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Navigating the Climate Emergency:
The Crucial Role of Adaptive Decision Support Systems in ASEAN's Disaster Management

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SYNOPSIS

*Decision support systems are instrumental in facilitating strategic Humanitarian Assistance and Disaster Relief operations and planning. Global foresight reports and the synergistic approach towards climate change risk management have set tough standards for regional-scale systems. **KEITH PAOLO C. LANDICHO** proposes that while ASEAN has made strides, there are still challenges in harmonising efforts and shifting to a proactive perspective.*

COMMENTARY

The Index for Risk Management (INFORM) Report for 2023 by the Inter-Agency Standing Committee and the European Commission presents the latest results of its risk and severity indexes, as well as analyses of historical trends and future projections relating to humanitarian crises and disasters. The suite of information synthesises hazard, demographic, and socioeconomic information and projections. The addition of a climate change component – INFORM Climate Change – in 2022 showcases foresight and synergy in analysing climate change risks. Since its first report released in 2014, INFORM has set the benchmark for the development of humanitarian crisis decision support systems.

Regionally-led efforts like ASEAN's 2018 Regional Risk and Vulnerability Assessment (RVA) paved the way for informed decision-making, guiding long-term disaster risk reduction and management. This and succeeding editions have developed concurrently with their global counterparts, signifying ASEAN's commitment to

sustainable resilience. However, ASEAN's approach to addressing pandemics, socioeconomic conditions, and disasters remain siloed, evident in the ASEAN RVA. The reactionary development and myopic scope of the regionally-led decision support system sets a precarious precedent, especially in the midst of the climate emergency.

Decision Support Systems

Decision support systems are a collection of information that provides contextual and integrated analysis. The latest edition of the global decision support system INFORM presents Risk, Severity, and Climate Change components to inform a range of functions, including development, crisis preparedness and response, adaptation, and mitigation. INFORM Climate Change, in particular, presents a climate change risk index that integrates all components of each dimension of risk (hazard, exposure, vulnerability, and coping capacity). It includes future projections in various scenarios, i.e., atmospheric concentrations of greenhouse gases and other radiative forcings, and potential changes in socioeconomic factors over the next century.

The ASEAN RVA presents a singular risk score – similar to INFORM Risk – to measure the multiple drivers of risk. However, compared to ASEAN RVA, key information is more clearly highlighted by INFORM's dynamic, anticipatory nature, and its development trends. While ASEAN RVA tackles risk as a result of hazard and exposure, vulnerability, and lack of coping capacity, INFORM tackles risk and climate change together, recognising their interconnectedness, along with potential trends.

Role of Decision Support Systems in Humanitarian Assistance and Disaster Relief

Decision support systems are used by all kinds of humanitarian actors – the World Food Programme (WFP), the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), the International Federation of Red Cross and Red Crescent Societies (IFRC), the World Health Organization (WHO), and the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Centre). INFORM, in particular, has supported risk analysis, preparedness and response planning, and efficient funding allocation in Humanitarian Assistance and Disaster Relief (HADR) operations globally.

The AHA Centre has facilitated over 40 emergency responses as the primary coordinating agency for HADR in Southeast Asia. Its repository of situation reports showcases reliance on decision support systems to facilitate a timely and effective response.

Considering the convergence of climate change and the increasing magnitude, frequency, and severity of disasters, the risk landscape is obviously changing. The additional pressure for a region like ASEAN piles on its notable geographic vulnerabilities and limited resources. The role of decision support systems, such as INFORM and the ASEAN RVA, could not be more vital as informed decision-making is crucial to safeguarding lives, minimising economic losses, preventing secondary effects, and adapting to the climate emergency.

Floods in Pampanga, the Philippines, August 2023. Given the increasing climate uncertainties and evolving risks, synergistic decision support systems, such as the recently released INFORM, are vital in providing comprehensive integrated risk analyses and aiding response planning for global Humanitarian Assistance and Disaster Relief (HADR) operations. *Image from Wikimedia Commons.*

ASEAN's Efforts

Studies conducted by the AHA Centre in collaboration with the Pacific Disaster Center (PDC-Global) in 2019, 2020, and 2022 have worked towards a regional-scale decision support system for climate change adaptation. The computation of a risk index (hazard, exposure, vulnerability, and lack of coping capacity) forms the basis of the joint study. The 2019 study compared the INFORM and RVA indices side by side and revealed majorly consistent and similar findings. The 2020 study embarked on a trend analysis and placed ASEAN member states in the changing risk landscape. The latest study in 2022 aimed to depart from ASEAN's differentiation of pandemics from natural hazards with a closer likeliness to INFORM, considering the convergence of COVID-19, climate change, and the existing disaster risk landscape.

The AHA Centre is also working towards strengthening the existing ASEAN Joint Disaster Response Plan (AJDRP). This stems from challenges and needs that have been identified by the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Priority Programme 3 Preparedness and Response. Identifying potential disaster risk scenarios in the AJDRP ties in regional efforts to scale and adapt to converging impacts of climate change and the increasing magnitude, frequency, and severity of disasters – a testament to the region's strategic foresight in HADR.

Furthermore, Canada's Department of Foreign Affairs, Trade and Development (DFATD) entrusted the AHA Centre with the implementation of a five-year project, "Improving ASEAN's Humanitarian Assistance Capacity in Multi Hazards". The project aims to address the socioeconomic component of the climate emergency by raising awareness of how climate change and disasters affect individuals differently. This is done through capacity building in emerging complex crises and inclusive HADR.

Efforts in creating a decision support system that is adaptive to emerging challenges have become apparent in the ASEAN region, but the challenge remains in reaching a synergistic approach. Taking a multidimensional approach (e.g., ASEAN efforts through the AHA Centre) and synthesising the plethora of information into an integrated and comprehensive decision support system allows ASEAN, or any region, to navigate the climate emergency strategically, proactively, and in an informed manner.

Moving Forward

ASEAN's commitment to sustainable resilience paves the way for the development of resilient disaster management systems in the region. Despite existing operating procedures and arrangements being instrumental for ASEAN, older data forming the basis of legacy decision support systems pale in comparison to present day risks. [The number of disaster deaths reported in 2022 is twice the 2002-2021 median of 16,011](#) – the harsh reality of the climate emergency.

Moreover, in this era of climate uncertainty and evolving risks, synergistic decision support systems are of paramount importance. They enable tailored response to challenges posed by changing climate patterns and geographic vulnerabilities. Their role in strengthening resilience cannot be overstated but can be easily overlooked when the components remain siloed. Looking into the future of climate change-amplified crises, leveraging data and insights from these decision support systems will be crucial in mitigating the impact of disasters, especially for vulnerable groups and communities.

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