Network governance in addressing climate change: a case study of the Asian Cities Climate Change Resilience Network (ACCCRN) in Indonesia

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Abstract. The Asian Cities Climate Change Resilience Network (ACCCRN) is an international institution assisting the Indonesian government to address climate change by incorporating many institutions. Nevertheless, we still lack an understanding of how the network is established in the process of handling climate change between ACCCRN and related agencies in Indonesia. This paper examines network governance during the involvement of ACCCRN in Indonesia. The purpose of the paper is to explore the network established by the ACCCRN in helping the Indonesian government to reduce the impact of climate change. We used a desk study by employing secondary sources to identify the actors, the relationship among the actors, and the outcome of the networks. We suggest that ACCCRN has played a crucial role in reducing the impact of climate change by cooperating with various organisations in Indonesia. In doing so, there are a number of public and non-profit agencies encompassed in the process of collaboration. This study recommends the government to maintain and increase numerous partnerships between international and local institutions in arranging climate change.
1. Introduction
Climate change is a transformation caused either directly or indirectly by human activities that alter the composition of the global atmosphere and the variability of natural climates over comparable periods [1]. It has become a crucial issue in Indonesia in the last decade. Climate change increases the temperature in Indonesia. This increase in surface temperature will surely change climate trends in Indonesia, starting from reduced rainfall in the dry season or increasing rainfall in the rainy season. It has yielded in decreasing water availability and increased incidence of floods and landslides. Lack of water supply in agricultural areas can lead to crop failures, changes in planting and harvest periods, or the emergence of pests and disease outbreaks [2]. Moreover, Indonesia is an agrarian country; certainly, it will be increasingly vulnerable to climate change. The supply of fish production from the sea also decrease due to coral bleaching, the habitat will be damaged so that the ecosystem process does not run well. In other words, climate change and its impact have become a nightmare for many people around the world, including Indonesia.

A number of actors get involved in government policy to decrease climate change. In many countries, various actors have paid attention to the climate change campaign, such as the government, private sectors, non-profit organisations, and civil society or non-governmental organisation. Civil society organisation (CSO) can participate in the program of reducing the impact of climate change. CSO not only enacts a role as a critical organization but also can actively join to implement specific activities to reduce the negative effects of climate change in certain countries. The engagement of civil society organisation is in a framework to strengthen the relationship between state and non-state entities in the governance structure. According to Gough and Shackley, there are three types of a non-governmental organisation, including campaigners, think tanks, and business alliances [3]. Campaigners are CSO committed to criticising government policy. Think tanks CSO focused on providing scientific research to challenge the decision of the government. The business alliance’s CSO represents the business interest of the firms.

A large number of studies have addressed the involvement of the civil society organisation in the plan of climate change. If several investigations focused on the political dimension of health [4], another applied political [5] and cultural approach [6] in understanding the pivotal role of civil society in the campaigns and actions of climate change. Interestingly, the research explaining the participation of international CSO and aids in helping the programme of climate change reduction in developing countries is relatively few. Besides, it was ordinarily mentioned about the variety of the participation of international institutions in climate change [7]. Therefore, this study aims at filling the research gap in current research of the politics of climate change by elaborating the engagement of international institutions in assisting the Indonesian government to reduce the effect of climate change. We seek the role of the Asian Cities Climate Change Resilience Network (ACCCRN) in Indonesia’s climate change actions. In particular, we outline the programme conducted by the ACCCRN in helping national and local government in Indonesia. We then analyse the network governed through the participation of the ACCCRN in the programmes.

The rest of this paper describes the research methods used in the research. It covers research design and strategy, study sites, and the procedure of data analysis. The subsequent section presents results and discussion organized in three subsections, involving the description of the ACCCRN, the programme, and discussing the findings with a network governance lens and prior research. The last section contains a brief conclusion of the paper.

2. Methods
This research was conducted on desk research by employing secondary sources. Desk study is a method of collecting data and information through data and information screening and analysis using secondary data, either in the form of internal or external documents of an organization, laws and other government regulations, reports, statistics, literature studies, maps, internet sources, and so on [8]. This research specifically utilized data from an online source, the website of the ACCCRN (https://www.acccrn.net/). It was possible to be reached for the study because of two reasons. First, the intention of this research
solely described the programme and network governance of the ACCCRN. Second, the data provided on the website are incredibly available to fill the objectives of the research.

The process of gathering the data consisted of three stages, namely identifying, reducing, and concluding. We used the forms proposed by Provan and Kenis in formulating variables of network governance [9], involving the actors, activities, goals, and management. Data analysis in this study was carried out by describing each important data, classifying it into various categories by coding, and linking one data to another, as well as between one study and another. The coding is the process in which the data collected from the field were arranged according to certain categories, then the data were selected according to the needs of the analysis and combined again. It was performed by proposing the data in several themes associated with the research topics. Furthermore, these data were interpreted by giving meaning to the results of research findings, finding the significance of these findings, why these findings could be like that, and explaining the research results following the context of the research. Then, the researcher attempted to find the meaning of these findings and understand them based on their objective conditions. By interpreting these findings, it can answer the questions posed in this study comprehensively.

**Table 1.** Research variable.

| Variable  | Description                                                                 | Data Source              |
|-----------|----------------------------------------------------------------------------|--------------------------|
| Actor     | Individual and institution involved in the activities and programmes conducted by the ACCCRN | Activity report          |
| Activity  | The action carried out relates to the programme of climate change           | Activity report          |
| Goals     | Specific objectives achieved through the programmes of the ACCCRN           | Website the ACCCRN       |
| Management| The process of governing the programme and achieve the output              | Activity report          |

3. **Results and discussion**

3.1. *A brief sketch of ACCCRN*

ACCCRN is an international voluntary organisation established in 2008 by the Rockefeller Foundation to help developing countries in reducing the impact of climate change. It was served in six countries in Asia, namely Bangladesh, India, Indonesia, Thailand, Vietnam, and the Philippines. ACCCRN, through Mercy Corps Indonesia, has an urban climate change resilience (UCCR) programme engaging cities, communities, and practitioners to improve their resilience. ACCCRN seeks to strengthen both the ability of cities and their populations while promoting new approaches and practices for all stakeholders. ACCCRN’s outcomes have included: (1) increasing the capacity within the ACCCRN cities to prepare, fund, organize and enforce climate change resilience, (2) level of understanding, participation, and implementation by ACCRN cities and other stakeholders in terms of person and mutual learning or practical knowledge to create urban climate change resistance, (3) resilience of urban climates has been extended with knowledge sharing between the CNSCC and new cities across existing and new networks, across existing and additional support from a variety of actors (e.g., finance, policy, and technology).

The ACCCRN is a popular initiative that created, tested, and adapted a specific approach to the UCCR in several cities, established UCCR capability, generated a strong collection of published ACCCRN documentation, and leveraged new UCCR funding and actors. ACCCRN is a significant initiative. In a larger UCCR puzzle, a rising number of Asian urban areas have enhanced their UCCR via ACCRN. The implementation of ACCCRN’s programme is seen in Figure 1. Several milestones are highlighted in the implementation of the ACCCRN programme, including (1) ACCCRN was the source of emerging technology, procedures, and collaborations assisted in developing local strategies to tackle the impacts of climate change. These technologies offer important opportunities for replication in other
cities facing vulnerabilities to climate change. (2) ACCCRN’s co-funding, cost-sharing, and organization building were critical priorities. This occurred at regional, state, and international levels.

(3) The ACCCRN was developed through a mix of sustained involvement, a focus on systemic development, and an emphasis on placing ownership of local stakeholders at its heart. Adaptive techniques such as ‘Shared Learning Dialogue’ (SLD) have helped in enhancing awareness about the benefits of investing in UCCR among the officials of local politics, civil society actors, industry, academia, and local communities.

![Figure 1](image1.png)

**Figure 1.** The stages of programme implemented by the ACCCRN.

![Figure 2](image2.png)

**Figure 2.** Network governance established in the programme of the ACCCRN.

3.2. The programme and network governance

There are many programmes initiated and implemented by ACCCRN in Indonesia during 2009-2018, as illustrated in Table 2. These programmes involved national and local governments. The majority of the programme was to create resilience of regions in facing climate change. The ACCCRN likewise offered disaster mitigation to the areas in Indonesia, such as flood early warning system for Semarang City Government from 2012 to 2014. If the programme was arranged and realized with the National Development Planning Agency (Bappenas) at the national level, the local governments had become the partner of the ACCCRN at the local level. Several actions had been carried out after piloting a similar programme in a certain area. Numerous local governments had participated in the programme arranged by ACCCRN, such as Semarang, Palembang, Blitar, etc. In addition, the Indonesian Municipal
Government Association (APEKSI), a local CSO, also contributed to implementing the programme of ACCCRN. These programmes were noteworthy in helping local governments to prepare their region in dealing with the consequences of climate change. The budget of the programme not only comes from the ACCCRN but also funded by the national and local government. Sharing of funding in implementing the programme of climate change resilience is a form of network governance applied by the ACCCRN. The network governance used by the ACCCRN can be seen in Figure 2.

**Table 2.** The activities conducted by the ACCCRN in Indonesia.

| Programme                                                                 | Objective                                                                 | Scope                                                                 | Funding                                      |
|---------------------------------------------------------------------------|---------------------------------------------------------------------------|-----------------------------------------------------------------------|----------------------------------------------|
| Asian Cities Climate Change Resilience Network (ACCCRN) Programme (2009-2016) | To build climate resilience among vulnerable and disadvantaged urban communities | The government of Semarang, Bandar Lampung, Blitar, Cirebon, Palembang, Pekalongan, Probolinggo and Tarakan | The Rockefeller Foundation                   |
| Best practices transfer programme                                          | To promote the sharing of best practices and lessons from programming at the local level in 12 municipalities in all of Indonesia | All cities in Indonesia                                               | APEKSI, Rockefeller Foundation              |
| Vulnerability Index Data Information System (SIDIK) (2013-2016)           | To measure an area vulnerability index at the scale of the provinces, municipalities, and villages | The national level will be piloting in eight ACCCRN Indonesian cities | The Rockefeller Foundation, MoEF             |
| Groundwater conservation through bio-pore infiltration (2012-2014)        | To minimize flood and flood risk by providing artificial groundwater recharges by bio-pore infiltration and increase the quality and quantities of groundwater | Bandar Lampung City Government                                        | The Rockefeller Foundation, Bandar Lampung city Government |
| Flood early warning system (2012-2014)                                    | To reduce vulnerability to floods, injuries, and victims, especially in the Semarang River Basin. | The government of Semarang City                                       | The Rockefeller Foundation                  |
| Climate adaptation & disaster resilience development (Phase 2) 2014-2015   | To incorporate disaster risk mitigation and climate change adaptation as priorities for preparation and funding at local, regional, and national government levels including metropolitan areas | Two provinces                                                        | USAID                                        |
| Strategy in urban development                                              | To improve urban growth policy frameworks under the 2005-2025 national long-term development plan | National Development Planning Agency                                  | National budget                             |

Source: The results of data analysis (2020).

The concept of network governance refers to the involvement of non-state actors in the governance process through various relationships and work arrangements between them [10]. Non-state actors
involved include the business sector, civil society, and other community institutions. Actions taken by politicians and administrators to regulate and facilitate governance of network governance are known as ‘meta-governance’, namely regulating [a] self-regulated governance network and aims to enhance the democratic legitimacy of network governance. Network governance integrates a number of interdependent actors, but in practice, each actor is autonomous in negotiating their interests, based on a shared understanding built through regulations, norms, and perceptions. Each actor is involved in the effort to produce and coordinate policies through self-regulation. In terms of this study, it can be understood that the non-state actors involved in the framework of network governance take various institutions, including APEKSI and local CSOs in Indonesia. Although they joined in the structure of network governance, each organisation had independence in the decision-making process through institutional design [11]. However, the ACCCRN still played a central role in leading and supervising the programmes.

3.3. Discussion
The multinational organisation has a strategic part in the climate change issue [12]. Our results further show the essential function of ACCCRN in developing the resilience of Indonesian regions to encounter climate change. It achieves by formulating and implementing manifold programmes related to the reduction of climate change’s effect. This study thereby contributes to the study of international CSO participation in climate change plan by examining the case of the ACCCRN in Indonesia. The results support prior studies addressing the role of non-state actors in the implementation of the climate change programme. For instance, Nasiritousi et al. investigated the engagement of non-state actors in the governance of climate change [13]. Concerning the data analysis, they found that the various governance profiles are extracted from unique power sources, and the organization relies on that profile. Using a political viewpoint, Hall and Taplin discussed how the Australian NGOs’ campaign tactics for attracting public and political exposure to climate change issues [14]. They pointed out that it is too straightforward for NGOs to understand whether NGOs have a ‘revolutionary’ approach or an ‘incremental’ approach or some other limited strategic approach proposed by diverse scholars to evaluate campaigns: no one seems to favour one form of strategy deliberately. Although the results of the current research are in line with several prior studies, this study adds our knowledge about the nexus between international CSO and government in the case of emerging countries in establishing climate change resilience. The findings of this study likewise have a practical contribution to the government by entirely considering the critical role of international CSO in confronting climate change in Indonesia. Because Indonesia has become one of the vulnerable countries in the world, the Indonesian government should cooperate with many countries and CSOs in the programme of climate change.

4. Conclusion
This work portrays the involvement of the international donor organisation to assist the third world in minimizing climate change risk. Analyzing the case of the ACCCRN in Indonesia, we claim that international relief has a crucial impact on addressing climate change through the diverse programme in UCCR. The programmes can effectively achieve the goals because of network governance established among state and non-state actors in Indonesia. Each actor plays a specific task related to the content of programmes. These findings complete the study on the politics of climate change, specifically the role of international civil society organisations in reducing the danger of climate change in developing nations. Our study also practically contributes to the policymaker in the climate change programme in Indonesia by inviting and developing mutual cooperation with international organisations in combating climate change.

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