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Examining the coherence of legal frameworks for ecosystem services toward sustainable mineral development in the Association of Southeast Asian Nations

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ABSTRACT

Within the context of growing economic integration in the Association of Southeast Asian Nations (ASEAN), recent questions have been raised with regard to how member states employ law as a means of regional integration to promote sustainable development. Taking into account the primacy of ecosystem services for sustainability, this study examines the coherence of legal frameworks for ecosystem services among ASEAN member states toward a unified regional legal agenda for sustainable mineral development. Analyzed along three aspects of the Ecosystem Services Approach, the paper reviews the different mining related legislations and implementing regulations of member states, and examines whether there is convergence in their legal provisions for ecosystem services. The study shows that all member states provide legal mechanisms for ecosystem management in their mining operations. However, the following could be noted: 1) a lack of coherent identification and targeting of ecosystem services despite 'intermediate' services being embedded in provisions for ecosystem conservation; 2) a lack of legal provisions for integration of ecosystem services in mining impact assessments, and for ecosystem services valuation, which render environmental impact assessments, compensation structures and royalty regimes inadequate; and 3) a density of legal differentials around how states allocate regulatory authorities for ecosystem management in mining. These represent a prevailing fragmentation among member states' legal frameworks for ecosystem services, which does not create an enabling condition for legal integration in ASEAN's regional mineral strategies for sustainable development.

1. Introduction

The critical importance of ecosystem services has been emphasized in the Millennium Ecosystem Assessment (MEA), which defined them as "the benefits people obtain from ecosystems" or "services on which human beings depend" (MEA, 2005, pp. v-vi). Since then, it has become increasingly acknowledged that the failure to account for ecosystem services in any economic activity can compromise sustainability (Landsberg et al., 2013; MEA, 2005; Ruhl et al., 2007; The Economics of Ecosystems and Biodiversity -TEEB, 2010). However, amid their "rapid degradation" (MEA, 2005, p. 67), it has been argued that prevailing environmental regulation could not effectively protect ecosystem services. Ruhl et al. (2007, p. 10) noted that, "(a)lthough a consensus is building that ecosystem services hold tremendous values... regulatory frameworks... for efficiently managing ecosystem services have not materialized." These created the impetus to reexamine the agency of the law and reevaluate whether and how the legal structures respond to efficient management of ecosystem services. The prevailing thrust therefore is to refocus public law and policy, and craft a legal infrastructure to value, account for, and prevent the loss of vital ecosystem services.

This study makes a contribution by examining whether and how existing national legal frameworks in the context of regional economic integration are arranged for ecosystem services promotion. It is anchored to recent questions raised with regard to how states employ law as a means of regional integration within the context of environmental conservation and sustainable development promotion. Looking at the case of the Association of Southeast Asian Nations (ASEAN) [1], Koh et al. (2016, p. 32) noted that

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[1] ASEAN is a fast expanding trade bloc in Asia with a combined population of over 620 million. Its aggregate size surpasses US$2.4 trillion, with average annual GDP growth of around 5 percent over the past decade (Hong Kong Trade Development Council, 2016).

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"analysis of the national environmental law regimes in each of the ASEAN nations is essential to understanding how integration through law has progressed with respect to environmental protection." Taking off from this agenda, this study specifically looks at the legal aspects of ecosystem services in mineral development and their coherence among member states. It then analyzes its implications for legal integration, amid ongoing initiatives to promote sustainable mineral development in regional trade policy.

The ASEAN was established on 8 August 1967 in Bangkok, Thailand, with the signing of the ASEAN Declaration (Bangkok Declaration) by its five founding members namely Indonesia, Malaysia, Philippines, Singapore and Thailand. Brunei Darussalam then joined on 7 January 1984, Viet Nam on 28 July 1995, Lao PDR and Myanmar on 23 July 1997, and Cambodia on 30 April 1999. The regional cooperation among the ten member states is based on an inter-governmental agreement to coalesce and share in the responsibility of strengthening the economic and social stability of the region. In 2015, the ASEAN Community was established to build a more closely integrated regional economy, security cooperation and stronger socio-cultural linkages. It is comprised of three pillars and their corresponding blueprints: political-security community; economic community; and socio-cultural community.

Ewing-Chow (2013, p. 284) noted that since its establishment in 1967, the ASEAN has "relied more on diplomacy rather than law... Consultation, consensus and declaratory statements were used to manage political relations within the region, while treaties denoting binding legal obligations were few." However, he noted that as member states signed the ASEAN Charter in 2007, the legal and institutional discourses were brought to the forefront. Entered into force on 15 December 2008, the Charter has become a legally binding agreement, which serves as foundation for treaties and protocols, and sets accountability and compliance of obligations.

The ASEAN's initiative toward integration for sustainable mineral development took off in 2005 with the First ASEAN Ministerial Meeting on Minerals held in Malaysia. In 2007, mining cooperation was a major item in the ASEAN Economic Community Blueprint. Then in 2008 with the Second ASEAN Ministerial Meeting on Minerals, the Manila Declaration on Intensifying ASEAN Minerals Cooperation highlighted the harmonization of mineral policies among member states. It further progressed in 2011 ASEAN Ministerial Meeting on Minerals, the Hanoi Declaration, which produced the ASEAN Minerals Cooperation Action Plan (AMCAP II) 2011-2015, promoting environmentally and socially sustainable mineral development. Recently, the final draft of the ASEAN Minerals Cooperation Action Plan (AMCAP III) 2016-2025 has been released, reaffirming ASEAN's commitment to developing greater integration in the mining sector. As a core strategy it enjoins all member states "to consider the environmental impacts of mining to people, biodiversity, forests and water... to ensure that all mining activities in the ASEAN region are conducted sustainably, both during and after mining." Mineral development is a key component of the ASEAN Economic Community, which signaled the start of free trade between the ten member states where economies will be liberalized to achieve the goal of ASEAN becoming a single market and production base.

Mining is a critical industry that poses direct impact on ecosystem services. The most affected by mining operations are the delivery of ground and freshwater ecosystem services derived from forests, rivers, aquifers and lakes, which are compromised by direct water consumption by mining and pipelines, pollution of surface/-groundwater, and decrease of groundwater level and flow (Hammond et al., 2013; Neves et al., 2016). These are critical provisioning services for households, agriculture and traditional livelihoods. Regulating services such as water filtration, control of erosion and flood are also compromised as the loss of wetlands may affect the timing and quantity of water runoff and aquifer recharge. Moreover, a mining operation may affect the quality of a location's cultural services such as tourism and recreation, or disturbing an ecosystem valued by indigenous people, hikers or campers by degrading the landscape or destroying landmarks with geographical, historical or identity value (McIntyre et al., 2014; Neves et al., 2016; World Resources Institute, 2008). Essentially, the industry's growth compels for a careful regulatory/legal configuration if mining policy and governance are to be responsive to promoting ecosystem services and sustainable development. Particularly within the context of expanding mineral resource production as a core agenda to accelerate regional trade, it is crucial to revisit whether and how nations coordinate their legal frameworks to enhance the sustainability of domestic ecosystems and its services affected by mining.

Along three critical aspects of the Ecosystem Services Approach, a comparative analysis done in this study illustrates the lack of coherent identification, targeting and systematic integration of ecosystem services in environmental regulations for mining. Notably, promotion of ecosystem services are sporadically embedded in broad legal provisions for ecosystem conservation. Moreover, there is a density of legal differentials[2] among member states in the allocation of regulatory authorities and public participation in ecosystem management in mining. These signify the prevailing fragmentation among member states' legal frameworks for ecosystem services in mining, which do not facilitate an enabling condition for legal integration in ASEAN's regional mineral strategies for sustainable development.

2. Legal aspects of ecosystem services: a framework

This study is designed to analyze and compare the national legal frameworks for ecosystem services in the context of regional integration in mineral development. Studying the case of the ASEAN, the paper examines the coherence and convergence of mining laws among member states toward ecosystem services promotion, and its implications for regional legal integration for sustainable mineral development. It is anchored to the premise that recognizes the agency of the law as a tool for integration, particularly environmental legal integration, toward promoting ecosystem services in the context of regional economic and mineral development cooperation.

Environmental legal integration is taken to mean in the study as the process by which a binding supranational system of environmental rule-of-law has been established among member states of an economic community. In the context of regional mining cooperation, this involves reconciling of conflicts among mining laws and rules of member states toward a unified regional legal agenda for sustainable mineral development. The idea is that coherence in mining laws and regulation for ecosystem services promotion among member states, provide an enabling legal environment toward a binding regional rule-of-law that promotes sustainable mining at both the national and regional levels. The premise here is that environmental legal integration begins with effective national environmental law regime, as argued by Koh et al. (2016, pp. 32,30):

> International environmental agreements and multilateral environmental agreements... have the effect of harmonizing norms and standards across all nations... but the(ir) realization depends on effective national environmental regimes as the building blocks of the international system/ Integration through environmental law requires that each nation has a stable

[2] Legal differentials denote the disparities and incongruences in scope and substance of legal frameworks among member states.

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