Marine Policy 75 (2017) 271–277

Contents lists available at ScienceDirect

Marine Policy

journal homepage: www.elsevier.com/locate/marpol

The role of port cities and transnational municipal networks in efforts to reduce greenhouse gas emissions on land and at sea from shipping – An assessment of the World Ports Climate Initiative

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ARTICLE INFO

Article history:
Received 29 October 2015
Received in revised form
14 December 2015
Accepted 16 December 2015
Available online 29 December 2015

Keywords:
Ports
Shipping
Cities
Transnational municipal networks
Climate change
Governance

ABSTRACT

In 2008, 55 of the world's largest ports voluntarily adopted the World Ports Climate Declaration (WPCD) and the International Association of Ports and Harbours committed to long-term work on implementation through the World Ports Climate Initiative (WPCI). This article assesses the work of WPCI since 2008 and makes five recommendations that, if implemented, could support efforts to reduce the climate and environmental impacts of port operations and international shipping. In particular, as the impetus for the WPCD came from a port city – Rotterdam – and their engagement with a transnational municipal network – the C40 Large Cities Climate Leadership Group – the paper considers the role of cities and transnational municipal networks in governance, and the potential for cities to play a more active and influential role in the maritime sector. The article presents an overview of literature on the role and function of transnational municipal networks, the background and development of the WPCD, analysis of the work of WPCI, and a discussion concerning the potential of cities and transnational municipal networks to support and add value to WPCI or similar initiatives in the maritime sector. This informs the conclusions and recommendations to marine policy-makers and port stakeholders.

1. Introduction

Ports operate at the nexus of the world economy and are vital nodes in the countries and regions in which they are located, facilitating and enabling flows of information, materials, resources and peoples within countries, between countries, and across seas and oceans. Ports have traditionally been located in close proximity to urban areas and played an important role in the consolidation and growth of many port cities, not only in economic terms, but also with regard to culture, ideas and people. The urban life of port cities is often rich and unique in its character, contestations and diversity [1–4].

Whilst port operations have enriched – in multiple senses – the quality of life in many urban areas, ports also present challenges for the cities in which they are located, e.g. in terms of issues such as local air pollution from ships or inland transport, traffic and congestion, co-location of risky or polluting industrial facilities around ports. Such challenges interact with related urban dynamics and impact upon urban planning and other sectors, e.g. in terms of "upstream" investments in new infrastructure, changes to labour markets, or influxes of workers to informal settlements located in close proximity to ports [1,5,6].

The shifting, dynamic nature of such challenges means many problems are considered in isolation, as atomised, context-specific issues requiring local action and resolution. Nonetheless, some challenges have global implications and require the overcoming of barriers that create "first-mover" problems in multiple contexts. Few individual ports have the economic independence to refuse customers or dictate their terms to global markets when operating in isolation; the majority of ports are, to varying degrees, dependent on each other to solve complex, global challenges [1,6].

Climate change is an example of an emerging global challenge with profound implications for ports, port cities and maritime transportation [7–9]. Climate change is a multi-faceted challenge, innately linked to the patterns of urbanisation, population growth and human impacts of the industrial age [10,11]. The complexity of mitigating and adapting to climate change has stimulated a diverse range of experiments in communities around the world [12,13]. Cities are often said to be at the forefront of the global fight against climate change, initiating actions for mitigation and adaptation that go beyond national targets [14].

Many ports and port cities, as well as other stakeholders, have joined or formed networks focusing on climate change and/or related topics, such as sustainable development (e.g. EcoPorts, ICLEI). Network governance through transnational municipal

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http://dx.doi.org/10.1016/j.marpol.2015.12.012
0308-597X/

networks (TMNs), it is assumed, provides opportunities for knowledge diffusion and capacity-building among diverse groups of stakeholders, whilst providing the opportunity for collective or synergetic actions, or the mobilisation or representation of common agendas. Becker et al. consider such collective, participatory enterprise essential for ports in the fight against climate change [15].

This paper explores the role of port cities and TMNs in efforts to reduce the climate and environmental impacts of shipping. To do so, the paper presents an overview of literature on TMNs, before presenting a case that emerged from port city involvement in a TMN – the World Ports Climate Declaration and World Ports Climate Initiative (WPCI). The development and implementation of WPCI is described and assessed with reference to literature on TMNs, in order to highlight challenges and opportunities for the WPCI and similar initiatives. These Results inform a Discussion and Conclusions proposing the need for stronger engagement of port cities and TMNs – in cooperation with ports, and stakeholders active in ports and shipping – to combat climate change and tackle other environmental problems.

2. Literature review: transnational municipal networks

Climate change and the need for sustainable development are discussed in an extensive body of literature, much of which emphasises the role of municipalities as participating actors in multi-level governance [16,17]. In recent decades, various transnational municipal networks (TMNs) have been formed to facilitate municipal work for sustainable development and, in recent years, such networks have given significant emphasis to efforts to mitigate and adapt to climate change [18–20].

TMNs usually have multiple objectives and fulfil a range of roles, which Bouteligier categories as "(1) to exchange information, knowledge and best practices; (2) to increase cities' capacity; and (3) to voice cities' concerns in the international arena" [21]. Feldman offers a variation, stating "Networks perform three vital functions in regard to environmental problems: (1) generating and diffusing information; (2) undertaking effective policy evaluation strategies; and (3) initiating local response efforts without waiting for national efforts" (both formal and informal)" [13].

TMNs may be considered as "quasi-governmental" entities, with strong links to conventional, top-down models of government [22]; as flexible and dynamic alternatives to such hierarchies [21]; or as "governing from the middle" and mediating boundaries between other stakeholders [23]. TMNs may be global or regional in scope, addressing multiple or single themes, or be formed of specific categories or type of member (e.g. C40 Large Cities Group, Eurocities, Eurotowns). Typically, TMNs are associations to which member municipalities pay subscription fees in return for a range of services, including e.g. networking, knowledge transfer and capacity-building, the coordination of interests and representation in international processes such as the UNFCCC[1], participation in events or projects, promotion or dissemination of information.

Hakelberg highlights the capacity of TMNs to enable "governance by diffusion" in an "increasingly fragmented, polycentric and transnational" system of global climate governance [24]. According to Feldman, the convening power of TMNs (as a platform and a forum) can "empower local levels of governance to develop the capacity to manage problems, prompting what we term "glocal" cooperation", with "broad diffusion of experience" an inevitable consequence [13]. In a similar vein, Giest and Howlett note that "TMNs are the institutional foundation for a concerted effort in climate change within and between countries", whilst recognising that TMNs provide added value when working in specific regions and with the support of national governments [25; see also 26]. In other words, TMNs may provide an opportunity to provide a framework for municipal climate change action, yet the framing context will influence the extent to which those frames are filled with content.

TMNs may thus provide a potential forum for coordination of interests, knowledge transfer, experimentation and other collaborative action concerning climate change. Despite this, TMNs are sometimes perceived as representing the "usual suspects" or as consolidating or over-emphasising particular types of cultural or institutional context, themes or solutions [21,27,28]. For example, Acuto [29] and Bouteligier [21] note the presence of a "core–periphery" dynamic in the internal geography of the C40 Cities Climate Leadership Group, both in terms of representation, activity and thematic focus. McFarlane [30], Robinson [31], and Ward [32] note that certain categories of cities and municipalities tend to be over-represented, or dominate, TMNs. A large group of cities are not represented or are under-represented in TMNs. These "invisible cities" can be variously interpreted as being silenced in TMN agendas, less active than prominent TMN members, or in some cases, as "free riders".

Others challenge the supposed benefits of TMN activities to disseminate information and transfer knowledge. For example, Dolowitz et al. challenge proponents of "governance by diffusion" by contending that when moving from inspiration to implementation, U.S. municipalities tend not to draw upon international or high-profile examples. Rather, when identifying policies options, "instead of a directed and purposeful search occurring, leading to the best possible policy being borrowed… searches were less about best practice and more about convenience and perceptions of similarity" [33]. Posing the question "Why don't cities learn?" in a global study, Campbell suggests that in the best cases, "deliberate and systematic" collection of hard and soft data occurs and facilitates municipal learning [34]. Thus, TMNs face the challenge of assisting the typical municipalities, as observed by Dolowitz et al., to achieve the best practice observed by Campbell. This may require a re-conceptualisation of some TMN approaches or activities.

As previously noted, Giest and Howlett argued that the added value of TMNs is linked to the context in which they operate, and a regional (or continental) focus may facilitate action in certain contexts [25]. In the U.S. context, Krause suggests some municipal networks appear to have stronger leverage power or influence on their members' actions than others, albeit to a very limited extent. However, the ""leakage" of knowledge and norms" through publicly-available information may "may increase the average GHG relevant activities being taken by all cities, and in doing so, decrease the impact able to be attributed directly to membership" [35]. In other words, "free rider" municipalities may achieve as much or more as TMN members; however, this interesting question lies outside of the scope of this paper.

3. Case: The World Ports Climate Declaration

The previous section presented an overview of literature discussing the role of TMNs and their theoretical potential, as well as important criticisms and challenges. In the following section, the World Ports Climate Declaration is presented as a manifestation of activity to address the environmental and climate impacts of operations a global industry, ocean-going shipping. The WPCD was a city-led initiative, in which a TMN played an instrumental role; its

[1] For example, ICLEI – Local Governments for Sustainability plays a similar consultative role to the UN as the International Association of Ports and Harbours (IAPH).