

Roles of Non-Governmental Organisations in the National Climate Change Governance: A Systematic Literature Review

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Abstract

This review aims to examine the roles of non-governmental organisations (NGOs) in climate change governance. This attempt is to understand the contribution of NGOs to climate change governance at the national level. In order to achieve the objective, a systematic review was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) and analysed using thematic analysis. Journal articles were searched using two databases, which are Scopus and Web of Science. NGOs play various specific and functional roles in national climate change governance, such as being advocates and activists, innovators, researchers, information providers, representatives, executors, watchdogs, and trainers. The study contributes to the body of knowledge on the current roles of NGOs in national climate change governance. It further suggests the research areas in climate change governance that could be further investigated.

Keywords: Climate change governance; National level; NGO; Roles

INTRODUCTION

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Non-governmental organisations (NGOs) were defined by Vakil (1997) as the private, non-profit and self-governed organisations that are driven by motives to improve the quality of life of the marginalised groups. NGOs are most notable for performing activities of delivering social services, advocacy and public awareness campaign. Simultaneously, they play a broad range of specialised roles such as environmental and human rights activists, researchers, emergency responders, conflict resolvers, cultural preservers, policy analysts, and information providers (Lewis & Kanji, 2009).

The civil society contributes to environmental governance, especially in implementing environmental policies (M. M. Betsill & Corell, 2017). Hence, as a component of civil society, non-governmental organisations (NGOs) advocate

environmental issues and play a vital role in governing the environment. If NGOs are weak, the state will suffer from poor environmental governance due to limited participation as NGOs are considered one of the important actors (Gemmil et al., 2002).

Many NGOs, especially in developing countries, have made limited contributions to environmental governance (Tortajada, 2016). Due to a less democratic political system, NGOs are weakening and restricted in governance activities (Buyse, 2018). The NGOs may influence global and national environmental policy (Nasiritousi et al., 2016; Pacheco-Vega, 2010). Thus, they deserve ample space in the governance process because they represent the voices of the critical masses. However, the lack of opportunity to participate in governance and political activities would likely result in protests through campaigns and demonstrations. The protests are to draw attention from the government (Boulding, 2010). As a result, in many instances, the protests have tarnished the image of the government.

Studies showed that NGOs could significantly contribute to climate change governance, particularly at the global level, over two decades ago (Betsill, 2015; Gemmil & Bamidele-Izu, 2002; Giorgetti, 1998; Nasiritousi et al., 2016; Rietig, 2016). Earlier studies have reported that NGOs have influenced international climate negotiations and politics (Giorgetti, 1998; Corell & Betsill, 2001). Gemmill and Bamidele-Izu (2002) highlighted the role of NGOs in collecting and disseminating information for multilateral agreements such as UNFCCC. In more recent studies, it was revealed that many NGOs had played the roles of activists who sought to influence global governance (Betsill, 2015) and reviewers of the Paris Agreement (Van Asselt, 2016). In addition, Nasiritousi et al. (2016) pointed out that the climate governance activities of NGOs are associated with the types of NGOs such as ENGOs play an essential role in raising awareness, while research and independent non-governmental organisations (RINGOs) provide expertise. Meanwhile, Rietig (2016) noted that the ENGOs' influence in international climate negotiations is recognised and valued by the government to reflect public legitimacy and support.

The roles of NGOs in national and local climate governance would be as significant as in global climate change governance (Pandey, 2015). Climate change poses threats to global society, and it requires a multilevel-governance approach to address the issues. International climate governance needs to be supported by effective domestic climate governance, mainly at local and national levels. Therefore, examining the current

roles of NGOs in the national arena is appealing as a platform to promote better governance of climate change at the domestic level. This step consequently can improve the formulation and implementation of strategies to address climate change effectively.

A systematic literature review on the roles of ENGOs in the national climate change governance is lacking. Undoubtedly, there have been a number of literature reviews on NGOs related to environmental and climate change governance. In particular, Jeffrey (2001) has reviewed the roles of ENGOs in the twenty-first century in protecting and representing the public interest in environmental issues. Moreover, Liu, Wang and Wu (2017) reviewed the roles of NGOs in climate change governance, but they only focus on climate change governance in China. Although some authors have reviewed the topic, there is no systematic literature review on the roles of NGOs in climate change governance at the national level has been found to this date. Therefore, this article will fill in the gap by systematically reviewing empirical researches on the roles of NGOs in national climate change governance. In order to achieve this objective, this article will provide an overview of the current roles of NGOs in climate change governance at the national level.

METHODS

Review Design

This review is guided by the research question of “What are the roles of NGOs in the national climate change governance?”. In order to address the research question, this review utilised a systematic review methodology to explore and describe the roles of ENGOs in climate change governance. A systematic review is a process of reviewing the research questions using a systematic way of collecting and analysing the data from studies that have been identified, selected, and included in the review (Moher et al., 2009). This review was guided by the Preferred Reporting Items for Systematic Reviews and

Meta-Analyses (PRISMA) that involves four steps, which are identification, screening, eligibility, and inclusion (Moher et al., 2009).

Identification

Several key terms related to the objective of this study, such as “non-governmental organisations”, “civil society”, “climate change”, “climate change governance”, and “national governance”, were searched from databases such as Scopus and Web of Science to identify the relevant studies.

Screening

From the literature search using the identified key terms, 558 publications were retrieved from both databases. The further screening process was conducted based on the inclusion and exclusion criteria. Only journal articles written in English, published from 2015 until 2020, were included in the review. Only 219 articles have proceeded for the next step after the screening process.

Eligibility

After the examination was performed on all publications, 67 duplicating publications were removed. Then after further examination on the remaining 152 articles, 122 articles that did not fit with the objective of this review and non-empirical studies were excluded. Only 30 articles matched all the criteria set for the systematic review.

Inclusion

A total of 30 articles were included for the systematic review based on the procedures mentioned above. The number is acceptable according to the suggestion by Robinson and Lowe (2015). They suggest that the number of articles to conclude an inquiry through a systematic literature review is between 10 and 50. Analysis of the findings will then be conducted using the thematic analysis method. The analysis was performed following the six steps of thematic analysis by Nowell et al. (2017).

RESULTS

The thematic analysis performed over the 30 articles revealed eight main themes on the roles of NGOs in the national climate change governance. The key themes are shown in Table 1, and the details are presented in Table 2.

Table 1: *The Key Themes on Roles of NGOs in National Climate Change Governance*

No.	Author(s)	Year of publication	Country	Study Focus	Themes							
					AA	IN	RC	IP	RP	EX	WD	TR
1	De Oliveira, A.	2015	Brazil	The strategies of civil society organisations on forests and climate change.	/		/	/	/		/	/
2	Fisher, S.	2015	India	How civil society strive for marginalised communities involvement in climate politics at different scales and claim for climate justice.	/				/			
3	Brown, H. C. P., & D. J. Sonwa.	2015	Cameroon	Forest-dependent community resilience in facing climate change.					/			
4	Astuti, R., & Mcgregor, A.	2015	Indonesia	How the REDD+ Task Force has attempted to mainstream the programme.					/			
5	Lounela, A.	2015	Indonesia	Climate change disputes, justice and access to justice, perception of local communities toward global and national climate change schemes.	/							
6	Hirsch, E.	2015	Maldives	Climate politics and democracy.	/		/	/				
7	Shakeela, A., & Becken, S.	2015	Maldives	Stakeholders' perceptions of the tourism industry vulnerability to climate change.	/					/	/	
8	Lilja, M., <i>et al</i>	2015	Japan	Resistance strategies employed by civil society organisations against global warming.	/							
9	Weinthal, E., <i>et al</i>	2015	Israel, Jordan & Syria	The framing of water, climate change, and migration as national security concerns.	/							
10	Kabiri, N.	2016	Thailand	Environmental governance in the context of climate change and land use.	/		/					/
11	Beer, C. T.	2016	Kenya	Connection between global and domestic environmental organisations and their support for climate change scripts.	/				/			

12	Christoplos, I. & McGinn, C.	2016	Cambodia	Application of Human Rights Based Approaches to Climate Change Adaptation programming by NGOs.	/				
13	Bernauer, T., <i>et al</i>	2016	China	Civil society organisations involvement in climate policy making and influence on public legitimacy.	/				
14	Gunningham, Neil	2017	USA & Australia	Social movement and grassroots activists' innovative protest and framing to promote a new social norm.	/	/		/	
15	Reimer, I., & Saerbeck, B.	2017	Norway	Role of policy entrepreneurs in national climate change policy processes.	/				
16	Bhatta, G. D., <i>et al</i> .	2017	Nepal, India & Bangladesh	Agricultural innovations for adaptive strategies.		/			/
17	Rouillard, J. J., & Spray, C. J.	2017	The UK, Australia, France & USA	Actors of Integrated Catchment Management.	/		/	/	/
18	Dany, V., <i>et al</i>	2017	Cambodia	Integration of climate change concerns into national development planning.					/
19	Karlsson-Vinkhuyzen, S.I., <i>et al</i>	2017	Finland, India, Laos, Norway, South Africa, UK and USA	Media reporting on the fragmentation of global climate governance across numerous forums.				/	
20	Smits, M	2017	Vietnam & Thailand	Factors of carbon market mechanisms development.	/				
21	Di Gregorio, M., <i>et al</i>	2017	Brazil, Peru, Cameroon, Tanzania, Indonesia, Nepal, Papua New Guinea & Vietnam.	The adoption of REDD+ discourses across different national contexts.	/				

22	Dawson, N. M., <i>et al</i>	2018	Nepal & Uganda	Norm entrepreneurs for justice in forest governance.	/	/	/					
23	Joshi, D., <i>et al</i>	2019	India	The response of local NGOs to hydropower development.	/							
24	Harvey, B., <i>et al</i>	2019	Burkina Faso & Ethiopia	Climate services landscape.	/	/						
25	Colenbrander, D	2019	South Africa	Mode of governance within the coastal risk and vulnerability domain.		/						
26	Bouille, M.	2019	Kenya	Actors in coal power plant development.	/							
27	Torney, D.	2019	Finland & Ireland	Influence of the UK climate laws on the development of climate laws and policies in Ireland and Finland.	/							
28	Khan, M. F. A., <i>et al</i>	2020	Bangladesh	Issues and actors in the mangrove forest policy and management.	/	/						
29	Maraseni, T. N., <i>et al</i>	2020	Vietnam, Lao PDR, Indonesia, Thailand, Cambodia, Nepal, Bhutan, Pakistan, Papua New Guinea (PNG), Fiji & Vanuatu.	The REDD + readiness of 11 Asia-Pacific countries with respect to UNFCCC's resolutions on REDD+.	/	/						
30	Omukuti, J.	2020	Tanzania	Influence of multi-stakeholder engagement in climate adaptation decision making.			/					
					22	3	4	5	10	4	3	5

AA = Advocates and activists, IN = Innovators, RC = Researcher, IP = Information provider, RP = Representatives, EX= Executor, WD = Watchdog, TR = Trainer

Table 2: Details of The Key Themes on Roles of NGOs in National Climate Change Governance

Theme	Category	Description	Examples	Authors
Advocates and Activists	Climate change advocacy	Promote the issues of mitigation and adaptations to increase public awareness	<ul style="list-style-type: none"> - Raise climate change awareness - Advocates climate mitigation - Climate change campaign - Climate movement - Inter-sectoral advocacy 	Smits (2017), De Oliveira (2015), Hirsch (2015), Shakeela & Becken (2015), Bernauer <i>et al.</i> (2016), Beer (2016), Gunningham (2017), Lilja <i>et al.</i> (2015), Rouillard & Spray, (2017), Maraseni <i>et al.</i> (2020).
	Climate Activism	Use of vigorous campaigns or direct actions for policy change	<ul style="list-style-type: none"> - Oppose the government project - Fight for climate justice - Protest against the government 	Lounela (2015), Di Gregorio (2017), Boulle (2019), Khan <i>et al.</i> (2020), Dawson (2018), Fisher (2015), Joshi <i>et al.</i> (2019), Christoplos & McGinn (2016), Weinthal <i>et al.</i> (2015), Reimer & Saerbeck (2017), Torney (2019), Kabiri (2016).
Representatives	Representing other groups	Act and speak on behalf of other groups	<ul style="list-style-type: none"> - Represent public voices in governance activities - Formal representative in national committees - Link the local communities with related agencies - Link communication between government and stakeholders - Connect local to global communities 	De Oliverira (2015), Fisher (2015), Astuti & Mcgregor (2015), Colenbrander (2019), Khan <i>et al.</i> (2020) Maraseni <i>et al.</i> (2020), Brown & Sonwa (2015), Rouillard & Spray (2017), Beer (2015), Dawson <i>et al.</i> (2018)
Information Providers	Provision of Information	Collect and provide information to the stakeholders	<ul style="list-style-type: none"> - Provide and disseminate climate information - Provide climate information to the public in understandable language - Collect information from public 	Harvey <i>et al.</i> (2019), Gunningham (2017), De Oliveira (2015), Karlsson-Vikhuyzen <i>et al.</i> (2017), Hirsch (2015)

Trainers	Provide training	Teaching other groups on climate change	<ul style="list-style-type: none"> - Provide technical training to the community for climate adaptation - Provide training to public, media, other civil society organisations and public officials - Provide training on capacity building 	Omukti (2020), Bhatta et al. (2017), De Oliveira (2015), Kabiri (2016), Dawson et al. (2018)
Researchers	Research	Study and investigate subject matters or materials systematically to produce new knowledge	<ul style="list-style-type: none"> - Conduct research independently and collaboratively with other institutions - Generate scientific information - Conduct study on the impacts of climate strategies - Involved in research activities 	De Oliverira (2015), Hirsch (2015), Kabiri (2016), Rouillard & Spray (2017)
Executors	Execution of government's decision	Carry out mitigation and adaptation strategies under climate change policies	<ul style="list-style-type: none"> - Perform climate mitigation and adaptation strategies - Partner with other stakeholders for projects implementation 	Christoplos & Mc Ginn (2016), Dany et al. (2017), Shakeela & Becken (2015), Rouillard & Spray (2017)
Innovators	Innovation	Introduce and develop innovations for climate change mitigation and adaptation	<ul style="list-style-type: none"> - Innovate mechanisms to collect and disseminate climate information to the public - Invented weather monitoring stations - Introduced new advocacy strategies 	Harvey et al. (2019), Bhatta et al. (2017), Gunningham (2017)
Watchdogs	Monitor the government's performance	Observe the action of the government in addressing the climate change issues	<ul style="list-style-type: none"> - Monitor climate change and forest policies - Check on the government's actions - Monitor the climate change policy process 	De Oliveira (2015), Shakeela & Becken (2015), Christoplos & McGinn (2016)

Advocates and Activists

In the broadest sense, advocacy refers to the influence of groups in determining social and political outcomes in government and society (Reid, 2000). Examples of advocacy strategies include lobbying, campaign, coalition building, and public education. Meanwhile, activism is described as involvement in action for social, political, environmental and other change using hard tactics such as boycott, demonstrations and protest (Moola, 2004). In this review, twenty-one studies found that NGOs play a vital role as advocates and activists. NGOs have been shown in the literature as having significant roles as climate change advocates and activists.

Advocacy is the most common activity performed by NGOs to influence policy at national climate change governance. For example, NGOs were said to be instrumental in raising public awareness, such as through workshops on climate change in Vietnam conducted by their Climate Change Working Group that includes international and local NGOs. At the same time, NGOs in Thailand advocated climate change mitigation with a critical view over the country's national climate policy (Smits, 2017). In Brazil, Greenpeace Brazil has launched a campaign to draw people's attention to the importance of the Conference of the Parties 15 (COP15) 2009 to force the government to take a more active position in climate change (De Oliveira, 2015). As in the case of the Maldives, the Bluepeace was recognised as one of the leading NGOs in promoting awareness of carbon neutrality (Hirsch, 2015), and at the same time, other NGOs in the country were active in promoting awareness of climate change and disaster risks reduction (Shakeela & Becken, 2015). Another significant example mentioned is that NGOs in China have increasingly taken part in advocacy works. Their advocacy works in climate change were assumed to enhance public support for climate policy and public perception towards the transparency of national climate governance (Bernauer et al., 2016). Additionally, in Kenya, the ENGOs perform policy advocacy activities to address the mitigation and adaptation issues (Beer, 2016).

Some NGOs have shown a disruptive approach to climate advocacy. For instance, as the NGOs in the US and Australia have taken part in the divestment movement to increase public awareness about fossil-free as a solution for climate change, while the NGOs in Japan have tried to create awareness to fight global warming by imagining the unpleasant future effects of climate change (Gunningham, 2017; Lilja et al., 2015). Climate change is complicated, so tackling the issues requires collaborative strategies with other sectoral governance. The NGOs are actively advocating climate change in various sectoral governance. For instance, the NGOs in the United Kingdom, especially River Trusts, have led numerous Integrated Catchment Management (ICM) projects as a climate change adaptation strategy. The NGOs play an active role in adaptive water governance to face climate change through advocacy activities such as public awareness

campaigns and public consultations (Rouillard & Spray, 2017). On the same note, the study involving the Asia Pacific region found that the NGOs were successfully engaged in the discourses related to their national REDD+ strategy (Maraseni et al., 2020).

NGOs have been shown to be crucial in environmental and climate activism. Many had debated around the rhetoric of climate mitigation strategies initiated by the national government. For example, the activism of NGOs in Indonesia was substantial, whereby they managed to bring about a policy change, as in the case of the Kalimantan Forest and Climate Partnership (KFCP) scheme. The government of Australia promoted the scheme, but the local people and NGOs opposed it until all activities were eventually terminated in 2013 (Lounela, 2015). In other scenes, the ecological modernisation discourse that dominates the policy arena of REDD+ in Brazil, Peru, Cameroon, Tanzania, Indonesia, Nepal, Papua New Guinea, and Vietnam was opposed by the domestic NGOs (Di Gregorio et al., 2017). In Kenya, the NGOs were seen as one of the key actors in opposing the Lamu powerplant, while the NGOs in Bangladesh have taken a critical stand in the refusal of the government to discuss the issues of the Rampal power plant (Boulle, 2019; Khan et al., 2020).

As in the case of Nepal and Uganda, the NGOs have made considerable progress and brought about changes in norms of human rights through their involvement in activism, building national alliances, launching awareness campaigns as well as integrating themselves with the supportive global networks beyond the climate change policy processes (Dawson et al., 2018). In India, the Indian Network on Climate Change and Ethics (INECC) advocates climate justice in the national climate change governance (Fisher, 2015). However, some NGOs in India are engaged in activism, but the government has restricted their activities. The majority of NGOs in Darjeeling, India, were given funds by the central government to perform environmental activities, including awareness campaigns. However, the NGOs' dependency on the fund limited their activism role as they were afraid to lose the fund. This conundrum has been shown in the case where the Ministry of Home Affairs called upon the NGO that protested against the development of hydropower plants as a climate mitigation strategy by the central government (Joshi et al., 2019). In a similar fashion, NGOs in Cambodia have

adopted soft or hard advocacy strategies to promote human rights in climate change adaptation policies (Christoplos & McGinn, 2016).

The activism of NGOs is also essential in advancing the climate change issue into a national agenda. It has been observed from the case of African migrants in Israel, the Coalition Coordinator of The Paths to Sustainability Coalition asserted that labelling them as ‘work immigrants’ had denied the reality that they are actually ‘climate refugees’ (Weinthal et al., 2015). The action had uplifted the status of climate change issues as a national priority. In Norway, while the government has primarily been involved in the formulation of climate change policy, the NGOs were seen as vital in agenda-setting and identification of policy options (Reimer & Saerbeck, 2017). Likewise, NGOs in Ireland have performed policy advocacy activities by undertaking a ‘Big Ask’ campaign to urge the government in agenda-setting for climate law, following the success of NGOs in the UK in agenda-setting for the Climate Change Act 2008 (Torney, 2019). Similar action was taken by the Thai Working Group on Climate Change (TCJ), in which they attempted to influence climate policy by involving in the activism through a campaign to redraft the National Master Plan on Climate Change (2010-2019) (Kabiri, 2016).

Representatives

Representatives refer to individuals or groups who are acting and speaking on behalf of the other parties. In climate change governance, public voices regarding the issues are represented by individuals or groups with the common public interest. Many NGOs served as representatives of the critical masses. The roles are commonly seen in most developed and developing NGOs, as found in ten articles reviewed in this paper.

NGOs have been shown as representatives of the public in many countries through their direct or indirect involvement in the national climate change governance. In her study, De Oliveira (2015) mentioned that civil society organisations, including NGOs, have taken part in various working groups and meetings to represent public voices in developing REDD+ policies in Brazil. Additionally, a climate justice network in India, the Indian Network on Ethics and Climate Change (INECC), has brought the voices of local people in the process of climate policy-making at the national and global arena (Fisher, 2015). Along the same lines, NGOs in Indonesia were acting as formal representatives and speaking on behalf of the local people as they were allowed to be the member of the REDD+ policy-making process (Astuti & McGregor, 2015). In a study by

Colenbrander (2019), it was found that NGOs acted as one of the formal representatives in coastal governance committees to deal with climate-induced coastal risks in South Africa. In Bangladesh, NGOs were found to be active compared to academicians and research groups in representing the people of Sundarbans to oppose the Rampal power plant. It might be due to the larger size of NGOs compared to the other two groups (Khan et al., 2020).

As in the case of Cameroon, the NGOs have linked local communities with related institutions in the national climate change governance though they have limited direct action on climate change (Brown & Sonwa, 2015). In the UK, NGOs were said to be vital in communicating information between the government and stakeholders (Rouillard & Spray, 2017). Beer (2016) mentioned that NGOs in Kenya had established a connection with the global network in order to be updated on the best practices and standards of other countries. The information obtained from experts and organisations in the global network during the conference will be brought home and articulated to the public and national government. Similarly, a connection developed by NGOs between local people and global communities has brought significant benefits in changing the human rights norms in seeking justice of REDD+ policy (Dawson et al., 2018). In a more recent study of eleven countries in the Asia-Pacific region, it was found that NGOs in five countries managed to become formal representatives at various national committees, including the REDD+ technical committee, as a result of their active networking (Maraseni et al., 2020).

Information Providers

Information providers in climate change governance refer to those who collect and supply information regarding climate change to the other parties, particularly the stakeholders. They produce the information through research and meetings with the grassroots. From the articles reviewed in this paper, five studies revealed that NGOs are information providers to the stakeholders in the national climate change governance.

The case studies from Burkina Faso and Ethiopia emphasise the role of NGOs in communicating and sharing knowledge through climate services that they offer to the national government (Harvey et al., 2019). Gunningham (2017) stated that NGOs in the US and Australia also provide climate change information to the public by translating the scientific terminologies into an understandable language. Expert NGOs in Finland, India,

Laos, Norway, South Africa, the UK and the USA also provided a detailed reporting of international negotiations, while NGOs in Brazil also act as the translator to journalists of local and national media (De Oliveira, 2015; Karlsson-Vinkhuyzen et al., 2017). It is imperative to make the journalists understand the condition of climate change so that more information could be published in the newspapers (De Oliveira, 2015). Besides, NGOs also have assisted the experts in getting information from the public, such as in the Maldives, wherein the NGOs provide information to the scientists on the public perception of climate change risks. They assisted in translating non-expert language into scientific information (Hirsch, 2015).

Trainers

Another notable role of NGOs is providing training to the stakeholder in the national climate change governance, including the local community and public officials, for climate-related education as well as capacity-building. The five articles in this review mentioned the role of NGOs as a trainer.

NGOs representatives were reported to involve in community training in the coastal adaptation projects in Tanzania (Omukuti, 2020). In the context of climate change adaptation in Bangladesh, the NGO named Practical Action was actively providing technical training on the construction and use of floating beds in Kamarjani (Bhatta et al., 2017). In Brazil, NGOs have offered training to increase the knowledge about forest and climate change not only to the public but also to media practitioners and other civil society organisations (De Oliveira, 2015). Correspondingly, an international NGO in Thailand working on community forestry, the Center of People and Forests, focuses on training and capacity building among communities so that they can protect their rights (Kabiri, 2016).

In terms of training for public officials, it can be observed from the training programme on human rights conducted by Uganda's Human Rights Network to the

Uganda Wildlife Authority (UWA) staff, particularly on environmental justice in climate and forest governance (Dawson et al., 2018).

Researchers

Research refers to a thorough systematic investigation into nature and society to add value to existing knowledge and generate new knowledge (Naidoo, 2011). In this study, researchers refer to those who conduct a systematic investigation on a specific research problem to generate new knowledge, such as scientific research related to climate risks, adaptation, and resilience. NGOs were found to be playing the role of the researcher in four articles involved in this review.

It was found from the literature that Brazilian NGOs have conducted research on climate change to assist the policy-making process. The findings of the research have resulted in the proposal for national climate law. Apart from that, they were also partnering with research institutions to collaborate in research and publication. The research had contributed to the production and dissemination of scientific information and knowledge on climate change to the public (De Oliveira, 2015). Besides, Bluepeace in Brazil also has carried out various knowledge-generating activities, even though their number of volunteers is limited (Hirsch, 2015).

The research activities of NGOs have benefited the other actors in the governance process. As in the case of Thailand, the NGOs conducted research on the impacts of the Clean Development Mechanism (CDM) among the communities and disseminated the findings to the other actors in civil society (Kabiri, 2016). On a related note, the UK government has recognised the involvement of NGOs in research, covering a range of activities such as monitoring water quality and gathering good practices from other countries (Rouillard & Spray, 2017). The findings of these activities could serve as an essential input for environmental policy-making.

Executors

The executors can be described as the persons responsible for performing or implementing duties as decided by the government to achieve the goals of the climate policies. Acting as the executor of the policy and strategy in climate mitigation and adaptation is another role of NGOs in the national climate change governance. As many

as four articles mentioned that NGOs provide services in the implementation of climate change policy.

NGOs in Maldives and Cambodia not only implemented numerous initiatives of climate mitigation and adaptation, but they also provided additional services in climate projects (Christoplos & McGinn, 2016; Dany et al., 2017; Shakeela & Becken, 2015). In the UK, NGOs were recognised as one of the partners for collaborative works to implement integrated catchment projects for climate change adaptation (Rouillard & Spray, 2017).

Innovators

Innovators refer to those who implement a new kind of value creation through inventions of novel techniques, strategies and tools (Noailles, 2013). In the environmental context, innovation is known as eco-innovation that includes inventions of new products, tools and strategies for sustainability (Angelo et al., 2012). From the articles, three articles mentioned the involvement of NGOs in innovation activities.

Some NGOs innovate various systems and strategies that could assist the national government in governing climate change. The NGOs have brought some innovations into the national delivery system of Burkina Faso and Ethiopia through their climate services (Harvey et al., 2019). Bhatta et al. (2017) have noted in their study that Indian NGOs have been involved in agricultural innovations of Udaipur community-based weather monitoring stations. In another context, NGOs in the US and Australia have innovated new strategies in climate activism, such as the 'name and shame' of fossil fuel companies that focus more on profit-making than sustainability (Gunningham, 2017). The 'name and shame' strategy could support the national government in making an effort to reduce carbon emissions.

Watchdogs

Watchdogs refer to any individuals or organisations who observe the conduct of public officials in order to prevent illegal practices, unethical conduct and inefficiency.

Based on the review, NGOs were found to act as environmental and human rights watchdogs in three articles in this study.

De Oliveira (2015) has conducted a survey on civil society in Brazil, including NGOs and found that they monitor climate change and forest policies through Deforestation Alert System and REDD Observatory project that they have developed. In the context of the Maldives, the NGOs paid close attention to the government's action in the issues of climate change risks and criticised the government for lack of adaptation policies (Shakeela & Becken, 2015). In the case of Cambodia, the NGOs played a role in monitoring the policy-making process of climate adaptation (Christoplos & McGinn, 2016).

DISCUSSION

This section presents a further discussion of eight themes developed from the thematic analysis. The themes on the roles of NGOs that emerged from the review of thirty articles are advocates and activists, representatives, information providers, trainers, researchers, executors, innovators, and watchdogs. The review of the recent literature indicates that there has been an expansion of roles played by NGOs in the national climate change governance.

An important finding from this review is that the primary role of NGOs in climate change governance at the national level is as advocates and activists. The majority of NGOs concentrate on climate advocacy to defend and support a specific policy or cause by raising awareness of climate change issues. Some NGOs try to influence and change environmental policies rather than being involved in operational works. On the other hand, climate change activism involves actions of debating and contesting climate change discourses. It reflects the enthusiasm of individuals or groups to protect the environment against the impacts of climate change. NGOs advocate through campaigns to increase awareness of the public on the pressing issues of climate change (De Oliveira, 2015; Hirsch, 2015). Since climate issues are an increasingly critical subject, NGOs develop some creative yet disruptive strategies in advocating for greater awareness to improve the effectiveness of climate policy. Such strategies include the fossil fuel divestment movement and illustration of the terrifying effects of climate change in the future (Gunningham, 2017; Lilja, Baaz, & Vinthagen, 2015). Despite supporting viable climate

change policy and strategies, they also protest against unfavourable strategies that posed negative impacts to the local communities, such as the development of power plants and REDD+ strategies (Boulle, 2019; Di Gregorio et al., 2017; Khan et al., 2020; Lounela, 2015). Even though the authoritarian governments might control their activism, they still fight for climate justice, especially for the local communities whose human rights were violated by the government actions through the implementation of climate mitigation strategies which will destroy the ecosystem of their livelihoods (Christoplos & McGinn, 2016; Joshi, Platteeuw, Singh, & Teoh, 2019). However, their activism is imperative for social and environmental transformation as it has the potential to get the climate change issues into the national agenda and bring out changes in the current national climate change laws (Kabiri, 2016; Reimer & Saerbeck, 2017; Torney, 2019).

Other substantive roles played by NGOs are as representatives for various groups of people in the national climate change governance. Some prominent NGOs managed to be appointed as official members of numerous working groups and committees of climate policy (Colenbrander, 2019; De Oliveira, 2015; Maraseni et al., 2020). Their contacts and networking with other local and international NGOs have helped bring the best practices abroad into the country for policy improvements and human rights (Beer, 2016; Dawson et al., 2018). These findings corroborate Jeffrey's (2001) premise that NGOs play a vital role in representing the groups who were concerned with the impacts of socio-economic activities on the environment in the national councils of Ireland. It suggests that the NGOs have the potential to be an important governance actor as they could provide inputs from the grassroots to assist the decision-making process for climate policy.

Knowledge of people on climate change is imperative to boost their awareness of climate issues and adaptive capacity. Therefore, in order to enhance awareness, NGOs have been involved in providing knowledge through training and workshops to other civil society organisations, communities, media as well as public officials (Bhatta et al., 2017; Dawson et al., 2018; de Oliveira, 2015; Kabiri, 2016; Omukuti, 2020). The findings are similar to Fröhlich and Kneiling's (2013), who demonstrated that NGOs play a critical role in distributing scientific and policy information on climate change to the public. Besides being specialised trainers, they are also crucial in climate-related information provision activities. Some NGOs offer climate services, translate scientific information to relevant groups such as the public institutions, communities and media, as well as deliver public perception to the scientists (de Oliveira, 2015; Gunningham, 2017; Harvey et al., 2019; Karlsson-Vinkhuyzen, Friberg, & Saccenti, 2017; Hirsch, 2015). In this

sense, NGOs act as information providers to both experts and non-experts of climate change. Therefore, these findings suggest that NGOs have a pivotal role in supplying, delivering and translating scientific and policy information to stakeholders in climate change governance.

The findings also revealed that NGOs are involved in other functional roles in the national climate change governance, such as the executor, researcher, innovator and watchdog. These activities are not the focus of NGOs but valuable to complement national climate governance. Betsill (2015) emphasised that climate policy implementation requires the involvement of many actors, including NGOs. It was shown from this review that NGOs act as executors of climate change policies and projects for mitigation and adaptation at the national level (Christoplos & McGinn, 2016; Dany et al., 2017; Shakeela & Becken, 2015). As they can provide assistance and additional services in climate policy implementation, some countries acknowledge them to engage in a collaborative partnership to improve the effectiveness of climate policy. However, it is essential to note that collaboration between state and non-state actors in political processes depends on shared policy beliefs (Ingold & Fischer, 2014). Hence, partnership for effective climate governance requires a shared understanding and acceptance of climate mitigation and adaptation strategies.

Next, NGOs research activities also could generate information for policymakers and improve information deficiency problems. Although NGOs have a role as researchers in general, only the research-based NGOs that provide expertise seem to be more engaged in research activities than the other types of NGOs (Nasiritousi et al., 2016). The research-based NGOs have cognitive power because they have the expertise. Since the other types of NGOs have limited expertise, they are encouraged to actively collaborate with other research-based NGOs or institutions to build their research skills so that they could play a more significant role in contributing new insights into climate change discourses. As shown in this review, some NGOs play the role of the researcher by working with research institutions to conduct researches (De Oliveira, 2015). Their research findings were published and distributed as new knowledge and input to relevant stakeholders to assist policy-making in climate change governance (Kabiri, 2016; Rouillard & Spray, 2017).

Additionally, NGOs are also considered innovators, which facilitates various activities in the national climate change governance. They are not only talented at inventing tools, systems and equipment but also good at developing new strategies in

climate advocacy (Bhatta et al., 2017; Gunningham, 2017; Harvey et al., 2019). The findings support the idea that NGOs have to be innovative in order to produce more effective climate policies by employing new advocacy strategies such as climate justice awareness and mobilisation of social movements for greater pressure on policymakers (Pandey, 2015). Last but not least, NGOs are the watchdog who oversees the practice of climate justice in national climate governance. In general, NGOs are understood to be an independent and free entity from the states. Thus, they are expected to be active and helpful in monitoring government activities related to climate change. However, some countries still control the activities of NGOs through funding. As a matter of fact, despite being an effective watchdog, some NGOs in less democratic countries tend to focus on their relationship with the government and donors for their organisational survival (Christoplos & McGinn, 2016).

CONCLUSION

The findings of the review suggest that more studies should be conducted to investigate the complementary functional roles of NGOs in the national climate change governance as there are limited studies related to NGOs activities in research, innovation, and policy execution and monitoring. Although these roles are considered complementary, strengthening their capacity for such activities are perceived to be imperative for effective climate governance. Future studies should consider this gap by investigating the factors that influence NGOs to play more active roles as executors, researchers, innovators, and watchdogs in climate change governance. The focus should be given to studying NGOs' participation in climate governance in authoritarian regimes as democracy might be expanded to the countries at present. Studying the issues and challenges faced by NGOs to perform these roles effectively is also worthwhile for future studies.

Although the review has successfully demonstrated that NGOs have played a broad range of roles in national climate change governance, it has a limitation in terms of the literature sources. The systematic review was limited to the two databases only, making the number of articles reviewed relatively small. Therefore, future systematic

reviews on the topic are encouraged to broaden the databases to produce more comprehensive insights into the roles of NGOs in climate change governance.

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