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The road to environmental participatory governance in Taiwan: collaboration and challenges in incineration and municipal waste management

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Waste management has been a problem for Taiwanese society over the past two decades due to rapid economic growth and urbanisation. The building of incinerators, however, has stimulated controversies and social discontent over the impacts of incineration on both environmental and human health. In Beitou, a district in the capital city of Taiwan, not-in-my-backyard activism was launched against the building of an incinerator, but the community later promoted the idea of a ‘zero-waste city’ and played a role in the decision by Taipei’s government. Using in-depth qualitative interview methods to interview local community actors, and green society members to understand the dynamics between actors, this research discusses these changes and employs the participatory governance approach to networks among residents of the local community and other actors. This paper also concludes that there has been a power shift in state–citizen relationships at the local level, deepening and consolidating democratic politics in Taiwan.

Keywords: Taiwan; incinerator; municipal waste; environmental governance; participation

1. Introduction

Municipal solid waste (MSW) is a common challenge that has stimulated social controversies in both industrialising and industrialised countries. Governments build incinerators as part of their urban management plans. On the one hand, this reduces the volume of solid waste; on the other hand, the negative ecological and human health consequences of incinerators have stimulated discussions and popular discontent. Protests against the building of incinerators and in defence of the environment have occurred in some countries, including the United States and the United Kingdom (Rootes 2009; Rootes and Leonard 2009). Similar political contention over the building of incinerators is widespread among Asian cities. For instance, Taiwan – the focus of this research – is facing a waste crisis as a consequence of its economic growth and rapid urbanisation (Agamuthu, Khidzir, and Hamid 2009).

The crisis of waste and its management have been a problem for Taiwanese society during the past two decades, as a result of rapid economic growth and urbanisation. According to Ko (2006a), the generation of MSW increased by 35% between 1981 and 1997 (the year an integrated recycling management policy was implemented) (Ko 2006b). Due to increasing land scarcity and a problematic management system, an

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enormous amount of waste was dumped illegally in Taiwan, arousing strong social discontent and even triggering conflicts between citizens and the government (Shen and Yue-Hwa 1997, 274). In addition, discussions on the environmental impacts of incineration have been widespread in Taiwanese society as it seeks resolution of its waste management problems. Although the waste incineration can be reduced significantly, for example, appropriate flue gas filter technology is applied; the trust between government and society has triggered controversy on the impacts of incineration.

In Beitou, a district in the capital city of Taiwan, not-in-my-backyard (NIMBY) activism arose against the building of an incinerator. Later, the community promoted the idea of a 'zero-waste city'¹ and played a role in affecting the decision of Taipei's municipal government. This research discusses these changes and employs a participatory governance approach, focusing on networks among residents of the local community as well as other actors. This paper sheds light on this empowering shift in state–citizen relationships at the local level and its significance in deepening and consolidating democratic politics in Taiwan.

Previous research on community resistance to locally sited incinerator projects has mainly focused on the processes of campaigns, such as the dynamics between the government, protesters, and other actors, such as environmental groups; the outcomes of campaigns; and the significance for environmental policy or the environmental movement generally (Grano 2015a; Ho 2006; Hsiao 1999), but have not sorted out the possibilities of collaboration between state and society in environmental management. Indeed, these NIMBY campaigns bring attention to the negative impacts of incineration on ecology and human health, and protest against having these projects near their communities (Dear 1992, 288) until they are removed. However, the NIMBY syndrome can be avoided through collaboration between the local community and the government (Dear 1992, 294). This paper will focus on how such collaborations work. Specifically, this paper addresses and asks a question: How has community participation interacted with other actors involved in the incinerator project and promoted 'zero-waste' measures to the community? This paper takes a meso-level perspective and a participatory governance approach to understanding collaboration between community and government at the local level.

Scholarly literature shows that participation by the local community is decisive in the successful implementation of infrastructure projects (Andersson and van Laerhoven 2007; Hawkins and Wang 2012) as residents of the community are able to take action and mediate development of projects within their own neighbourhoods (Eversole 2011; Parag *et al.* 2013, 1065). Additionally, public policies may be modified to meet local conditions (Andersson and van Laerhoven 2007, 1086). Finally, community participation enhances social empowerment (Talò, Mannarini, and Rochira 2014, 1). In this sense, partnerships between local governments and local communities can achieve better outcomes (Parag *et al.* 2013, 1065). In addition, Evans *et al.* (2005) have argued that the participation of the local community in the decision-making process reduces conflicts with local authorities and promotes better governance. Hence, this paper begins with a short theoretical introduction to participatory governance at the local level. It continues with a discussion of environmental governance in Taiwan, a description of the Beitou case, followed by analysis of, and findings from, this particular case of participatory governance. The paper concludes with a discussion on applications of the participatory governance approach and its implications for environmental governance in Taiwan.

2. Participatory governance at local level

Proponents of local governance often argue that changes in central-local relations result in “devolving certain powers of discretion to local bodies” (Bevir 2009, 44). Bevir (2009) believes that decentralisation plays a key role in governance because it dissolves the supremacy of the central government. Generally speaking, decentralisation means delegating power to local governments, which in turn redistribute authority to local agencies. Moreover, decentralisation “will make politicians more accountable and visible – less remote ... will engage and train more citizens in political activity, thus enhancing the very fabric of democracy” (Pollitt 2007, 378). This delegation of power at the local level “enhance(s) the opportunities for participation by placing more power and resources at a level of government that is closer to the people and therefore influenced more easily” (Bergh 2004, 781).

In addition to the decentralisation of government power, a core concept in local governance is the diffusion and sharing of this power through various parties at the local level and involvement of these parties in the policy process. These parties include sub-governmental organisations, the business sector, and civil society. The involvement of non-state actors in the policy process not only reduces the burden on government, it also reflects a core value of democracy – citizen participation. Zhong and Mol (2008) observe that participation enhances effectiveness and accountability in governance and the best and most effective form of participation should be sought and implemented. A wide range of participatory formats – such as public hearings, public polls, and citizen advisory committees – create the institutional settings for public participation (Zhong and Mol 2008, 900) and indicate that the right of public participation is supported by the state.

Nevertheless, a decentralised governing structure benefits participatory governance, but strong institutional capacity combined with active civil society also improves environmental policy outcomes (Fung and Wright 2001, 32). A local government with visionary and inclusive environmental policy goals is able to understand the need for public participation in decision-making and is willing to cooperate with civil society (Fung and Wright 2001, 28, 33). The power and role of the state is supposedly reduced in networks of governance. Rhodes (1996) sees governance as a socio-cybernetic system of self-organising networks that are focused on the interactions between the central government and other actors. In these cases, the central government collaborates with local governments and other agencies to provide public services, such as health care. Different actors have expertise in particular policy areas, and there is no single actor who dominates a single area. Governance provides a structure for enhancing public resources, such as knowledge, organisation, and authority in public policy-making (Benz and Papadopoulos 2006, 2). In addition, networks play a role as implementers. This mutual dependence between state and non-state actors, including sub-national agencies, non-governmental organisations (NGOs) and international organisations operating at various governing levels, “implies plurality of decision centres” (Rhodes 1996, 657) within networks. Networks are “any set of interconnected nodes...can be individuals, groups, organizations, or states...the patterns of relationship shapes the behavior of the occupants of a post, as well as influences others” (Kahler 2009, 3–4); they are ‘rooted in trust and regulated by rules of the game negotiated and agreed by network participants’ (Rhodes 2000, 61). In these interactions, the government is not able to govern a complex set of actors directly; they have responsibility for themselves and govern themselves. These networks challenge government steering and may develop their own policies (Rhodes 1996). When this model dominates, the state does not have complete control over public

policy, especially as the non-state actors may bargain within the networks (Peters and Pierre 1998, 225).

As far as participatory governance emphasises the involvement of citizens, rather than other non-state actors such as those in the business sector, scholars claim that it “brings citizens back in” (Heinelt 2010, 30). The actors’ interests, priorities, and choices are revealed through the networks in which they participate; these networks also create a structure that can constrain actors or provide them with opportunities for action. Hence, participatory governance should be bottom-up participation, which generates solutions based on both diverse professional knowledge and the experiences of citizens. Shortening bureaucratic procedures can also enhance accountability (Fung and Wright 2001, 18). Schneider takes poverty reduction as an example, arguing that enabling the poor is the key to success. To empower one sector of society is not necessarily to ‘take over power from somebody else’, and there is no need to overrule a higher authority.

Taking the different forms described above, the relationships between state and non-state actors have highlighted the participatory patterns of actors in governance; these relationships indicate that networks are becoming more complex (Benz and Papadopoulos 2006, 2). Such complicated processes of governance, which involve multiple actors (including the state, sub-governmental actors, and non-state actors) lead to different forms of collaboration. This breaks the traditional governance mode in which the state dominates all policy processes. Policy-making is currently becoming increasingly complicated as the power of the state is diffused and shared with other actors, such as sub-national agencies, private, and voluntary organisations. The relationships between state and society are reconstituted, giving more actors opportunities to participate in public policy processes (Garnett and Lynch 2009, 28). New networks have been woven, and new relationships between state and society are in the process of developing.

2.1. Challenges in network-based participatory governance

Though participatory governance strengthens political legitimacy and improves the quality of governance (Mah and Hills, 2014, 340), the concept has been criticised. Democratic deficits and legitimacy gaps can occur. Benz and Papadopoulos (2006) argue that governance is a combination of multiple decision centres in which no clear hierarchical structure exists. The participating actors form various networks that have their own centres; these represent different interests, which in turn further their reach through negotiations within their own networks (Benz and Papadopoulos 2006, 2–3). Therefore, “democracy then refers to the interaction between these groups of actors” (Benz and Papadopoulos 2006, 1). The democracy in governance, however, raises some concerns, one of which is the question of democratic legitimacy. Governance is not a clear concept, and it is difficult to establish clear responsibilities among state and non-state actors or the extent to which the power of non-state actors surpasses the power of the state (Benz and Papadopoulos 2006, 1). Furthermore, not all groups are included in the networks, and therefore rent-seeking and cost transfer to the excluded groups will occur (Benz and Papadopoulos 2006, 8). Benz and Papadopoulos (2006) conclude that there is no fixed governance arrangement; rather, it depends on the existing institutional framework and variations “according to policy domains, levels of governance, and between nations or parts of the world” (Benz and Papadopoulos 2006, 11).

In addition, it is difficult to discuss the role of the state within governance networks because the state is only one actor in, for example, a policy implementation network.

Furthermore, as mentioned above, governance is not only “the variety of political and economic institutions ... were designed (or evolved) to address problems of governance” (Pierre and Peters 2000, 15), it also defines a process for steering and coordinating actors. It repositions the roles of state and non-state actors, but the role of the state in this process is unclear because actors influence each other dynamically (Pierre and Peters 2000, 22–23). Rhodes (1996, 661) argues that governance refers to the ‘hollowing out the state’ as central and local governments lose control of the delivery of public services. At the same time, Bevir (2009) believes that the fragmentation of state power is accelerated by globalisation, because intensive interactions between sub-governments, agencies, and other social organisations and corporations across global, regional, national, and local levels have forced governments to share power (Bevir 2009, 15). Thus, scholars using the actor-centric approach agree with Heinelt (2010, 7) argument that governance is ‘bringing citizens back in’ and is a process through which accountability is transferred to agencies and other bodies (Richards and Smith 2002, 33). Since networks of governance are “challenging the hierarchic model” (Peter 1996, 430) and are also “make(ing) and implement(ing) policy when there are no generally accepted rules and norms for conducting policy making” (Hajer 2003, 175), they are further diffusing accountability and combining governing structures (Rhodes 2006, 439). On the whole, this is a radical change in the policy-making process. Policy-making and implementation processes become the results of bargaining or “cooperative exchange” (Ansell 2000, 311); they are no longer defined hierarchically.

Deployment of participatory governance varies among regimes. Mah and Hills (2014) show that different countries implement different approaches to public participation in nuclear policy-making: a national referendum was launched in Sweden in the 1990s while the government of the United Kingdom adopted public consultation on nuclear policies in 2007 (Mah and Hills 2014, 341). Power structures and relations within network-based participatory governance are different in different contexts (Parag *et al.* 2013, 1067). As a whole, democracy is supposed to be a prerequisite for governance because a democratic and pluralist regime provides the preconditions for the emergence of governance.

These critiques call for attention to the application of network-based participatory governance in Asian countries. In studying environmental governance in Asia, Beeson (2010) identifies a lack of ‘democratic elements’ – liberalism, individualism, freedom of choice, and personal advancement – in some Asian countries, such as China. This makes social mobilisation and collaboration between state and society problematic, and therefore government acts inefficiently in the implementation of environmental policy. Moreover, the quality of public participation in Asian countries, such as discursive practices in policy processes, is weak due to a lack of environmental awareness and the absence of a participatory mechanism for “resolving political conflicts over the environment” (Beeson 2010, 281–282, 289). Taiwan is still a young democracy (dating from 1996), but the growing environmental awareness of its population, combined with advancements in environmental legislation and policy implementation, are revealing a deepening democratic process (Wong 2003, 235). Wong (2003) further notes that Taiwan has set an example in shedding the conventional image of an Asian society with patriarchal, authoritarian and conservative values and showing the possibility for democracy to take hold among Asian countries, particularly Chinese society. This paper aims to examine the application of network-based participatory governance in Taiwan and to understand the formation of a participatory governance structure that advances the collaborative relationship between government and community at the local level.

3. Research methods

This study is based on the results of semi-structured, in-depth qualitative interviews carried out in July 2013 with key informants including protesters, academics, and officers of environmental NGOs who engaged in an anti-incinerator project and in promoting a 'zero-waste community' in the Beitou district of Taipei city. These interview data are supplemented by the examination of archival documents, such as newspapers and Internet-based documents released by the Taiwanese government, to provide background information that facilitates a better understanding of these cases. The governmental documents enhance our understanding of decisions made by both central and local governments. In addition, information about the environmental protection department is helpful in investigating the relationship between this agency and other environmental organisations. It also serves as counter-evidence to the assumptions made in this study.

4. Environmental governance in Taiwan: change and continuity

Similar to other newly industrialising countries, Taiwan suffers from a number of environmental problems related to economic development. These include air and water pollution, problems with municipal waste disposal and nuclear radiation, and conservation issues. Additionally, the construction of physical infrastructure, such as highways, incinerators, and nuclear power plants, tends to incite widespread opposition and large protests (often including thousands of demonstrators). With the growth of environmental awareness in the 1980s and 1990s, a series of environmental movements were launched to fight pollution. These environmental movements challenged the rule of the authoritarian Kuomintang (the Nationalist Party, KMT), as Taiwanese citizens were angered by the exploitation of natural resources and the negative impacts on human health. Furthermore, these polluting industries and construction projects were controlled either by the KMT government or local authorities (Tang 2003; Grano 2015b; Ho 2011). Growing environmental protests have also encouraged the blossoming of environmental movements within civil society (Ho 2011, 284; Grano 2015b, 43), which have collaborated with political opposition movements during the process of democratisation (Tang 2003, 1036). At the same time, these environmental activists have shown their sympathies to the KMT's opposition, the Democratic Progressive Party (DPP) (Grano 2015b, 43) and the two entities later formed a partnership (Ho 2011, 285).

After the end of Martial Law in 1987, environmental protests became more frequent (Grano 2015b, 44; Hsiao 1999, 41). Taiwanese citizens have been protesting against the construction of a fourth nuclear power plant since the mid-1980s. A number of incidents have heightened the population's concerns over nuclear power, including a fire in the country's third nuclear power plant in late 1985. Moreover, grassroots protests against petrochemicals have pressured the government over compensation (Tang 2003, 1036). These forces later formed different grassroots environmental groups and also led to the establishment of a national environmental authority (Grano 2015b, 45). During Taiwan's democratic transition, several environmental policies have been implemented and institutionalised. For instance, the implementation of Environmental Impact Assessment (EIA) laws in 1994, the establishment of a sustainable development committee in 1997, and the passing of a national plan for environmental protection in 1998. The victory of the DPP in Taiwan's first presidential election in 2000 reflected the remarkably successful democratisation of Taiwan. With support from environmental groups, some environmental activists joined this new ruling party, believing that the DPP could restore

a balance between economic development and ecological considerations in Taiwan (Grano 2015b, 49). However, with the economic recession of 2001, the ruling party instead turned to development-oriented policies. For example, under the slogan of 'Fight for Economic Growth' (*Pin Jinjing*), the DPP renewed the plan for a CPC Corporation oil refinery in Kaohsiung at the end of 2002, indicating that economic growth had been re-prioritised in the national agenda at the expense of environmental protection. Such repositioning of the DPP with regard to environmental policy disappointed environmental activists, who left the DPP's administration as a result (Grano 2015b, 49–51; Ho 2011, 213–215). First under the DPP's administration and then later, after the KMT won the 2008 presidential election, environmental movements continued the fight for environmental justice and remain concerned about various environmental issues. Following the 2011 Fukushima nuclear disaster after the devastating earthquake and tsunami in Japan, Taiwan's fourth nuclear power plant again prompted controversy and debate. The Taiwanese government accuses the protestors of ignorance and failure to consider economic development; the population has responded with a call for a referendum to suspend construction of the plant. Nevertheless, the situation remains unresolved after a 25-year struggle that has included hundreds of debates and forums.

Against the background of democratic transition, the development of Taiwan's environmentalism has been motivated by the anti-pollution movement (*Fan Gonghai Yundong*). This movement seeks not only better living conditions and reasonable compensation for victims of pollution but also fights for environmental justice. In addition, the blossoming of environmental groups has helped victims of pollution in their efforts, and this has been an important force in establishing environmental governance in Taiwan. The rise of local communities has also played a role in environmental governance. As mentioned above, environmental activists were frustrated by party politics and the ruling party's re-prioritisation of economic development as the first item on its national agenda. Since 2000, environmentalists have focused on building a better community through a 'community empowerment campaign' (*Shequ Yingzao Yundong*). In this campaign, activists partner with grassroots forces on a wide range of issues (such as environmental education) and work to fight pollution (Chiou 2002, 46). Community security, community hygiene, and conservation are also important to this campaign. This community-based campaign has signified the rise of 'civic environmentalism' (Tang 2003, 1037) in Taiwan, which has joined forces with green groups, citizens, and government agencies to improve environmental management. The campaign is of particular benefit to local interests.

In the wake of Taiwan's democratisation during the 1980s and 1990s, the shift from a regulatory approach to environmental participatory governance has primarily occurred at the societal level: large groups of citizens, civil society and government are all working together on environmental governance. Environmental groups now do more than simply challenge authorities; they are also allied with grassroots societal forces in formulating, implementing, and monitoring local environmental issues that affect them. Networks and partnerships have been woven among different parties with the goals of sharing resources and enhancing learning. This consensus-oriented governing process (Van der Heijden 2014, 65) has significantly strengthened Taiwan's democracy. Moreover, the implementation of EIA requirements provides participatory opportunities for non-state actors in the environmental policy-making process. Nevertheless, there are some challenges ahead in adopting environmental participatory governance in Taiwan. Local networks with vested economic interests may hinder environmental protection advocacy in different localities in Taiwan (Tang 2003, 1037). Top-down decision-making in

environmental management is another barrier to participatory governance in Taiwanese society. As both economic development and political interests are major concerns of the government, most important decisions are made in closed-door meetings that exclude public participation (Grano 2015a). By exploring collaboration between the state and civil society in the area of municipal waste management, this paper examines the applicability and limitations of participatory governance in the Taiwanese context.

5. The transformation of protests against waste facilities in Taiwan

In response to mounting difficulties with municipal waste management, the Taiwanese government initiated the 'Solution for Municipal Waste' (*Dushi Laji Chuli Fangan*) in 1984. The core of this programme was the expansion of landfills (Environmental Protection Administration). However, because of increasing land scarcity and the negative environmental impacts of the landfills, this scheme could not effectively solve the waste crisis (Hsu 2006, 453). As the rapid increase in waste generation overwhelmed the capacity of landfills, the Taiwanese government promoted an incineration-oriented strategy in the 1990s and initiated the 'One City One Incinerator' plan (*Yi Xianshi Yi Fenhualu Zhence*) in 1994 (China News Service). According to this plan, 36 incinerators would be built across the island. As the gap between waste generation and treatment continued to grow, illegal dumping proliferated and triggered more serious protests in the early 1990s. The landfills created mounting political pressures, and the Taiwanese government determined to speed up incinerator construction across the country. However, this ambitious new plan immediately encountered public resistance. In the late 1990s, protests mobilised by local residents had slowed down the construction of incinerators. In 2002, four of the planned incinerators were abandoned because of strong local opposition, and the total number of incinerators to be built had dropped to nine (Friends of Nature and Green Citizens' Action Alliance 2012).

Protests against waste facilities in Taiwan emerged in the early 1980s as the Taiwanese government accelerated its building of landfills. The ambitious expansion of incinerators in the 1990s stimulated new waves of grassroots protests. Like community-based 'self-help' protests against the government's mismanagement of the environment and pollution (Dear 1992), local residents did not hesitate to use 'extra-legal actions', such as blockages or other barriers, to interrupt the construction of new disposal sites (Shen and Yue-Hwa 1997). However, since the late 1990s, the battle between society and the state over waste management in Taiwan has transformed into a more collaborative relationship. On the one hand, confrontational protests against waste facilities have gradually given way to policy advocacy or other forms of participation involving a higher level of professionalisation and rationalisation. On the other hand, the Taiwanese government has abandoned its incineration-oriented waste management plan and embraced a source-reduction strategy, actively promoting waste sorting and recycling. This transformation in Taiwan's approach to waste management is credited to the successful national anti-incineration movement of the early 2000s, which was facilitated by the partnership between grassroots activists and leading professional ENGOS.

Since 1998, as NIMBY protests against waste facilities proliferated and intensified across Taiwan, some Taipei-based NGOs, such as the Taiwan Watch Institute (TWI) and the Green Citizens' Action Alliance (GCAA), began to play an important role in supporting grassroots activism (Friends of Nature and Green Citizens' Action Alliance 2012). These NGOs had been active in the anti-nuclear campaigns of the early 1990s, accumulating valuable knowledge of social mobilisation and developing

abilities in public education, media mobilisation, and policy research. Their participation in the waste issue has changed the trajectory of the anti-incineration movement in Taiwan.

As environmental awareness increased among Taiwan's citizens, and various NGOs began to engage in the issue of municipal waste management, some members of grassroots NGOs were direct victims of the secondary effects of unsafe waste disposal. For example, members of the Conservation Mothers Fund, who were the victims of unsafe waste disposal, have learned about recycling management and the problems of incineration, and they now promote recycling in local communities. As early as the mid-1990s, NGOs began to engage in MSW management by proposing alternative methods of waste disposal (such as recycling and sorting) to reduce waste generation. As leading actors in the nongovernmental waste management and anti-incineration campaign in Taiwan, TWI and GCAA intentionally established connections among domestic activism, professional NGOs, and even transnational activism and used a 'boomerang' strategy to pressure the domestic government to make changes (Keck and Sikkink 1998). In 1999, TWI invited Dr Paul Connett, a professor of chemistry at St. Lawrence University in New York, to lecture on the health and environmental risks of waste incineration to the citizens of Taiwan ([Taiwan Watch 2013](#)). With 13 seminars across the island, the Taiwanese audience learned about the dioxin emitted by incinerators and its threat to both environmental and human health. In 2000, TWI and GCAA sent delegates to the first zero waste conference organised by a global anti-incineration network called GAIA (Global Alliance for Incineration Alternatives) in South Africa. In 2002, led by TWI and GCAA, some environmental NGOs and grassroots victim groups formed the 'Taiwan Anti-Incinerator Alliance' and made the 'Tungtai Declaration²', opposing waste incineration in Taiwan and advocating a zero-waste future. On the inaugural day of the alliance, local victims shared their experiences with environmental groups. In 2002, after the creation of TAIWA, the leading NGOs began to lobby lawmakers to pressure the government to suspend the budget for incinerator construction and review waste management policy. Eventually, the Taiwanese government gave in and stopped constructing incinerators in Taipei County and Taichung City in March 2003 (interview on 23 July 2013 in Taipei, Taiwan). In December 2003, the Taiwanese government began to promote waste recycling and pursue zero-waste strategies.

The movement led by NGOs such as TWI and GCAA has not only influenced the state's behaviour but also transformed grassroots activism on the issue of waste management. Since TWI and GCAA began leading the national anti-incineration movement in the late 1990s, environmental awareness among Taiwan's citizens has increased, and various NGOs have begun to engage in the issue of municipal waste management. Moreover, another type of NGO, mainly based in large cities and not directly exposed to the negative externalities of waste treatment, played a rather different, but also important, role in supporting the anti-incinerator movement (Dear 1992). These NGOs strongly emphasised public education, relying on experts to inform citizens, spreading information about the health and environmental risks of incineration, inspiring a broader audience to reflect on existing waste management systems and even on their current lifestyles. The TWI and the GCAA are examples of these NGOs. These consciously bottom-up efforts, combined with the support of green activist groups and the input of foreign experts, helped to promote environmental awareness among Taiwan's people. As a result, waste and recycling management is not only of concern to victims, but is a public issue for the entire island.

6. Beitou: from NIMBY to YIMBY

Today, the incinerator in Beitou is a unique resort destination in Taipei. Its harmonious coexistence with local communities and its contribution to the local economy through tourism have been credited as an example of first, the successful transformation of the Taiwanese government's waste management strategy and second, of the resolution of a social conflict – the transformation from NIMBY to YIMBY (yes-in-my-back-yard) – and is credited to the successful evolution of local anti-incineration activists and their collaboration with Taipei-based ENGOS.

Beitou is the second largest administrative district in Taipei City, famous for its hot spring resorts (Taipei City Government 2013). In 1998, a waste incinerator was built and put into operation without informing the local public.³ Although this incinerator was only 800 metres away from the nearest community, few local residents were aware of its existence until they became frequently disturbed by its odour and by liquid leaking from garbage trucks driving into the facility every day. The ash and dioxin emitted by the incinerator also contaminated the surrounding farmland and caused direct economic losses for local farmers (interview on 23 July 2013 in Taipei, Taiwan).

At first, residents affected by the incinerator in Beitou tried to express their discontent through institutional channels. Many times during 2001 and 2002, they reported pollution to the hotline established by the Taipei municipal government, but the government's response was minimal. Although Taipei's department of environmental protection did convene a 'Clear Air Meeting' in 2002 to resolve conflicts between the incinerator's operator and local residents, this arrangement (and subsequent economic compensation⁴) did little to reduce either pollution or local residents' distrust; it only increased the tension between local residents and the government (Ko 2006a, 58; Hsu 2006, 455). Moreover, the plan for 'Taipei-Keelung municipal waste cooperation', introduced in 2003, also intensified local residents' dissatisfaction.⁵

Having expressed their concerns to the government through conventional channels without any meaningful results, residents of Beitou decided to defend their rights using extra-institutional methods. They formed investigative teams to follow the garbage trucks that drove to the incinerator at midnight, revealing that private garbage trucks dumped domestic waste, and even industrial and medical waste, into the government-run garbage trucks. In order to strengthen their case, the anti-incinerator activists of Beitou established partnerships with TWI and GCAA, both based in Taipei. Since 2000, the local activists of Beitou, with support from TWI and GCAA, have organised several weekend meetings in affected communities to explain the environmental and health threats of incinerators to local residents (interview on 23 July 2013 in Taipei, Taiwan). In 2002, with assistance from TWI and GCAA, the Qili'an Environmental Voluntary Group (QLEVG) was founded. As a more institutionalised platform for anti-incineration activities, QLEVG mainly attracted professionals, teachers, physicians, and city councillors from communities near the incineration plant (Ko 2006a, 59). In the same year, soon after its creation, QLEVG launched a protest attended by more than 1,000 local residents, finally attracting attention from local media and authorities. In November 2002, QLEVG reported illegal dumping to the local judiciary and initiated legal action in February 2003 after a prosecutor discovered that waste had been burned illegally. The operator of the Beitou incinerator was ultimately convicted of illegal waste burning (Ko 2006a, 59).

Although the operation of the incinerator was not suspended, the Taipei municipal government built a theme park, playground, and swimming pool in the vicinity of the incinerator as 'compensation' for the residents (interview on 23 July 2013 in Taipei, Taiwan). Moreover, the Qili'an Environmental Voluntary Group attended public hearings

and asked for a greater monitoring role in the incinerator's operation. As a consequence, the relationship between this newly formed environmental group and the government has gradually changed. The Qili'an Environmental Voluntary Group asked the municipal government to use transparent plastic bags and demonstrated the correct way to sort garbage based on its source. The group also asked for random inspections of the incineration plant. At the same time, the Taipei municipal government installed 16 closed-circuit television cameras inside the plant to monitor its operation and regularly tested local air quality.

In short, there has been close collaboration between ENGOs and the government. A local victims' group has abandoned confrontational action and instead become a monitor and facilitator for the government. QLEVG, the Qili'an Environmental Voluntary Group, plays a supervisory role in refuse collection and incineration. Their contribution has changed government policy. Moreover, the environmental protection administration implements "Key points on implementing the public supervision of the incinerator operation" (Executive Yuan) in which the public plays a legal role in supervision (Ko 2006a, 60–61).

7. Discussion and conclusion

This study used a network-based participatory approach to discuss and analyse environmental governance at the local level in Taiwan. This paper has focused on Beitou citizens' monitoring of the incinerator in their community and their promotion of a 'zero-waste' city. The study found that Beitou's citizens have worked with different parties, such as environmental groups and agencies, throughout the monitoring and advocacy process. They have allied with environmental groups, and challenged and collaborated with the authorities, resulting in the formation of new networks for exchanging resources with other actors. Beitou citizens and environmental groups have expressed their dissatisfaction with the building of the incinerator and with their exclusion from the decision-making process. Later, municipal authorities adopted a new attitude and allowed Beitou's citizens to monitor the incinerator. They also implemented regulations requiring the use of transparent plastic bags for better waste sorting. It definitely illustrates how participatory governance has changed the involvement of non-state actors in the decision-making process and the relationship with the state actors suffering from the challenges of an increasing amount of waste and the negative impacts of incineration. The research also reflects that the Taiwanese government has become more responsive and has added different participatory mechanisms to the policy decision-making process, such as EIAs and public hearings, after Taiwan became a democratic regime in 1996.

The study also draws some observations: environmental confrontations between state and non-state actors at local level have brought a deeper understanding on the process of democratisation in Taiwan. The interaction between state and non-state actors has demonstrated the approach of community-based participatory governance implementable at local level in Taiwan and a solution to local environmental challenges. Moreover, in a departure from conventional environmentalism in Taiwan, citizens against the incinerator have joined with other environmental groups. According to previous studies, both middle-class intellectuals and scholars have played a major role in Taiwan's environmentalism (Grano 2015b, 54). However, the emergence of community empowerment campaigns, as discussed above, have added new force to Taiwan's environmental movement. The local community includes people with different backgrounds, such as professionals, teachers, physicians, and city councillors. They

united to form QLEVG and later allied with environmental groups for the purpose of expressing their grievances about the incinerator and pressuring the government to improve law enforcement. They share resources, such as information about incineration and environmental laws, and contact governmental officials through their personal networks. Thus, the combined forces of grassroots groups and civil society in community empowerment campaigns supports the community engagement of local residents and consolidates democracy in the local arena.

The local civil group, QLEVG, was able to monitor the Beitou incinerator and collaborate with government authorities. As a result, the government has implemented various measures, such as improving the design of the incinerator and providing extra facilities such as swimming pools and restaurants near the incinerator site as compensation to local residents. Unlike many earlier NIMBY cases in other locations in Taiwan, this case may illustrate the transition from NIMBY to YIMBY as well as the power of collaboration between local civil groups and government in the local arena.

However, this study also highlights some limitations that should be addressed: although participatory governance is implementable as a solution to local environmental problems, there is poor enforcement of EIA requirements and weak application of participatory governance in the Taiwanese context. Although the EIA laws were implemented in 1994, citizens still do not have a role in the environmental policy-making process. Lack of transparency and exclusion of citizens from the decision-making process are both observed in the case discussed above. Besides, the local interests may hinder the effective implementation of EIA. Grano (2015) points out that the EIA system would be easily corrupted to favour the interests of both developers and local leaders (Grano 2015b, 20, 32). Although the problem has not been revealed in this case study, the researchers should alert the patron-client collusions when studying local environmental politics in Taiwan. To some extent, the participatory governance approach cannot be fully explained in the Beitou case. Nevertheless, the rise of civic environmentalism in the local arena and collaboration between the local community and the government both reflect the consolidation of democracy in this newly democratised state. In short, this study discusses the collaboration between local civil society and the state in Taiwan, a collaboration that has taken root in local politics, particularly at the district level. However, these findings cannot be generalised to other locations in Taiwan; these cases occurred at particular times and in particular places, but still address the evolution of local community engagement in the context of environmental policy in Taiwan.

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Notes

1. 'Zero Waste City' advocates that the city should reduce the volume of waste to zero through the 3Rs (recycle, reduce, and reuse), while reclamation and incineration are not recommended.

2. Tungtai Declaration was a declaration for founding TAIA in September 2002. The declaration appeals the growth of toxic ash from incineration and hazards to Taiwan. About TAIA, Taiwan Watch <http://www.taiwanwatch.org.tw/issue/waste/about_taia.html>. Accessed on 26 January 2013.
3. Interview with Mr Wang, the convenor of Qili'an Environmental Voluntary Group (QLEVG) in Taipei on 23 July. Also mentioned in Ko (2006a), see reference 3, page 52.
4. The Taiwanese government implemented economic compensation to placate local communities where incinerators were built. Compensation agreements were mainly generated by the Central government and have been standardised in each case. Compensation without a mechanism for negotiation between the incinerator developer and stakeholders is problematic; the government should seek support from local politicians and governments to proceed with the building of incinerators (see reference 84, Hsu (2006), page 455).
5. The policy of Taipei–Keelung Municipal Waste Cooperation aimed for a mutual solution between the two cities to the problem of municipal solid waste. Taipei City burns the waste of Keelung City; then Keelung City, in turn, must manage the incinerator ash from Taipei City. This policy has increased the environmental burden on Keelung City and highlighted the problem of inequality. For further information, mutual agreement on Taipei–Keelung Municipal Waste Solution has been confirmed, and will be implemented in September, Nownews (2003), “Mutual agreement on Taipei–Keelung municipal waste solution has been confirmed and will be implemented in September”, accessed 5 September 2013; <http://www.nownews.com/2003/07/22/330-1486784.htm>.

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