International Environmental
Law Research Centre

GOVERNANCE ON ADAPTATION TO CLIMATE CHANGE IN THE ASEAN REGION

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Published in: 1 *Carbon and Climate Law Review* (2011), p. 82-90.

Governance on Adaptation to Climate Change in the Asean Region

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In recent years, climate change adaptation has emerged as an important issue in the policymaking process at the national and regional level. This paper seeks to provide an overview of the governance framework for climate change adaptation within the Association of Southeast Asian Nations (ASEAN), a sub-regional organization, and to evaluate opportunities and limitations.

I. Introduction

The Intergovernmental Panel on Climate Change defines adaptation as "the measures taken in response to climate change, to reduce the adverse impacts or to take advantage of opportunities offered by such changes."[1] The United Nations Framework Convention on Climate Change (UNFCCC) 1994 includes several references to adaptation,[2] but the term is not defined. The Subsidiary Body for Implementation makes support and funding decisions to assist developing countries with impact, vulnerability and adaptation assessment, etc. The Subsidiary Body for Scientific and Technological Advice addresses the scientific and technical aspects of adaptation and technology transfer, including the Nairobi work program on impacts, vulnerability and adaptation to climate change. The Kyoto Protocol 1998 also requires that all parties develop national (and regional) adaptation programs (Article 10(b)) but it does not discuss the issue of adaptation any further. Nevertheless, adaptation has formed an integral element of the Bali Action Plan 2007 and the Copenhagen Accord 2009, as well as the mandate of the Ad Hoc Working Group on Long-term Cooperative Action.

Adaptation measures can take several forms. Reactive measures are implemented in response to current climate variability and observed impacts whereas anticipatory measures are undertaken before impacts are observed to reduce exposure to future risks.[3] Given the uncertainty surrounding climate change, the implementation of anticipatory measures is challenging, as they require in-depth information and knowledge about climate change. As a result, a majority of the adaptation measures are reactive in nature. Existing policies may be strengthened to accommodate adaptation concerns or altogether new policies may be formulated. The adaptation measures may be short term or long term; technological, behavioral or managerial;[4] sectoral, cross-sectoral or multi-sectoral;[5] horizontal or vertical;[6] or at macro, meso or micro scales.[7]

Further, the development priorities of countries provide opportunities for widening the scope of adaptation policies. In addition to climate change, the future vulnerability of developing countries

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1 James J. McCarthy et al., *Climate Change 2001: Impacts, Adaptation and Vulnerability* (Cambridge, Massachusetts: Cambridge University Press, 2001), at 982. See also Herminia A. Francisco, "Adaptation to Climate Change: Needs and Opportunities in Southeast Asia", 25(1) *ASEAN Economic Bulletin* (2008), 7, at 8; UNFCCC, *Climate Change: Impacts, Vulnerabilities and Adaptation in Developing Countries* (Bonn: UNFCCC, 2007), at 10.

2 See The United Nations Framework Convention on Climate Change (UNFCCC), New York, 9 May 1992, in force 24 March 1994, 31 *International Legal Materials* 849 (1992). Articles 4.1(b), (e) and (f); 4.4; 4.5 and 4.8.

3 McCarthy, *Climate Change 2001*, supra, note 1.

4 Tom J. Wilbanks et al., "Industry, Settlement and Society" in M. L. Parry et al. (eds), *Climate Change 2007: Impacts, Adaptation and Vulnerability*, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Cambridge: Cambridge University Press, 2007), 357, at 380.

5 UNFCCC, *Climate Change*, supra, note 1, at 29.

6 Oran R. Young, *The Institutional Dimensions of Environmental Change: Fit, Interplay and Scale* (Cambridge: The MIT Press, 2002), at 23–24.

7 Ibid.

will also depend on their development path.[8] Therefore, the integration of adaptation into mainstream development policies, plans and programs can improve policy coherence, enhance the efficiency and effectiveness of resources, minimize duplication and contradictory policies, deal with trade offs and reduce the sensitivity of development activities to current and future climate change.[9] This can make adaptation policies more acceptable to developing countries.

Climate change is a transnational issue but adaptation measures are usually developed at the regional, national and local levels. This trend is being more frequently witnessed in developing countries, including Southeast Asian countries, which are most vulnerable to the impacts of climate change. Ten of these countries – Brunei, Cambodia, Indonesia, Laos, Myanmar, Malaysia, the Philippines, Singapore, Thailand and Vietnam – are members of the Association of Southeast Asian Nations (ASEAN), which was established in 1967.[10] All of these countries have ratified the UNFCCC and the Kyoto Protocol. This paper examines and analyzes the legal and policy framework governing climate change adaptation in Southeast Asia, particularly at the sub-regional level.

II. Climate Change in the ASEAN Region

The observed climate change trends in Southeast Asia include increases in temperature, decreases in rainfall, sea level rise, increased frequency, duration and intensity of extreme weather events such as droughts, storms, floods, typhoons and heat waves, significant increases in heavy precipitation events and more tropical cyclones.[11] Extreme weather events have caused extensive damage to human life and infrastructure losses. Climate change impacts on biodiversity have exacerbated water shortages, affected agricultural productivity and threatened food security in the region. Climate change has also caused forest and peat land fires, as well as transboundary smoke haze, land/forest degradation and soil erosion, damaged coastal and marine resources, and increased the risk of outbreaks of infectious diseases.[12] Future climate change impacts and vulnerabilities include increases in water demand for agricultural irrigation and losses in rain-fed agriculture, increases in endemic morbidity and mortality due to diarrheal disease primarily associated with floods and droughts, negative impacts on fisheries sector, and increases in the intensity and spread of forest fires due to rises in temperature and declines in precipitation in combination with increasing intensity of land uses.[13]

The severity of climate change-induced impacts in Southeast Asia is the result of several factors.[14] First, a high concentration of population and economic activity along long coastlines is exposed to sea level rise. Second, the physical impacts of climate change are expected to be unevenly large.[15] Third, the population is heavily reliant on climate-sensitive sectors such as agriculture, fisheries, forestry and natural resources in terms of national income and employment. Fourth, the high incidence of poverty in the region leads to

8 M. L. Parry et al. (eds), *Climate Change 2007: Impacts, Adaptation and Vulnerability*, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Cambridge: Cambridge University Press, 2007), at 765.

9 See Kate Urwin and Andrew Jordan, "Does Public Policy Support or Undermine Climate Change Adaptation? Exploring Policy Interplay Across Different Scales of Governance", 18(1) *Global Environmental Change-Human and Policy Dimensions* (2008), 180.

10 The ASEAN Bangkok Declaration, Bangkok, 8 August 1967.

11 R.V. Cruz et al., "Asia Climate Change 2007: Impacts, Adaptation and Vulnerability" in Parry, *Climate Change 2007*, supra, note 4, at 469.

12 International Centre for Environmental Management (ICEM), Climate Change Adaptation in the Lower Mekong Basin Countries – Regional Synthesis Report (Hanoi: ICEM, 2009); Republic of Indonesia, Indonesia Country Report: Climate Variability and Climate Change, and their Implication (Jakarta: Ministry of Environment, 2007); Than Myint and San Hla Thaw, "Climate Change Adaptation in Myanmar", presentation held at the Second Workshop of the Asian University Network of Environment and Disaster Management, February 2009, available on the Internet at <www.auedm.net/Data/activities/1st%20Workshop/Workshop/U%20Than%20Myint/SecondMyanmar-Climate%20change.pdf> (last accessed on 22 September 2010); Manila Observatory for the Congressional Commission on Science & Technology and Engineering (COMSTE), *Technical Primer on Climate Change in the Philippines* (Manila: COMSTE, 2010); Ministry of Natural Resources and Environment (MNRE) and Government of Vietnam (MNRE), *Climate Change, Sea Level Rise Scenarios for Vietnam* (Hanoi: MNRE, 2009).

13 Parry, *Climate Change 2007*, supra, note 8.

14 See generally Ole Mertz et al., "Adaptation to Climate Change in Developing Countries", 43(5) *Environmental Management* (2009), 743, at 743–744.

15 Jens H. Christensen et al., "Regional Climate Projections" in Susan Solomon et al (eds), *Climate Change 2007: the Physical Science Basis*, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Cambridge: Cambridge University Press, 2007), at 469.

greater vulnerability.[16] Fifth, these countries have limited financial, technological and institutional capacity.

The impacts, as well as the adaptive capacity (that is, what and how to adapt) and vulnerability to climate change vary across the region.[17] Adaptive capacity is constrained by the limited availability of experts, accurate information on the climate change situation at the national level, and adaptation options,[18] as well as scientific uncertainty, the current state of technology, the limited availability of financial resources and short time horizons.[19] There is also uncertainty concerning the effectiveness of adaptation options, for example, the cost of taking action today or after adverse climate impacts occur. Nevertheless, a number of adaptation measures have been adopted and work is ongoing both at the ASEAN level as well as at the national level. The following section examines some of these measures.

III. Legal and Policy Framework

Regional organizations in Southeast Asia have played a relatively small role in international climate change policymaking. ASEAN has been conferred observer status at the United Nations. But as climate change is an area of increasingly complex multi-level governance, adaptation measures have expanded beyond the realm of international policy into regional, national, provincial and local spheres. ASEAN began to pay serious attention to the issues of climate change and sustainable development at the 13th ASEAN Summit held in Singapore in November 2007.[20] Although ASEAN has joined the discussion after other regional/sub-regional organizations, it has undertaken a number of initiatives to complement its climate change mitigation efforts.

1. Regional Framework

The ASEAN Charter, which came into force on 15 December 2008, confers legal personality to ASEAN and makes it rule-based.[21] The Charter enshrines the "ASEAN Way," which is characterized by consensual decision-making based on the principles of sovereignty and non-intervention.[22] To some extent, this has restricted ASEAN's capacity to implement measures at the national level. ASEAN has no central parliament, unlike the European Union. However, the Charter has restructured the organizational framework for environmental cooperation to facilitate more effective implementation, and coordination and mobilization of resources. This envisages more effective governance including in the area of climate change. The hierarchical organizational structure is described below:

The ASEAN Summit is the supreme policy making body and the ASEAN Coordinating Council *inter alia* coordinates the implementation of its agreements and decisions.

There are three ASEAN Community Councils: ASEAN Political Security Community Council, ASEAN Economic Community Council and ASEAN Socio-Cultural Community Council, which addresses environmental sustainability and includes the Working Group on Climate Change (AWGCC).

The ASEAN Sectoral Ministerial Bodies implement the agreements and decisions of the ASEAN Summit under their respective purview. The Secretary-General and the Secretariat are empowered

16 Gary Yohe and Richard S. J. Tol, "Indicators for Social and Economic Coping Capacity: Moving Toward a Working Definition of Adaptive Capacity", 12 *Global Environmental Change: Human and Policy Dimensions* (2002), at 25.

17 See generally Hans Bohle, Thomas Downing and Michael Watts, "Climate Change and Social Vulnerability", 4(1) *Global Environmental Change* (1994), at 37. See also Asian Development Bank (ADB), *The Economics of Climate Change in Southeast Asia: A Regional Review* (Manila: ADB, 2009), at 8–9.

18 Mekong River Commission (MRC), "Adaptation to Climate Change in the Countries of the Lower Mekong Basin", MRC Management Information Booklet Series No. 1, September 2009, available on the Internet at <www.mrcmekong.org/download/free_download/MRC-IM-No1-Adaptation-to-climate-change-in-LMB.pdf> (last accessed on 11 September 2010).

19 Urwin, "Does Public Policy Support", supra, note 9, at 180.

20 The ASEAN Declaration on Environmental Sustainability, the ASEAN Declaration on the 13th Session of the Conference of Parties to the UNFCCC and the 3rd Conference of Parties Serving as the Meeting of the Parties, and the Singapore Declaration on Climate Change, Energy and the Environment recognized the importance of adaptation. The earlier Cebu Resolution on Sustainable Development 2006 also referred to climate change and adaptation.

21 ASEAN, *Charter of the Association of Southeast Asian Nations 2007* (Jakarta: ASEAN Secretariat, 2008).

22 See Gillian Goh, "The 'ASEAN Way' – Non-Intervention and ASEAN's Role in Conflict Management", 3(1) *Stanford Journal of East Asian Affairs* (2003), at 113, and Koh Kheng-Lian and Nicholas A. Robinson, "Strengthening Sustainable Development in Regional Inter-Governmental Governance: Lessons from the 'ASEAN Way'", 6 *Singapore Journal of International & Comparative Law* (2002), at 640.

to facilitate and monitor progress in implementation.

The ASEAN Socio-Cultural Community (ASCC) Blueprint, the ASEAN Economic Community Blueprint and the ASEAN Political Security Community (APSC) Blueprint constitute the Roadmap for an ASEAN Community.[23] ASEAN cooperation on climate change is guided by the ASCC Blueprint, which addresses "environmental sustainability" issues (section D). Transboundary environmental pollution is included under the ASEAN Agreement on Transboundary Haze Pollution 2002. These issues can be distinguished from "transboundary challenges" (section B.10, APSC Blueprint). The ASCC Blueprint also identifies certain priority actions to respond to climate change and to address its impacts. These include encouraging a common understanding of and joint action on climate change issues; developing an ASEAN Climate Change Initiative, which will be implemented by the AWGCC;[24] research; deploying and transferring adaptation measures; enhancing regional capacities for adaptation, and creating public awareness of the need to address the effects of climate change (section D.10).

Further, it is arguable that climate change adaptation can be classified under section B.4 of the APSC Blueprint, which categorizes "transboundary challenges" as non-traditional security issues.[25] Further, section B.5 of the APSC Blueprint calls for strengthening cooperation on disaster management and emergency response under the ASEAN Agreement on Disaster Management and Emergency Response (AADMER).[26] The issues of climate change refugees and extreme weather events that result in food security issues may threaten the security and well being of the member countries and require disaster management. In these cases, while adaptation may be "local," the impacts may spill over boundaries and result in environmental disasters requiring regional cooperation and action.

The APSC Blueprint commits ASEAN to the principle of comprehensive security, which includes not only traditional security (military security) but also Non-Traditional Security (NTS). The NTS approach attributes great importance to issues such as pandemics, climate change impacts and other transnational challenges which can be as threatening to life as traditional security concerns, and enables ASEAN to mobilize support and financial resources from member countries as well as the international community. However, the APSC Blueprint is state-centric and regional cooperation may require the modification or relaxation of the principle of sovereignty in order to enable one country to enter the territory of another country and provide assistance. The adoption of such an approach may require a calibration of the "ASEAN Way." Whether or not this approach will provide an alternative to the ASEAN Way insofar as climate change adaptation is concerned remains to be seen. However, the tide of new regionalism fuelled by globalization and the introduction of the NTS approach into the APSC Blueprint demonstrates a shift towards multi-functional cooperation – within the region and with other entities such as ASEAN's Dialogue Partners – which can be mobilized in times of crisis, as such issues cannot be tackled by individual member states.

Apart from the organizational aspects of climate change governance, the ASCC Blueprint emphasizes implementation and review. The ASCC Council is responsible for overall implementation and to ensure coordination efforts among the three mutually reinforcing Community Councils. The recommended measures include: mainstreaming strategies and actions to incorporate climate change in national development plans; stakeholder engagement in implementation; and establishing appropriate capacity building programs. The ASCC Blueprint also provides for resource mobilization. A communications strategy is being adopted and the ASEAN secretariat is developing indicators to monitor the implementation of the Blueprint. The recent introduction of a "scorecard" pursuant to the reporting requirements under the Charter is a significant step towards the implementation of

23 ASEAN, Roadmap for an ASEAN Community 2009–2015 – One Vision, One Identity, One Community (Jakarta: ASEAN Secretariat, 2009).

24 Cheryl Lim, "ASEAN Ministers Form Working Group on Climate Change", *Channel NewsAsia* (*Singapore*), 29 October 2009.

25 This is in contrast to the traditional understanding of security, which focuses almost exclusively on military threats. See Mely Caballero-Anthony, "Non-Traditional Security Challenges, Regional Governance, and the ASEAN Political and Security Community (APSC)" (Asia Security Initiative Policy Series Working Paper No. 7), 2010, available on the Internet at <www.rsis.edu.sg/NTS/resources/research_papers/MacArthur_working_paper_Mely_Caballero-Anthony.pdf> (last accessed on 22 February 2011).

26 The ASEAN Agreement on Disaster Management and Emergency Response, Vientiane, 26 July 2005, in force 24 December 2009.

agreements and initiatives. It is also a step forward in ASEAN's commitment to regional cooperation for environmental issues.

2. Sectoral Climate Change Adaptation

Several adaptation initiatives in the region are related to natural disasters. ASEAN recognizes the importance of disaster risk reduction measures as immediate response measures for climate change adaptation. The ASEAN Committee on Disaster Management seeks to include adaptation in the relevant strategic components of the AADMER Work Program (2010–2015). Similarly, one of the objectives of the tripartite Memorandum of Cooperation on Disaster Risk Reduction between the ASEAN Secretariat, the United Nations International Strategy for Disaster Reduction and the World Bank is capacity building in the areas of disaster risk reduction and climate change adaptation.[27]

Food security is one of the most crucial issues relating to adaptation. Many member countries rely on agriculture, fisheries and forestry for livelihood and employment, and the adverse effects of temperature increase on agricultural productivity in Asia are well documented. The ASEAN Multi-Sectoral Framework on Climate Change: Agriculture, Fisheries and Forestry Towards Food Security (AFCC Framework) represents a comprehensive and strategic approach to address the impacts of climate change. Its overall goal is to contribute to food security through sustainable, efficient and effective use of land, forest, water and aquatic resources by minimizing the risks and impacts of and the contributions to climate change.[28]

AFCC is closely linked with the existing ASEAN Integrated Food Security (AIFS) Framework and the Strategic Plan of Action on Food Security in the ASEAN Region (SPA- FS) 2009 -2013.[29] Its four components seek to (i) integrate climate change adaptation strategies into the socio-economic development policy framework; (ii) cooperate on the implementation of adaptation measures; (iii) strengthen national and regional knowledge sharing, communication and networking on climate change and food security; and (iv) develop a more comprehensive multi-sectoral strategic framework and a roadmap for implementation.

Adaptation to climate change also forms a part of ASEAN actions to prevent transboundary haze pollution. The Regional Haze Action Plan 1997 is a framework plan to guide the process of strengthening Southeast Asia's capability to address transboundary haze pollution.[30] The ASEAN Agreement on Transboundary Haze Pollution 2003 provides the legal framework for its implementation. The objectives are to prevent and monitor transboundary haze pollution resulting from land and/or forest fires through concerted national efforts and international cooperation. However, although the agreement is legally binding, it has no punitive measures,[31] which affects its ability to support adaptation activities.

Southeast Asia has witnessed increasing urbanization, as a result of which the majority of the population lives in cities. ASEAN recognizes the need for the development of resilient cities and supports various initiatives such as eco-cities. The Singapore-Tianjin Eco-city project is one such example where Singapore entered into a joint venture with China in 2007. ASEAN and its member countries are also involved in other regional adaptation initiatives. These include the United Nations Environment Program (UNEP) Southeast Asian Climate Change Network, which provides technical support to Southeast Asian country governments to meet their commitments under the UNFCCC. The Network aims at building capacities of national climate change focal points and professionals by facilitating knowledge generation and sharing, and simultaneously providing targeted support using a regional networking approach. It specifically aims

27 ASEAN, United Nations International Strategy for Disaster Reduction (UNISDR) and the World Bank, "ASEAN-UN-World Bank Set to Collaborate to Reduce Disaster Risk", Joint Press Release, 18 May 2009, available on the Internet at <www.aseansec.org/PR-ASEAN-UN-WB-SettoCollaborateto ReduceDisasterRisk.pdf> (last accessed on 5 August 2010).

28 See ASEAN, "ASEAN Multi-Sectoral Framework on Climate Change: Agriculture, Fisheries and Forestry Towards Food Security (AFCC)", November 2009, available on the Internet at <www.ccmin.aippnet.org/pdfs/ASEANCCFrameworkANNEX% 2013AFCCfinal.pdf> (last accessed on 12 August 2010).

29 ASEAN Integrated Food Security (AIFS) Framework and the Strategic Plan of Action on Food Security in the ASEAN Region (SPA- FS) 2009–2013, Thailand, 1 March 2009, adopted on 1 March 2009, available on the Internet at <www.aseansec.org/ 22338.pdf> (last accessed on 24 September 2010).

30 ASEAN, *Regional Haze Action Plan* (Jakarta: ASEAN Secretariat, 1997).

31 As of March 2010, the agreement has been ratified by all the AMCs (except Indonesia). See ASEAN Agreement on Transboundary Haze Pollution, Kuala Lumpur, 10 June 2002, in force 25 November 2003, available on the Internet at <www.haze.asean.org/hazeagreement/> (last accessed on 12 August 2010).

to improve readiness for technology transfer. ASEAN is also involved in the Regional Climate Change Adaptation Knowledge Platform for Asia, which facilitates information sharing and developing adaptive capacities in Asian countries.

ASEAN's adaptation efforts depend on developed countries for financing, technology transfer and capacity building/enhancement.[32] The ASEAN-United States leaders have agreed to strengthen collaboration in climate impacts research and in the development and implementation of appropriate policies and measures.[33] Similarly, ASEAN, China, Japan and the Republic of Korea are cooperating for adaptation and to strengthen cooperation in meteorology addressing climate information and prediction services, weather observations and climate change.[34]

However, the "ASEAN Way" restricts the local impact of regional adaptation initiatives, unless they can be classified as NTS issues. ASEAN has developed a combination of reactive and proactive adaptation measures, most of which have been reactive. *Several of the initiatives (and policy statements) do not impose legally binding obligations and they are, at best, described as soft law.* ASEAN's ability to support regional climate change adaptation actions is also dependent on external agencies without exit strategies and/or financial commitments from national governments. This can restrict the scope of the measures. Further, while ASEAN has been proactive in the development of adaptation-related programs, implementation has been limited. The absence of effective mechanisms to address the issues of monitoring, reporting, sanctions and non-compliance constrains their effectiveness. In this regard, *the Working Group on Climate Change can play an important role.*

3. National Adaptation policy development

The national legal and institutional frameworks for adaptation are equally important. All of the member countries are classified as non-Annex I countries in the UNFCCC and therefore have no obligation to undertake emissions reduction commitments. Nevertheless, several of them have established national governmental bodies with responsibility for the development and implementation of policies, plans and measures to address climate change issues. Table 1 outlines the institutional framework for climate change at the national level.

Although the environmental agency is the national focal point of climate change in many member countries, the integration of climate change into socio-economic development-related policies, plans and programs is being encouraged. Countries have also started strengthening their adaptive capacity and ASEAN acts as a conduit for the transfer of knowledge, as well as financial and technical assistance.

Articles 4(1) and 12(1) of the UNFCCC require parties to communicate certain information and all member countries (except Brunei and Myanmar) have submitted their Initial National Communication. UNFCCC has also issued guidelines for inclusion of adaptation issues in national communications. Most national communications acknowledge the importance of adaptation and stress the need for increased research in order to develop and implement adaptation measures. However, although some national communications (such as Cambodia, Singapore, Thailand and Vietnam) include a separate chapter on vulnerabilities and adaptation, a clear, coherent and detailed adaptation policy or strategy is generally absent.[35]

Nevertheless, the policy frameworks of the member countries are beginning to recognize the importance of adaptation. Indonesia's National Action Plan Addressing Climate Change (RANPI) provides government institutions with initial guidance to undertake coordinated and integrated efforts to address adaptation.[36] Adaptation is identified as a key aspect of the national development agenda and its integration into the national development plans is the long-term objective.[37] In December 2007, the National Development Planning Agency (BAPPENAS) published a document aimed at strengthening and reinforcing the

32 ASEAN Joint Statement on Climate Change to the 15th Session of the Conference of the Parties to the UNFCCC and the 5th Session of the Conference of Parties serving as the meeting of Parties to the Kyoto Protocol, Cha-am Hua Hin, Thailand, 24 October 2009; and ASEAN Leaders' Statement on Joint Response to Climate Change, Ha Noi, Vietnam, 9 April 2010.

33 Joint Statement – 1st ASEAN-US Leaders' Meeting, Singapore, 15 November 2009.

34 ASEAN Plus Three Cooperation Work Plan (2007–2017), paras 2.2 and 7.4.

35 Sadhavi Sharma, "Integrating Adaptation into Development Policy in Southeast Asia", 2 *NTS Alert* (2010).

36 Republic of Indonesia, *National Action Plan Addressing Climate Change* (Jakarta: State Ministry of Environment, 2007).

37 Sharma, "Integrating Adaptation", supra, note 35.

	National UNFCCC Focal Point	National Agency for Climate Change Policy	National Agency for Adaptation Policy
Brunei Darussalam	Department of Environment, Parks and Recreation	National Council on Climate Change	–
Cambodia	Ministry of Environment	National Climate Change Committee	Ministry of Environment, Department of Planning and Legal Affairs: Climate Change Office
Indonesia	Ministry of Environment: Climate Change Division	National Committee on Climate Change and Environment; National Council for Climate Change	Ministry of Environment: Subdivision of Adaptation to Climate Change
Lao PDR	Department of Environment: Water Resources and Environment Administration	National Steering Committee on Climate Change	–
Malaysia	Ministry of Natural Resources and Environment	National Steering Committee on Climate Change	–
Myanmar	National Commission on Environmental Affairs	–	–
Philippines	Presidential Task Force on Climate Change	Inter-Agency Committee on Climate Change; Presidential Task Force on Climate Change; Advisory Council on Climate Change Mitigation, Adaptation and Communication	Climate Change Commission
Singapore	Ministry of Environment and Water Resources	National Climate Change Committee; National Climate Change Secretariat	Ministry of National Development: National Adaptation Taskforce
Thailand	Ministry of Natural Resources and Environment: Office of Natural Resources and Environmental Policy and Planning	National Committee on Climate Change; National Board on Climate Change Policy and Climate Change Coordinating Unit	–
Vietnam	Ministry of Natural Resources and Environment: Department of Meteorology, Hydrology and Climate Change	National Climate Change Committee	Ministry of Natural Resources and Environment: Thematic Ad Hoc Working Group on Climate Change Adaptation

Table 1: Institutional Framework

National Medium-Term Development Plan (RPJMN) 2004–2009 as well as to include inputs that can guide the integration of considerations of climate change into the preparation of RPJMN 2010–2014.[38] The Indonesia Climate Change Sectoral Roadmap 2010 aims to expedite the implementation of these documents and mainstream climate change issues into national development planning.[39] It includes Indonesia's (draft) Climate Change Adaptation Program(ICCAP), which "aims to embed a climate risk and opportunity management mechanism within national, provincial and local development plans."[40] However, any other specific policies are still absent.

The Medium Term Philippine Development Plan (MTPDP) for 2004–2010 guides national development programs and refers to climate change adaptation in the context of disaster risk reduc-

38 National Development Planning Agency (BAPPENAS), *National Development Planning Response to Climate Change 2008* (Jakarta: BAPPENAS, 2008).

39 BAPPENAS, Indonesia Climate Change Sectoral Roadmap ICCSR – Synthesis Report (Jakarta: BAPPENAS, 2010).

40 Bernadette P. Resurreccion, Edsel E. Sajor and Elizabeth Fajber, *Climate Adaptation in Asia: Knowledge Gaps and Research Issues in South East Asia* (Kathmandu: Institute for Social and Environmental Transition, 2008), at 64.

tion.[41] However, the recently updated MTPDP shows progress in mainstreaming adaptation.[42] The Philippine Climate Change Act of 2009 also recognizes the inter-linkage between climate change and disaster risk reduction and mandates the integration of disaster risk reduction into climate change programs and initiatives. The 12-year National Framework Strategy and Program on Climate Change also addresses adaptation. The Philippine Information Agency is responsible for disseminating information on climate change, local vulnerabilities and risk, relevant laws and protocols, and adaptation measures.

Brunei is developing a Nationally Appropriate Mitigation Action Plan,[43] but there is no policy document on adaptation. Malaysia formulated a National Policy on Climate Change in 2009. Singapore's national adaptation policy is embodied in the National Climate Change Strategy of 2008. Thailand's Strategic Plan on Climate Change (2008–2012) includes capacity building measures for adaptation and reduction of vulnerabilities. The draft of the National Master Plan on Climate Change (2010–2019) was completed in 2009 and consultations are ongoing. Vietnam's "National Strategy for Environmental Protection until 2010 and vision toward 2020" includes adaptation measures for reducing the impact from sea level rise in coastal zones. The "National Target Program (NTP) to Respond to Climate Change 2008" establishes directions for the development of sectoral and geographic adaptation action plans. The Ministry of Agriculture and Rural Development is developing an Action Plan for Adaptation and Mitigation.

UNFCCC recognizes the specific needs and special situations of least developed countries with limited ability to assess vulnerability and adapt to climate change.[44] National Adaptation Programs of Action (NAPAs) provide a process to identify priority activities that respond to their urgent and immediate adaptation needs.[45] The United Nations Development Program and the Global Environment Facility have supported the design and implementation of NAPAs in Cambodia and Lao PDR, while the NAPA for Myanmar is under preparation.

As some countries are more directly affected by certain impacts of climate change, ASEAN's limited mandate does not preclude the proliferation of subregional initiatives. The Mekong River Commission, which includes four ASEAN member countries (Cambodia, Lao PDR, Thailand and Vietnam), supports regional collaboration and responses to the impacts of climate change.[46] This initiative has been adopted and supported by ASEAN. The creation of a Greater Mekong Climate Change Adaptation Agreement is also being encouraged. Similarly, Indonesia, Malaysia and the Philippines are collaborating under the World Wildlife Fund's Coral Triangle Initiative to implement adaptation measures for the marine environment.

However, these countries are still at a nascent stage of policy development, and it is important to review the operationalization/ implementation of their adaptation measures in order to determine effectiveness. Further, as in the case of ASEAN, many of these countries rely on external assistance, which raises concerns about the long-term sustainability of their adaptation measures. This is particularly relevant in the case of climate change where the adverse impacts may only manifest themselves in the long-term.

IV. Conclusion

Adaptation is an ongoing, flexible process that seeks to increase resilience to present and future risks. It is necessary to develop and adopt a proactive, systematic, and integrated approach that is cost-effective and offers durable and long-term solutions. Within ASEAN, adaptation to climate change is considered at two levels. At the subregional level, ASEAN provides a consultative platform to strengthen regional coordination and cooperation on climate change. It also collaborates with

41 National Economic and Development Authority (NEDA), *Medium-Term Philippine Development Plan 2004–2010* (Manila: NEDA, 2004).

42 NEDA, Updated Medium Term Philippine Development Plan 2004–2010 (Manila: NEDA, 2009).

43 Ubaidillah Masli, "Sultanate Developing its Own Nama Plan", Brunei Times, 23 July 2010.

44 UNFCCC, *Climate Change*, supra, note 1, at 16.

45 See UNFCCC, "National Adaptation Programs of Action (NAPAs)", available on the Internet at <www.unfccc.int/national_reports/napa/items/2719.php> (last accessed on 22 September 2010).

46 See Pornsook Chongprasith, "Mekong Climate Change and Adaptation Initiative", presentation held at the MRC Summit and International Conference, Thailand, 2 April 2010, available on the Internet at <www.mrcsummit2010.org/Presentations/2-3_Dr.Pornsook-CCAI.pdf> (last accessed on 12 September 2010).

international organizations to engage in research and knowledge sharing. Further, ASEAN is developing policies to incorporate adaptation measures into national development policies and strategies in accordance with sustainable development; enhancing participation in international efforts to address climate change and assess its impacts on socio-economic development, health, environment and water resources, including activities that aim to build adaptive capacities and support adaptation actions; and developing an action plan to better understand and respond to climate change. The AWGCC is developing a common position on adaptation in accordance with the Bali Roadmap of 2010, while the ASEAN Working Group on Sustainable Cities is considering innovative approaches to counter the effects of climate change.

Unlike mitigation, critical adaptation decisions tend to emerge and remain more visible at the local level. Therefore, while ASEAN can provide the basis for regional collaboration, it is ultimately the national, regional and local governments that initiate appropriate measures and provide the necessary support system. Many developing countries initially prioritized the more immediate needs of economic growth and poverty reduction over climate change.[47] However, this is being replaced with a holistic approach. The recent floods, droughts within (and outside) the region, and the unlikelihood of reaching international agreement after 2012 has created an urgency at the national level and within different regions to accelerate the effort to incorporate adaptation into the planning process. Many member countries have established national committees to consider adaptation policies and strategies. However, the absence of strong inter-governmental policy and planning coordination among various ministries and different levels of government has adversely affected the development and implementation of appropriate adaptation strategies. Increasing public awareness of climate change and its impacts, including uncertain, future impacts, must be done through stakeholder engagement in the identification of appropriate measures. Government agencies must also be educated.

It is also important to remember that climate risks and adaptation priorities vary across regions, countries and sectors. There is no one-size-fits-all adaptation strategy, and approaches should be based on local resources and constraints. This is especially important in Southeast Asia where regional organizations, such as ASEAN, as well as regional, national and local adaptation initiatives depend upon the availability of international funding and technology transfer, *inter alia*, to undertake research and development in a number of key areas. These areas include climate and economic modeling, improving technologies, and supporting vulnerability analysis and impact assessments in order to generate high quality information that improves understanding of climate change, its impacts, adaptation needs, and the appropriate design and implementation of adaptation measures. Finally, merely developing adaptation policies is not enough. There are several examples of policies made at different levels of governance that have failed to achieve the desired outcome. It is therefore important to monitor their implementation. ASEAN's restructured governance architecture and its newly established working groups hold the promise for a more effective governance framework to meet the challenges.

47 Mertz, "Adaptation to Climate Change", supra, note 14, at 744.