduce the risks.

### **Contributors to the Study**

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# 25

## **Greening the Industrial Economies: Corporate Management and Change Pathways**

In Progress

### **Abstract**

This project aims to analyze the business response to the emerging concept of circular economy, wherein linear approach to industrialization is replaced by a new economic model – which takes into consideration the resource constraints and find ways to reuse and recycle products. In an effort to keep a control over valuable natural resources, wise use of critical inputs like energy and reduction of carbon emissions, some companies are finding novel ways of doing business. Their success provokes bolder questions. Could economic growth be decoupled from resource constraints? Could an industrial system that is regenerative by design - a circular economy, which restores material, energy and control emissions – be good for society and business? If there are experiences, how does the power of corporate decisions, and public private partnerships works?

The functional objective of the working group will be:

- (i) To examine the critical driving forces of the private sector to get engaged in circular economy
- (ii) To investigate the successful police factors that facilitate private sector engagement in circular economy.
- (iii) To formulate framework conditions of Public-Private Partnership that will accelerate regional efforts towards circular economy

### **Outcomes and Expected Recommendations**

The concept of circular economy has emerged as central idea for innovation and competitiveness of industries. As increased efforts are devoted to foster eco-restructuring of rapidly industrializing Asia, the need to understand the role of selected policy instruments such as regulations, fiscal and finance also increase. Public-Private partnerships (PPP) in different forms and levels is key for maximizing the benefits of circular economy.



## **Contributors to the Study**

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**ENERGY RELATED  
RESEARCH**

# 26

## **Feasibility Study on the Best Mix of Renewable and Conventional Energy Sources Sustainable for Various Asian Communities**

In Progress

### **Abstract**

In the first phase of this study, current situation of renewable energy (RE) uptake and policies that drive them were analyzed for East Asia Summit (EAS) countries. The study also reviewed some community-based RE initiatives implemented in this region to find merits and demerits of the initiatives in terms of the environmental, economic and social pillars of sustainability. In the second phase, the study will develop a method to screen the merits and demerits of the RE initiatives in terms of three pillars of sustainability from the perspective of best energy mix and will identify possible barriers and success factors to make the RE initiatives sustainable at national, sub-regional and local levels.

### **Key Outcomes and Recommendations**

At the end of the project, the study will come up with a guideline to establish energy systems using renewable energy which are sustainable for communities in various Asian countries and will contribute to attain the best mix of renewable and conventional energy sources. The guideline should contribute to strategies to establish workable energy systems and regional energy policies for governments to promote sustainable RE use in Asian communities

### **Contributors to the Study**

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# 27

## **Sustainability Assessment of Utilizing Conventional and New-Type Geothermal Resources in East Asia**

In Progress

### **Abstract**

In the first phase, a review was made to extract common and individual problems related to maintaining sustainability in developed areas and installed systems for direct use of geothermal energy. Among various common interests on those techniques, “sustainable reservoir management” and “effective information collection for sustainable use of geothermal heat pump utilization” were chosen to be studied as methodologies for sustainable geothermal energy utilization. Case studies, including possible economical effect, are being collected from each member country along these two topics. A guideline of sustainable development and utilization of geothermal resources based on those case studies will be the output of the project.

### **Key Outcomes and Recommendations**

The characteristics of geothermal systems are strongly controlled by local geology and other environment factors. The case study analysis give scope for variation of geothermal systems to developing companies and governments. The manual/guidelines under preparation will help the governments to make recommendations or regulations for sustainable utilization which includes protection of environments.

### **Contributors to the Study**

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## **Benchmarking of Renewable Mobility Energy in EAS Countries**

In Progress

### **Abstract**

Transport in Asia is 94 % dependent on oil and is increasing costs to the environment. Research and technological development have led to successful demonstrations of alternative fuel solutions for all transport modes. Market take-up, however, requires additional policy action. EAS-ERIA Biodiesel Fuel Standard 2008 has the potential to be expanded to include other alternate mobility fuels. In this study, definition of first generation biofuel is expanded to include bioethanol and biodiesel from food crop; whereas, next generation biofuel, or often called advanced biofuel, is bioethanol, biodiesel and other fuels derived from non-food crop. Case study analysis on the technical standards of both first and next generation biofuel, economic feasibility and social acceptance is being made. This will lead in developing framework conditions for biofuel activity at local level and multi-sectoral approaches to be adopted.

### **Key Outcomes and Policy Recommendations**

Based on new data and information, the earlier version of Biofuel Trade Book is updated. Some conclusions of the first phase of the study are summarized as follows;

- Develop, upgrade and improve standards for 1st and 2nd generation mobility fuels
- Primarily provide pro-active support to new mobility fuel services in the form of timely disclosure of scientifically-sound results; and on-going expert input to the policy-making process.
- Provide coordinated actions to steer activities across the region to adopt the agreed standards.

### **Contributors to the Study**

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# 29

## **Energy Efficiency Road Map in Myanmar**

In Progress

### **Abstract**

While Myanmar has attracted increased international attention since its integration into the global economic system in 2011, it still faces many energy development challenges. Such challenges, and opportunities are the focus of this study which has the functional objectives of (i) quantitative scenario analysis of major factors of rural electrification including future electricity demand forecast, necessary amount of needed power generation capacity in the off-grid areas, costs required for rural electrification, etc, (ii) qualitative analysis of obstacles in power development particularly in the border areas, and (iii) human resource development in policy making/implementation for energy policy makers and researchers.

### **Expected Outcomes and Recommendations**

The report is under preparation for publication in July, with the following provisional policy recommendations.

- Assuming the national electrification target of the universal energy access in 2030, the integration of decentralized power systems into planned centralized systems might be one of the crucial aspects to make the target feasible.
- In order to facilitate integrated infrastructure development, Public Private Partnerships (PPP) should be soundly coordinated with proper reforms such as electricity tariff and institutional/legal framework to encourage foreign direct investment.
- For the relevant PDCA cycle, a HRD program for governmental officials is necessary. It is also important to provide a common ground for energy related ministries and other stakeholders to discuss and work together.

### **Contributors to the Research**

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# 30

## **Effective Investment of Power Infrastructure in East Asia through Power Grid Interconnection**

In Progress

### **Abstract**

In the East Asia Summit (EAS) countries, electricity demand is steadily expanding due to population increase and economic growth. Developing a large-scale power source steadily in an economically efficient way is an urgent task.

A country usually develops a power source on the premise of self-sufficiency. However, it may be possible to optimize or improve the efficiency of power infrastructure investments in terms of supply stability, economic efficiency, and reduction of the environmental burden if we consider ways of developing power infrastructure (power sources and grids) on a pan-regional basis. In the ASEAN region, The Heads of ASEAN Power Utilities/Authorities (HAPUA) and the Asian Development Bank are implementing initiatives related to intra-region power grid interconnections; bilateral power imports and exports are also ongoing.

This study will quantify the possibility and benefits of the pan-regional optimization of power infrastructure investments in the EAS region. By doing so, the research will provide directions for policy decisions towards the development of optimal power infrastructure and investment decisions.

The time horizon of the study will be beyond 2020, which is not covered by the existing HAPUA initiative.

In the past two years, the study has conducted the following steps:

- a) Collection and compilation of information relating to power infrastructure
- b) Identification of challenges and points of debate
- c) Development of a broad-area power infrastructure simulation model and evaluation of the simulation results
- d) Drawing out of policy recommendations (preliminary analysis)
- e) Analysis and examination of optimal power infrastructure
- f) Selection of model projects and its preliminary economic evaluation
- g) Drawing out of policy recommendations (detailed analysis)



Based on the above-described achievements, it is now proposed to deepen the analysis with the following steps:

h) Selecting priority routes

From international interconnection lines extracted in step (f), specific routes will be selected for priority investment considering feasibility and economic benefit.

i) Cost estimations

Costs for selected interconnection lines will be estimated followed by estimation of unit power transmission costs based on projected transmission demand for the lines. This cost estimate includes preliminary route design to find out technical challenges in materializing the project.

j) Policy and institutional challenges

Policy and institutional challenges will be analyzed for realizing the selected interconnection lines.

k) Drawing Policy Recommendations

Based on analyses (h) to (j) above, policy recommendations will be drawn. In considering the policy recommendations, which will be generalized for the entire EAS region.

### **Expected Outcomes**

- Estimating the benefits of grid interconnection between two countries, such as improved reliability of electricity supply, diversified supply sources to disperse risks, and effective use of surplus power generation capacity, against additional costs.
- Identifying cost-effective and optimal power transmission routes which should be prioritized through a detailed feasibility assessment.
- Identifying the institutional obstacles to be removed to attract private sector investments in cross-border power infrastructure and to facilitate the construction and operation of planned transmission lines.
- Proposing the specific support measures such as institutional design, technical assistance, human resources development, and financing to be implemented by involved countries to incentivize and facilitate the investment.

### **Contributors to Research**

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# 31

## **Energy Efficiency Improvement in the Transport Sector through Transport Improvement and Smart Community Development in the Urban Area**

In Progress

### **Abstract**

Since 2012 when this study started, analyses on how to improve traffic flow—or energy efficiency in the transport sector - in major cities of the East Asia Summit (EAS) region have been conducted. Jakarta in Indonesia was selected as the subject of the case study. Even though the study succeeded at deriving policy recommendations in the last two years, there was a need to extend the analysis to small and mid-sized cities in the EAS region, considering that these were not covered in past studies.

Meanwhile, one key finding of the study is that appropriate forward-looking investment is required in the initial phase of urban development. In Jakarta, traffic congestion has deteriorated considerably. Measures to improve such situation are limited and require massive short-term investment. Their implementation thus increases fiscal costs. Meanwhile, the EAS region has many small to mid-sized cities that are about to have, or have experienced, explosive urbanization and motorization. From the initial development stage, appropriate measures must be implemented gradually to allow these cities to realize sound development.

Under this background, the study in 2014 targets a small to mid-sized city in its initial development stage and analyses policy and infrastructure measures for improving traffic and energy efficiency. From this analysis, policy recommendations will be derived and made available for many cities in the EAS region.

### **Expected Outcomes**

- Conduct quantitative simulation analysis for transport improvement and determine its impact on a selected small cities in Southeast Asia.
- Develop measures which are required to be taken in accordance with urban and transport infrastructure development and motorization stages, thus improving

energy efficiency.

- Draw policy recommendations to improve traffic and energy efficiency in developing cities in accordance with urban and transport infrastructure development and motorization stages.

### **Contributors to Research**

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## **Study for the Possible Framework of Cooperation to Strengthen Oil Stockpiling and Emergency Response System of East Asia**

In Progress

### **Abstract**

Energy demand in ASEAN countries has been rapidly expanding in the last decade. Since domestic oil production has been either stagnant or shrinking in most ASEAN countries, growth in oil demand has resulted in increased oil import, which makes ASEAN countries more vulnerable to oil supply disruptions. As for oil import sources for ASEAN countries, the share of Middle Eastern countries has been increasing, and this trend will continue until 2030. This means that oil supply in ASEAN will have more risk factors not only in its growing import dependence but also in its supply source being concentrated to a certain region. Oil supply security system in ASEAN, on the other hand, has not sufficiently been developed. Although a regional cooperative framework such as the ASEAN Petroleum Security Act (APSA) has been agreed on and several countries such as Thailand have started to develop their own oil stockpiling system, international cooperation is needed to promote and invigorate oil supply security arrangements in ASEAN.

Based on the above recognitions, this study aims to explore and evaluate potential cooperative actions in East Asian countries to promote oil supply security in ASEAN countries. To study how East Asia Summit member countries support and materialize the achievements of ASEAN+3, the following study items are proposed:

- Review of the progress, challenges, and requirements from ASEAN countries' oil stockpiling developments
- Potential solutions and cooperative actions to challenges and requirements in ASEAN countries' oil stockpiling developments
- Alliance formation among member countries of the International Energy Agency (IEA) - Japan, Korea, the United States, Australia, and New Zealand; and
- Coordination among administrative organization of APSA, ASEAN+3, and EAS

## **Expected Findings**

- The study at first will review the current status of oil stockpiling developments in ASEAN countries and identify specific challenges to be resolved.
- It will then provide specific cooperation measures for ASEAN countries that have engaged in oil stockpiling developments such as an oil stockpiling agreement<sup>5</sup> or an arrangement that reinforces and facilitates ASEAN countries' efforts to develop stockpiling by their own responsibilities.
- The study will also explore how member countries of the IEA such as the United States, Japan, or Korea can assist the development of oil stockpiling in ASEAN countries.
- If ASEAN countries accept these proposals and cooperative arrangements, these will facilitate the realization of the above-mentioned oil stockpiling road map by ensuring those countries' access to a certain volume of oil stockpiling even though such countries do not have their own stockpiling facilities. As a result, the stockpiling development of Asia will be accelerated, thus, enhancing the region's emergency response capability.

## **Contributors to Research**

Yoshikazu Kobayashi, Yuji Morita, Tomoko Matsumoto, Kiyuito Kume (all from IEEJ)

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<sup>5</sup> Oil stockpiling agreement: Oil companies' inventory can be registered as another country's stockpile volume if the oil company wins the bidding process for stockpiling undertaken by the country. Japan and New Zealand have signed an agreement that enables this bidding and registration system.

# 33

## **Energy Outlook and Analysis of Energy Saving Potential in East Asia Region**

In Progress

### **Abstract**

In response to the Cebu Declaration on East Asia Energy Security in 2007, which emphasized that energy efficiency and conservation would be one way of maintaining energy security and mitigating climate change, Japan proposed to undertake a study on the energy savings and reduction potential of carbon dioxide (CO<sub>2</sub>) emissions in East Asia. The study would quantify the total potential savings under the individual energy saving goals and action plans of each country. Potential saving was defined as the difference between the primary and final energy demand in the business-as-usual (BAU) scenario and the alternative policy scenario (APS) In addition, the Sixth East Asia Summit (EAS) Energy Ministers Meeting held in Phnom Penh in September 2012 requested the ERIA to prepare and analyse an appropriate energy outlook for all EAS countries, which ERIA has been doing since 2013.

This study would provide insight to national energy ministers for establishing goals and action plans to improve energy efficiency in their respective countries. It also aims to prepare a methodology for the monitoring and implementation of energy saving goals and action plans of each EAS country.

In addition, this study would include several other studies related to energy efficiency and saving potential. The additional studies would include a bottom-up approach to transportation energy consumption survey, energy efficiency of buildings and transformation sector such as clean coal technologies in selected ASEAN and East Asian countries. It would also include impact of energy subsidies in Malaysia, among others.

### **Expected Outcomes**

The outcome of this research project will be reported to the Eighth EAS Energy Ministers Meeting in 2015. The key messages from this study, that will have policy implications, will include:

- Effective and consistent energy efficiency and conservation policies in both energy demand and supply sides
- Energy efficiency action plans in the final energy consumption sector, especially industry and road transport sectors, to reduce electricity and oil consumption
- Technology development to support the shift from oil and gas to non-fossil energy to increase energy security and mitigate CO<sub>2</sub> emissions
- Rationalizing energy pricing mechanisms to promote EEC and low carbon energy and technologies, and
- Statistical capacity building for energy consumption survey across sectors to be implemented by the national administration.

### **Contributors to Research**

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# 34

## **Study on Petroleum Demand Projection in Cambodia**

In Progress

### **Abstract**

Petroleum demand in Cambodia has been increasing rapidly after 1990 due to the country's amazing economic growth and this is expected to continue for another two or three decades. Cambodia's Ministry of Mines and Energy (MME) has the option to have refinery plants in the country. Since future petroleum demand is crucial for Cambodia, especially its oil supply policy, the MME should study such demand. In addition, increased petroleum demand will bring about discussion on the necessity for oil stockpiling to mitigate economic damage brought about by oil supply disruptions, such as demographical conflicts and natural disasters.

Oil stockpiling will also be a crucial issue in the country and will depend on the amount of future petroleum demand. In this regard, the ERIA and the Institute of Energy Economics, Japan (IEEJ) will support Cambodia's General Department of Petroleum and MME to develop an econometric model to project the demand for each petroleum product in the country by 2040. Through this project, MME's capability and skills in energy demand modelling is expected to improve.

### **Expected Recommendations**

- Improve the collection system of energy consumption data in households.
- Understand the importance of energy consumption data, especially end-use data, in households to identify the potential for energy saving.
- Increase capacity to conduct end-use energy consumption survey.
- Extract recommendations for setting up appropriate EEC policies in future.

### **Contributors to Research**

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# 35

## Scenario Analysis of Energy Security in EAS Region

In Progress

### Abstract

Energy security is a key concept of energy policy in all East Asia Summit (EAS) countries. To ensure energy security, possible changes in domestic and overseas markets need to be foreseen, and appropriate policies need to be adopted from a long-term perspective.

A country may analyse measures that may be required in the future under the assumption that the future is an extension of present trends. This analysis can be conducted by developing energy supply–demand outlooks which was conducted by ERIA in 2013.

However, as history indicates, energy markets continuously change because of various factors. A good example of such change is the oil crisis of the 1970s which largely impacted the economies of the Organisation for Economic Co-operation and Development (OECD) and led to subsequent policy development. While it is difficult to anticipate and respond to such changes, we can prepare for these to some extent by anticipating possible changes in the energy market and recognizing their predictors.

In this light, this study uses the scenario planning approach to analyse multiple possible scenarios in the future, extract possible threats for energy security in the EAS region, and consider policies to avoid or prepare for these threats. This study aims to contribute to improving energy security in the EAS region.

### Expected Findings

- It is important to detect the predictors of energy security crises as early as possible and take necessary measures. For this purpose, EAS countries should collect and analyse information on external environment changes consistently.
- Measures required to avoid crises include those that have longer gestation period. The EAS region should view changes from the long-term viewpoint and take necessary action in advance.

- The EAS region consists of diverse countries, thus making diverse resources available, including energy resources, technologies, human resources, and funds. Regional cooperation in maximizing these resources will be one of the effective and efficient measures to avoid crises.
- Regional energy trade/accommodation is expected to work in response to accidental energy supply disruptions. The EAS region is thus required to create systems and logistic infrastructure for flexible energy exchange.
- The entire EAS region is apt to become an energy importer. This means that the region will become more susceptible to changes in international energy market and will therefore be required to increasingly contribute to stabilizing the international and regional markets.

### **Contributors to Research**

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# 36

## **Strategic Usage of Coal in the EAS Region: A Technological Potential Map**

In Progress

### **Abstract**

As electricity demand in the EAS region increases rapidly, coal and gas-fired thermal power generation will continue to play a central role in meeting this demand. As coal is cost competitive compared with gas, coal-fired power generation is anticipated to increase. In the EAS region, Australia, Indonesia, China, India, and Viet Nam produce large quantities of coal. Compared with other energy sources which are largely imported, increased use of coal in the EAS region may enhance energy security.

However, with development growth in the region, the supply–demand relationship of coal has become askew in recent years. To facilitate economic development in the region, a cost-effective and sustainable electricity supply system should be promoted. In addition, the dissemination of clean coal technologies (CCTs) for clean and efficient use of coal in the EAS region is of pressing importance. While the need to disseminate CCTs has been recognized, inefficient technology is still being widely used. In the meantime, valuable coal resources lay wasted and adversely impact the environment.

The first phase of this study focusing on the economic return from investments in different types of coal technologies has been completed. Its major findings were that investments in CCTs with high efficiency will bring higher returns, including savings in coal utilization. However, the upfront cost of investment remains a barrier for developing countries.

The second phase of the project will focus on updating the information from the earlier study and laying out a technological potential map to facilitate the deployment and dissemination of CCTs. The study will suggest a feasible efficiency level, environmental performance, and maintenance criterion for each technology so that countries in the region are able to select and introduce the best technologies which suit their specific demands. On completion, this research will provide a technological potential map which is practical for policy makers to introduce swiftly in their countries.

## **Expected Recommendations**

- Quantification of the effects of CCTs
- Economic assessment of CCTs
- Development of technological potential map for CCTs dissemination in the EAS region
- Policy recommendations for CCT dissemination

## **Contributors to Research**

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# 37

## **Study on Building a Guideline and a Cooperative Framework in East Asian Countries in Case of Radioactive Emergency**

In Progress

### **Abstract**

In the study conducted in 2012 and 2013, ERIA working group members from East Asia Summit (EAS) countries shared information on the nuclear safety and security management system of each country, and extracted issues to be solved in order to share information in case of radioactive emergencies and to achieve cross-border collaboration among neighbouring countries.

Based on these findings, the working group summarized recommendations for a cross-border collaboration framework on nuclear safety and security management in the EAS region, especially considering a large-scale radioactive hazard. The recommendations are to be used for sound development and utilization of nuclear power and for the enhancement of safety levels, security, and safeguard (3S) in the region.

The Nordic experience shows the feasibility and necessity of a regional guideline to harmonize criteria, standards, and practices in neighbouring countries in preparing for and responding to potential nuclear threats. The envisioned guideline respects the fact that each member country has its own characteristics, needs, and constraints in designing its own nuclear emergency standards. In the meantime, it emphasizes the need to harmonize the issues with cross-border implications to facilitate better coordination. It tries not only to provide a scheme of coordination but also helps optimize the use of resources of each member country in preparing and responding to nuclear emergencies.

In view of this need, this study conducted in fiscal year 2014-15 will be further developed to (i) discuss concrete methods for the telecommunication and the transport infrastructure in case of radioactive emergency, and (ii) establish the feasibility of a detailed guideline based on the framework of the International Atomic Energy Agency (IAEA) for appropriate support and collaboration among developing countries in the EAS region which are considering the development of nuclear power and those which already have nuclear technologies in the EAS region.

The specific research issues include the following:

- Joint construction of a database on nuclear facilities in East Asian countries,
- Assessing problems and bottlenecks on telecommunication and transport infrastructure, and
- Proposal and inquiry for a review by related international authorities.

### **Expected Outcomes**

- Guidelines on a regional framework for close coordination in nuclear emergency preparedness and responses will significantly improve the nuclear safety of EAS countries, and this study presents reasons and evidence towards this.
- Guidelines on a reliable information and communication network, a shared database, and a joint work for establishing a recommendation on practical methods of emergency preparedness which bring about benefits, such as systematic support to member countries who are considering introduction of nuclear energy.
- Specific support measures which may include technical assistance for establishing the guidelines on emergency preparedness and response in East Asian countries, human resource development, and financing in related research and development projects.

### **Contributors to Research**

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## Sustainable Development of Natural Gas Market in EAS Region

In Progress

### Abstract

Many East Asia Summit (EAS) countries show an upward trend in energy demand. The role of natural gas in energy supply becomes increasingly important from a variety of aspects which include economic efficiency, diversification of energy, effective use of domestic resources, and reduction of environmental burden arising from energy use. However, at the moment, since the share of natural gas in total primary energy supply is relatively low except in a few countries, it seems that the use of natural gas in EAS countries may be expanded.

To make natural gas use sustainable, appropriate actions need to be taken through a supply chain such as exploration and production, necessary import, transmission, distribution, and consumption. For instance, such appropriate actions include maintaining investment to develop gas fields to enhance natural gas supply, increasing the efficiency of natural gas use to avoid wasting resources and expenditure, and developing the required infrastructure for natural gas supply. At the same time, strengthening adjusting capability and enhancing transparency of the gas market by improving liquidity of the natural gas market including LNG is also required. In the EAS region where natural gas demand is increasing, the ground for sustainable use of natural gas should be prepared.

With this background, this study aims to draw policy recommendations for sustainable use of natural gas in the EAS region.

The second year of study has the following objectives:

- Analyse the potential and challenges of natural gas trading
- Analyse the potential and challenges of the supply infrastructure
- Analyse the impact of the shale revolution on industry and economy using the Global Trade Analysis Project (GTAP) model

### Expected Recommendations

The following policy recommendations are expected from this study:



- The continuous growth of demand for natural gas is highly likely in the EAS region. However, potential risks, such as production slowdowns, lack of infrastructure capacity, and price hikes, could restrain future demand growth. Policies are needed to mitigate and manage these risks.
- The region can reduce the imbalance in supply-demand of natural gas by having adequate intra-regional trading. The EAS region can further enhance the security of natural gas supply by strengthening connection and trade with supply sources outside the region.
- Enough infrastructure capacity will be required to achieve the abovementioned trading. Thus, it is necessary to avoid obstacles, such as lack of multinational coordination function or financial resources.
- The EAS region is required to steadily execute measures to prepare for future risks. Those measures should include increasing investment for exploration and production, improving efficiency of natural gas use, and developing the necessary infrastructure to transport and store natural gas.
- Long lead time and large capital are required to execute the above-mentioned measures. Therefore, it is important to set up a long-term, region-wide plan, then launch actual actions as soon as possible.
- The EAS region has a wide spectrum of natural, technological, human, and capital resources. International cooperation will enhance effective use of these regional resources to create a sustainable natural gas market in the region.

### **Contributors to Research**

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# 39

## **Study on the Advancement of the Energy Management System in the EAS Region**

In Progress

### **Abstract**

The recent economic growth in East Asia Summit (EAS) countries has caused a rapid rise in energy consumption, and taking concrete measures to control the energy consumption has become imminent in this region.

The experience of developed countries reveals that energy efficiency needs to be promoted through a diffusion of energy efficiency technologies and the formulation of an institutional framework (e.g., Energy Conservation Law) to support it. This approach for promoting energy efficiency is considered to be also effective for developing countries. Based on this concept, it is worth identifying the common road map for energy efficiency in the EAS region.

As for the technological approach, various technologies range from upstream of supply to downstream of consumption. According to the *Energy Efficiency Market Report* of the International Energy Agency (IEA), the energy management system (EMS), which was developed using the advancement of information and communication technology (ICT) since the 2000s, is expected to yield a very high cost-benefit performance.

Considering the status of economic development of EAS countries and the recent changes in the energy consumption structure, it is worth studying the prospects of EMS technologies which meet the specific needs of each country in the region. The status of economic development and the structure of energy supply and demand vary even among EAS countries; the aforementioned energy efficiency road map may need to be customized for each country during actual implementation to accommodate the different conditions of each member country.

This research project is aimed at identifying the common policy challenges to advance EMS in the EAS region, and is expected to contribute to the sustainable economic growth of the region.

## **Expected Outcomes**

The following are the expected policy recommendations of the study.

- Outlining the scenario of EMS advancement in EAS countries taking into account the development stage of the national economy, the industrial structure, and the status of energy utilization of each country.
- Estimating the potential and the effectiveness of implementing advanced EMS technologies in the EAS region.
- The expected effects of implementing advanced EMS technologies are evaluated both quantitatively and qualitatively.
- Identifying the common challenges for promoting EMS technologies and the policy options to deal with the challenges.

The common challenges for realizing the effects of implementing advanced EMS technologies in the EAS region are identified and the policy options to deal with these challenges are presented.

## **Contributors to Research**

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# 40

## **Low- Carbon Energy Systems: Policies and Practices**

In Progress

### **Abstract**

Emerging economies of Asia have an essential role to play in promoting the global move towards energy security, economic growth and sustainable development. Although their economic activities are circumscribed by developmental preferences, equity concerns, and industrial competitiveness, they are important agents in implementing several measures which would mitigate global environmental challenges like climate change. The way in which the emerging economies manage their future energy systems and economic integration activities are critically important, as the global society increasingly expects. Asian economies have begun responding to this challenge in the form of intended nationally determined contributions and concentrated efforts to liberalize trade in environmental goods and services. However, the observed effects of these commitments are often met with many technological barriers, financial deficiencies and lack of international cooperation, some of which are very specific to developing Asia. This study will examine how emerging economies of Asia are operating amid changing demands for low carbon energy system development and what kind of pro-active policies, regional cooperation, market and non-market policies would strengthen such green growth practices in the future.

The study is designed

- to identify individual energy policy actions in major economies based on scenario analysis that is necessary to create low-carbon economy at a scale required
- to review regional economic integration activities in the region and beyond, that facilitate such actions

### **Key Outcomes and Expected Recommendations**

Drawing upon multi-country studies by a number of EAS countries, the study proposes a meta-policy analysis approach to support policy learning. Using this approach, the study identifies four factors that have clearly contributed to initial successful introduction of low-

carbon energy systems. These include (i) a strong state articulation of low-carbon energy systems and green growth strategy (ii) decentralized policy making and implementation (iii) sectoral targets to link energy efficiency improvement with technology innovation and (iv) high levels of private participation. The fifth factor, regional cooperation for harnessing the market and non-market forces is still a work in progress. Current free trade agreements could be used as a vehicle to accelerate that process.

### **Contributors to the Study**

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# 41

## **Financing Renewable Energy Development in EAS Countries: A Primer of Effective Policy Instruments**

In Progress

### **Abstract**

The research aims at identifying and updating the most effective policies in the Asian context, especially for ASEAN countries, China, and India. Specifically, it addresses what policies could effectively mitigate the most prominent risks for renewable energy investments and target the most promising financial mechanism in this region.

The working group consists of field experts on renewable energy financing issues from governments, development banks, project developers, private equity/venture capital, and utilities, and country experts from ASEAN countries, China, and India. Each group member has proposed a research topic relevant to his/her specialty area and addresses the most prominent renewable energy financing issue in the mentioned developing East Asian countries.

The papers of the proposed study cannot cover all the issues relevant to the topic. However, each of them will highlight one important and most pressing aspect of the broad issue of financing renewable energy in the developing parts of East Asia, comprehensively review and summarize existing literature, gather the latest information and data, develop an innovative methodology, and report the findings which will identify the opportunities, barriers, and key challenges for policymakers. These are expected to stimulate further policy debate and academic research, especially from the East Asian community, on more specific and technical policy issues related to the topic.

### **Expected Findings**

The project aims at producing a most updated set of renewable energy policies for developing Asian countries, including ASEAN countries, China, and India. The following financing issues are highlighted for the customized studies on the policy options for these countries:

- Financing mechanisms—including debts, equity, hybrid structures, and risk-sharing and mitigation—for projects using different technologies, namely, wind, solar, biomass, etc. Emphasis should be given to the following in the Asian context:
  - Financing small-scale renewable energy projects distributed in urban and rural areas;
  - The feasibility of smaller-scale lending through micro-credit, the fees for service model, the revolving funds model, and the rural cooperatives model in the rural area;
  - The feasibility of equity financing, such as joint ventures, specialized investment funds, and venture capitals
- Other innovative financial mechanisms such as loan guarantees and political risk insurance
- Liberalizing energy markets, removing subsidies on fossil fuels, internalizing the negative externalities of fossil fuel usage, and opening up renewable energy markets

This research project focuses on developing policy instruments to help resolve the above issues in financing renewable energy development in ASEAN countries, China, and India. It is noted that the linkage between policies and the risks of renewable energy investments is the key to applying these policy instruments. The research question is to figure out the most effective policies in the Asian context through which the financial mechanism will function properly to provide ample financial support to develop renewable energy.

### **Contributors to Research**

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# 42

## **Study for Shifting to More Operationalized ASEAN Petroleum Security Agreement / Coordinated Emergency Response Measures**

In Progress

### **Abstract**

Oil demand in ASEAN has been increasing rapidly and is forecasted to increase at a stable rate in the future. Yet, stockpiling of oil in ASEAN is not sufficient compared to its oil demand. Consequently, the existing ASEAN Petroleum Security Agreement (APSA)/Coordinated Emergency Response Mechanism (CERM) is important for the region. However, this may not be responsive during emergency situations in the region, making oil supply security vulnerable during emergencies. Thus, operationalization of APSA will be needed.

Member states should be clear on the steps necessary for making the existing APSA/CERM an operable framework for ASEAN in responding to oil supply disruptions under various emergency situations. This is to be achieved through the development of a manual to make APSA/CERM operational and which also elaborates a common framework for coordination among member states, both in terms of emergency preparedness in normal times and emergency response measures during a supply disruption (i.e., monitoring continuously and taking coordinated action when necessary). Key recommendations for operationalizing APSA/CERM will accompany the manual.

The Operationalized APSA/CERM is a first step for ASEAN member states to set up strategic petroleum stockpiling physically in its region and accommodate each other's petroleum stockpiling. The target is to have the manual for making APSA/CERM operational, including recommendations, finalized ahead of the 33<sup>rd</sup> ASEAN Ministers on Energy Meeting to be held in Malaysia in late September 2015.



## **Expected Recommendations**

- The Operationalized APSA/CERM will mitigate serious economic impact from sudden petroleum supply disruptions caused by natural disasters, accidents in petroleum facilities, and geopolitical conflicts
- The Operationalized APSA/CERM includes both an ASEAN regional version (General APSA/CERM) and a country version (Localized APSA/CERM), and contributes to maintaining the security of petroleum supply in ASEAN member states.

## **Contributors to Research**

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