

Article

The Role of Transnational Municipal Networks in Transboundary Water Governance

Savitri Jetoo

Department of Social Sciences, Åbo Akademi University, Turku 20500, Finland; savitri.jetoo@abo.fi;
Tel.: +358-50-524-2874

Academic Editor: Athanasios Loukas

Received: 5 December 2016; Accepted: 5 January 2017; Published: 10 January 2017

Abstract: The transboundary nature of stressors impacting shared water bodies has been traditionally recognized in agreements between nation states. Several developments have led to new layers of cross border environmental actors, including regional and city level interactions. This proliferation of non-state actors is witnessed in two large water bodies, the Baltic Sea and the North American Great Lakes. In both regions, transboundary water governance was led by nation states in agreements to improve heavily contaminated waters, the Helsinki Convention (1974) and the North American Great Lakes Water Quality Agreement (1972), respectively. Whilst there has been much research on transnational regional networks, especially in Europe, there has been less theoretical work done on transnational municipal transboundary water networks due to the delay of recognition of the legitimacy of these local government actors. This paper aims to examine the role of the transnational municipal networks in transboundary water governance by looking at the case studies of the Union of Baltic cities in the Baltic Sea region and the Great Lakes and St. Lawrence Cities Initiative in the North American Great Lakes Basin. It does this by assessing the role of these transnational municipal networks in bridging water governance gaps in these regions.

Keywords: water governance; North American Great Lakes; Baltic Sea; transnational municipal networks; governance gaps; transboundary water governance

1. Introduction

In 1972, the United States and Canada signed the Great Lakes Water Quality Agreement to “restore the chemical, biological and physical integrity” [1] of the waters of the Great Lakes whilst in 1974 the coastal states of Russia, Finland, Sweden, Germany, Denmark and Poland signed the Helsinki Convention to “to assure the ecological restoration of the Baltic Sea, ensuring the possibility of self-regeneration of the marine environment and preservation of its ecological balance” [2]. Whilst these agreements might be hailed successes because they resulted in the key national actors being brought to the table and they provided a clear sense of direction, the current ecological status of both water bodies are not an indication of the ability to meet restoration or pollution prevention goals. The failure of these instruments to result in continued good ecological status of these water bodies and the recognition that a changing governance landscape is needed for effective restoration led to the proliferation of non-state actors in the governance of landscape. It can also be argued that the failure of these instruments also led to the evolution of them to include non-state actors in the decision making process.

This changing governance landscape in both regions has resulted in increased action by stakeholders including regional bodies, transnational partnerships, local governments, non-governmental organizations and activists. Some of the key actors include regional bodies such as the European Union which influences governance of the Baltic Sea through such instruments as the EU strategy for the Baltic Sea (EUSBS) and the Council of Great Lakes Governors who impacts the governance through the Great Lakes Charter. There has been much transnational cross border interactions in

Europe and North America such as the Council of European Municipalities and Regions (formed in 1951) in Europe and the Council of Great Lakes Governors. This mirrors the changing landscape of environmental governance in general, with the fading out of the nation state and is particularly evident in the governance of climate change, with partnerships such as Cities for Climate Protection and the Climate Alliance. There has been limited work done on the role transnational municipal networks in transboundary water governance literature. This article aims to bridge this gap in the literature by peeling back the layers of transboundary water governance to the transnational municipal networks level and examining their role in transboundary water governance. It does this by examining the case studies of the Great Lakes and St. Lawrence Cities Initiative in the governance of the North American Great Lakes and the Union of Baltic Cities in the Baltic Sea.

2. Literature Review: Multilevel Governance, Water Governance, Transnational Municipal Networks

The concept of multilevel governance has emerged as attention has been shifting away from the central state, away from the command and control paradigm of government to governance that is dispersed amongst many centers of authority, with many actors in different institutional settings. It can be defined as follows [3] (p. 29):

“The explicit or implicit sharing of policymaking authority, responsibility, development and implementation at different administrative and territorial levels, i.e., (i) across different ministries and/or public agencies at central government level (upper horizontally); (ii) between different layers of government at local, regional, provincial/state, national and supranational levels (vertically); and (iii) across different actors at the sub-national level (lower horizontally).”

Multi-level governance refers to the continuous bargaining process among several levels of government, supranational, national, regional and local and was seen as a key characteristic of EU policy [4]. It takes geographical scales into consideration, considering governance at the local, national, regional and international levels and points our focus to these developments in politics: political mobilization inside and across institutional boundaries, policy making that blurs the lines between those who make the policy and those who receive it and policy decisions that are less fixed and embedded into the system [5]. Governance is no longer fixed or federalist (type I governance) moving towards a “type II” governance architecture with complex overlapping jurisdictions, adaptive properties and problem solving that change according to the governance demands [6].

2.1. Water Governance

Water governance refers to the steering of activities surrounding water resources. According to the UN [7] (p. 47):

“The governance of water in particular can be said to be made up of the range of political, social, economic and administrative systems that are in place, which directly or indirectly affect the use, development and management of water resources and the delivery of water services at different levels of society.”

Water governance and water management can be confused in the literature, especially as it relates to integrated management of water. Water governance sets the rules surrounding water resources whilst water management operationalizes these rules on the ground. As such, governance determines whether there is a need for water transfers and management decides on the types of shovels to buy to start excavation. In the North American Great Lakes and Baltic Sea regions, water governance would refer to the political, social, economic and administrative systems that are put in place to guide decision making, usually of federal actors which is implemented through management actions usually by municipal actors.

There is agreement in the literature that the water crisis is a crisis of governance [3,8,9]. Given that water is the place where the impact of climate change is first felt in uncertain weather events such as flooding, droughts etc., the governance of water has become increasingly complex. In addition to external stressors such as climate change, the challenges of water governance is compounded by key environmental changes such as increased population growth and the increasing demand and pollution of water, aging water infrastructure, lack of governance capacity and changes in farming practices to meet the increasing demand for food. Some features of the water crisis relate to poor governance within a multi level system, including institutional fragmentation, multiple stakeholders in any policy area, lack of capacity of sub national governments, weak institutional and regulatory frameworks [3]. One might argue that the corollary of this, the hypothesis here is that increased capacity of sub-national governments would help in lessening these gaps in governance effectiveness. It is with this in mind, that attention is focused on transnational municipal water governance. Better water governance can result from increased capacity of sub-national governments and help in overcoming barriers at the local level to the implementation of policy directives. However, should municipal governments also be engaged in setting these policy objectives? This paper attempts to answer this question.

2.2. Transnational Municipal Networks

Transnational cooperation and interactions are not new, for as long as there were geographical boundaries separating states, there was cross border trading and travel. There is much work in the literature on transnational networks, with one of the earliest accounts in 1971 by Keohane and Nye who defined transnational networks as “contacts, coalitions, and interactions that cross state boundaries that are not controlled by the central foreign policy organ of governments” [10] (p. 311). More recent studies on transnational relations examine the types of actors involved, with a key distinction specifying that at least one actor is non-state, whose regular cross border interactions is not on behalf of national or international government [11]. The global nature of environmental stressors has focused attention on transnational actors and this is manifest in the literature on advocacy networks [12], social networks [13] and epistemic communities [14]. These studies focus on understanding the role of transnational networks in global change processes, trying to elucidate how these transnational actors influence international and domestic policies.

This study is more concerned with the extent to which transnational actors and networks, more specifically transnational municipal networks constitute transnational water governance. As stated before, governance is more encompassing than the work of nation states alone, with rule systems that include state and non-state actors. Governance, according to Risse [15] (p. 298) refers to key concepts such as the “maintaining and creating of political order and providing common goods for a given political community on whatever level”. This definition is particularly pertinent to water governance, as water is a common public good. This definition also places emphasis on the mechanism of governance, rather than be defined by the network of actors involved. This then lends readily to the concept of transnational municipal water governance, which can be defined as transnational municipal networks that sets rules to achieve goals for water resources. Whilst there have been studies on transnational governance networks for climate governance [16], there has been no documentation in the literature on the role of transnational municipal networks for water governance. In fact, a search of the terms “transnational municipal networks” and “water governance” in databases such as Google scholar reveals numerous studies on transnational municipal climate networks but none on water.

This article aims to bridge this gap, by examining two transnational municipal networks involved in water governance; The Great Lakes and St. Lawrence Cities Initiative and the Union of Baltic Cities, both of which are involved in governance of two large water bodies, the North American Great Lakes and the Baltic Sea. Some key questions will be asked in this article, such as how do cities become involved in transboundary water governance and what are the ways in which these transnational municipal networks gain and deploy authority in order to steer the governing of water resources?

The Evolution of Transnational Municipal Networks

Transnational municipal networks have a long history in Europe, dating back to the Middle Ages with the Hanseatic League, an association of cities with a common interest in international trade; this league existed from the middle of the 12th century to the middle of the 17th century and made a lasting impact on trade in the Baltic region [17]. Whilst there has been increasing national cooperation with the EU, the value of local cooperation was slower to be formally recognized with the CEC Green Paper on the Urban Environment in 1990, to becoming an embedded feature of European governance, with “cooperation in cities” being a key theme throughout presentations at the 7th Strategy Forum of the EUSBSR held in Stockholm during 8–9 November 2016. There were presentations that highlighted the cooperation of cities in the digital economy to cooperation on wider initiatives evidenced in the Turku process of cooperation between the city of Turku in Finland and St. Petersburg in Russia (and later joined by city of Hamburg) [18]. Further, at this forum, leaders such as Niklas Zennström of Race for the Baltic Sea emphasized the need to cooperate and move from seeing the Baltic see as a problem to seeing it as a collective opportunity. This sentiment is captured in formal European reports, such as the European Green Paper on Urban Mobility which sums up the need for cooperation of cities as follows: “local authorities cannot face all these issues (economic, social and environmental) on their own; there is a need for cooperation and coordination at (the) European level...” [19] (p. 3).

The multi-level nature of governance is part of the new Europeanization that is a characteristic feature of Europe after integration by the European Union (EU). Multi-level governance in the EU is evidenced by multiple spheres of governance, such as supranational, national and subnational [6,20]. In the EU multi-level governance landscape, power did not simply shift upwards but authority was shared across multiple territorial levels among private and public actors, blurring the boundaries between different spheres of politics [21]. In Europe, transnational municipal networks have allowed the local level to gain access to key decision makers, maximizing the opportunity provided by the shifting power structure within the EU’s multilevel governance landscape [22]. Networks such as Eurocities facilitate direct membership by cities, with 170 members in 35 countries [23]. Examples of other such regionally defined, direct membership networks include the Alliance of the Alps, Climate Alliance, Cities for Climate Protection and the Energie-Cities.

In North America, the evolution of transnational municipal networks took a slightly different trajectory than in Europe. These differences can be attributed to the lack of a EU like mechanism in the North American governance landscape. There are also other differences in North America. In Canada and the United States, their constitutions include only two orders of government, the Federal and the Provincial or State. For many issues, the distribution of power and oversight between federal and provincial governments can be fuzzy, with substantial overlap between them, with both orders of government concerned with the governance of natural resources, health, environment and agriculture [24]. For example, in the realm of water governance, in Canada, offshore waters fall under the umbrella of the federal government whilst nearshore waters fall under the jurisdiction of the provincial government. This can result in both federal and provincial governments acting as gatekeepers, limiting the power of lower level stakeholders.

There is some indication that local government can create voluntary action and facilitate the lower entry points of new actors, as in the example of climate change which has been largely driven by bottom up approaches in the absence of national action [24]. For example, the City of Vancouver was invited as one of the first four member cities of the United Nation’s Climate Neutral Network [25]. Likewise, in the United States of America, the development of regional networking of cities can be traced to forerunner city in climate change, Portland, which was the first US city to develop a carbon reduction plan in 1993 and played a fundamental role in international association of localities working to reduce emissions [26]. According to Osofsky and Levit [26], top down decisions in the US did not lend themselves to operational practicality but lower level agreements carry legal sanctions such as budgetary cuts, personnel decision, long term natural gas purchases and incentives. In the case of Portland, the city’s commitment to green business motivated businesses to take measures to get ahead

of the predicted regulations on climate change. This precedence can be useful in the role of cities and transboundary water governance, as a few forerunner cities can be useful examples of effective action.

3. Methodology-Bridging the Governance Gaps

There is agreement in the literature on stressors to the North American Great Lakes [27] and the Baltic Sea that the breakdown of ecosystem function in both water bodies is a crisis of governance [28]. In both basins, water governance is failing due to lack of coherence and coordination between actors. This paper explores the interactions in transboundary water governance between transnational municipal networks and national and regional initiatives in water governance in the Baltic Sea Region and in the North American Great Lakes Region. It does this exploration in a multilevel governance framework, with the hypothesis that the transnational municipal networks help to narrow the policy gaps between local and national governments (vertical level) and between cities themselves in cooperating to influence both policies. This paper argues that the local scale is small enough and lends itself readily to the flexibility of experimentation, which can then be transferred to national policies. It argues that transnational municipal networks influence transboundary water governance by influencing the policy making process, through the bridging of governance gaps. As such, this paper reviews the role of the two transnational municipal networks in bridging the water governance gaps.

This study advances the hypothesis that transnational municipal networks can bridge the governance gaps, leading to more effective transboundary water governance. It tests this hypothesis through two case studies, the Great Lakes and St. Lawrence Cities Initiative and the Union of Baltic Cities, examining their role in bridging the governance gaps. Further, this study compares the responses in both regions to reveal key emerging themes in transboundary water governance by transnational municipal networks. This research aims to answer the question: what role can transnational municipal networks play in transboundary water governance?

3.1. Water Governance Gaps

In a study conducted by the OECD [3] on multilevel water governance in OECD countries, it was found that there is a need for better multilevel governance of water in OECD countries, with gaps in horizontal and vertical coordination among different institutions. The OECD conducted a survey on water governance in OECD member countries and based on the responses of 17 members, identified key multilevel governance gaps (Figure 1) which retard coordination and implementation of water policies.

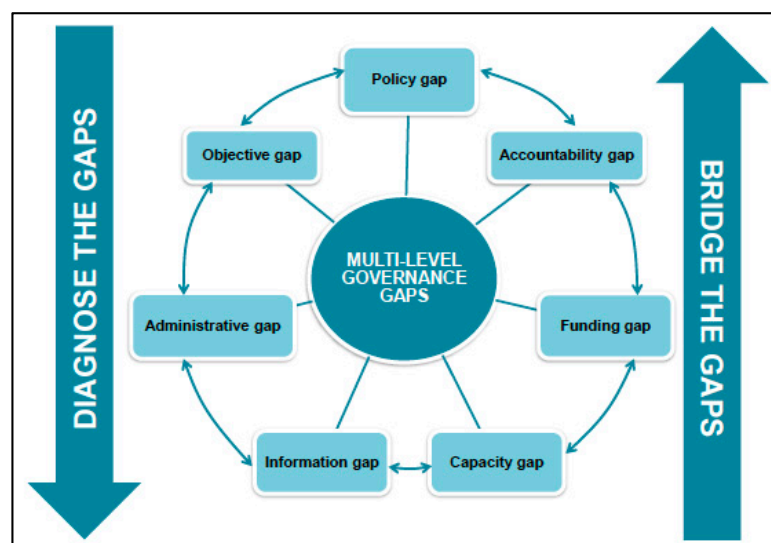


Figure 1. Multilevel Governance Gaps [3].

These governance gaps are as follows [3]:

- **Funding Gap:** Insufficient financial resources to execute water governance responsibilities is the main barrier to vertical and horizontal coordination of water policies. This was found in two-thirds of the OECD countries surveyed. This highlights the need for increased financing and innovative financing mechanisms.
- **Capacity Gap:** Insufficient scientific, technical and infrastructural capacity of local actors for design and implementation of water policies. It was identified as the second most important challenge in OECD countries, especially at the sub-national level. This highlights the need for local capacity building.
- **Policy Gap:** Fragmentation of water related responsibilities at all vertical levels, including national and sub-national and the lack of horizontal institutional coordination between policy fields. This was found in two thirds of the countries and highlight the need for mechanisms for cooperation and system wide approaches.
- **Administrative Gap:** Geographical mismatch between hydrological and administrative boundaries, leading to resource and supply gaps and implementation challenges. This highlights the need for instruments that reach the appropriate scale.
- **Information Gap:** Asymmetrical information (quantity, quality and type) amongst stakeholders involved in water policy. This highlights the need for better sharing of information.
- **Accountability Gap:** Lack of transparent practices across scales, largely due to insufficient users' commitment, lack of concern, awareness and participation. This presents an obstacle for integrated water policy in half of the OECD countries surveyed. This highlights the need to strengthen the integrity framework at the local level, for citizen involvement and for quality instruments.
- **Objective Gap:** Different rationales create obstacles for adopting convergent targets, especially in the case of motivational gap. This highlights the need for instruments to align objectives.

3.2. Case Comparison

This study uses the comparative case methodology, which is one of the many social sciences research methodologies that are applicable to case studies. The main reason for choosing this methodology is that it focuses on key developments within a small number of cases, with the aim of elucidating the given hypothesis through identifying similarities and differences in the given cases [29] (p. 13). This study considers the importance of context in choosing case studies from similar developmental contexts, both situated in highly developed regions of North America and Europe, both with decades of experience in transboundary water governance. It can be stated here that both cases represent large water bodies that are shared by many municipalities around the world, and also international transboundary water bodies shared between and amongst countries. Both basins house millions of residents, with 35 million North Americans living on the shores of the Great Lakes and 85 million Europeans living on the shores of the Baltic Sea. Both areas are also subject to common anthropogenic stressors as a result, including nutrient enrichment, aquatic invasive species, hydrological modifications, chemicals of emerging concern and micro plastics, all of which compounded by the overarching stressor of climate change. Both regions have similar challenges in multilevel water governance, with multiple and overlapping jurisdictions and with a crisis of governance that can be traced to jurisdictional fragmentation and limited engagement of local actors in transboundary water governance. Because of these features, there is the potential for these regions to learn a lot from each other.

4. The Great Lakes and the Baltic Sea—The Tale of Two Large Transboundary Water Bodies

Located solely in North America, the Laurentian (or North American) Great Lakes, along with the St. Lawrence River, are the largest freshwater body on earth, accounting for one fifth of the world's freshwater supplies. These five lakes—Huron, Ontario, Michigan, Erie and Superior—and their

connecting tributaries cover a water surface of 246,000 km² (95,000 square miles) and the catchment covers about twice that area, 521,000 m² of basin (201,000 square miles) (1.5 times the area of Finland) and were formed by the melting of glaciers about 10,000 to 15,000 years ago [30]. The Great Lakes contain 24.6 quadrillion L of water; this amount of water would cover the continents of North America, South America and Africa with water one-foot-deep [31]. This rich water supply is also reflected in the ecological diversity of the area, including large forests, extensive wilderness areas with abundant wildlife population, rich agricultural lands and mineral deposits and sport fishery [32]. This ecological diversity and complexity is reflected in the diverse institutions and the complex governance system in place for this transboundary water system. The governance of the North American Great lakes is compounded by the number and diversity of stakeholders including two federal governments (the United States and Canada), eight US states, two Canadian provinces, many regional organizations, transnational municipal networks, dozens of charitable organizations and approximately 120 Native American/First Nation authorities [33].

There is much commonality between the North American Great Lakes and the Baltic Seas. Like the North American Great Lakes, the Baltic Sea is almost completely landlocked and is one of the world's largest semi-enclosed bodies of water, albeit brackish. The Baltic Sea covers 386,000 m² (148,000 square miles), about 160% more water surface than the Great Lakes. The catchment area of the Baltic Sea is even larger, four times as large as the Baltic Sea [34], and approximately three times larger than the catchment area of the North American Great Lakes. The Baltic Sea was also formed from a glacial retreat, the Scandinavian Ice Sheet, some 14,000 years ago [34]. Although the Baltic Sea covers more area, it contains less water than the Great Lakes, holding an average volume of 21 quadrillion L of water [35]. The ecosystem of the Baltic Sea is also less diverse than that of the North American Great Lakes, due to its brackish nature. According to HELCOM [36], the freshwater input from the catchment is larger than the salt water input from the North Sea, leading to low salinity that only few marine plants and animals are able to survive in, making the ecosystem more vulnerable to stressors such as overfishing, habitat destruction and pollution.

However, the large areas of the Baltic Sea basin showcases the diversity of cultures and landscapes surrounding the Baltic Sea, as its coastal area is shared by Finland, Russia, Estonia, Latvia, Lithuania, Poland, Germany, Denmark and Sweden, all European Union Members except Russia and all speaking different languages. This diversity in cultures is reflected in the diversity and number of actors in the governance of the Baltic Sea. Much like the Great Lakes, the governance of the Baltic Sea follows a multilevel framework, with many layers associated with EU membership of most countries (except Russia). The governance of the Baltic Sea evolved from the complex history of the region, with the end of the Cold War leading to closer national cooperation and the EU enlargement strengthening this cooperation, turning the Baltic Sea into an internal EU Sea [37]. According to Kern and Löffelsend [38], this "Europeanization" of the Baltic sea has led to three modes of governance in the Baltic Sea Region: International governance by nation states (agreement among national governments), International governance with nation states (international policy networks with governmental and non-governmental actors) and transnational governance without nation states (transnational networks). There are also these governance modes in the North American Great Lakes but this paper will focus only on transnational municipal networks in both regions, giving a brief overview of each in turn, starting with the Great Lakes and St. Lawrence Cities Initiative and following with the Union of Baltic Cities.

4.1. The Great Lakes and St. Lawrence Cities Initiative

In the past, the participation of the local government in Great Lakes governance has been on an ad hoc basis, with invitations to binational public meetings but this has changed with the institutionalization of local government participation in the form of the Great Lakes and St. Lawrence Cities Initiative (the Cities Initiative). The Cities Initiative is a binational coalition of mayors and local leaders with a vision for a clean, healthy and vibrant Great Lakes and St. Lawrence River.

According to their website [39], the Cities Initiative was established in 2003 by the Mayor of Chicago, Richard M. Daley with the vision of “leading by example, taking action and getting results, mayors will engage and inform the public, collaborate with all orders of government, and work with leaders in other sectors to advocate for stewardship of the lakes, river and region to sustain the best possible future for this precious freshwater resource and the people and region that thrive in it”. This initiative was indeed visionary, as it was the first transnational cross border municipal network between the United States of America and Canada. In Canada, the founding chair was Toronto Mayor David Miller.

This network consists of approximately 126 cities located on the shores of the Great Lakes (Figure 2) representing the views of 14 million residents around the Great Lakes and St. Lawrence River [39]. It is recognized as a non-profit organization in the United States and a registered corporation in Canada. The Cities Initiative has a governing structure composed of the Board of Directors (selected mayors) and chairpersons, an international secretariat concerned with operational aspects located in Chicago and the member cities that meet annually to vote on resolutions. The Cities Initiative also has sub networks to deal with particular issues, but these do not have formal offices.

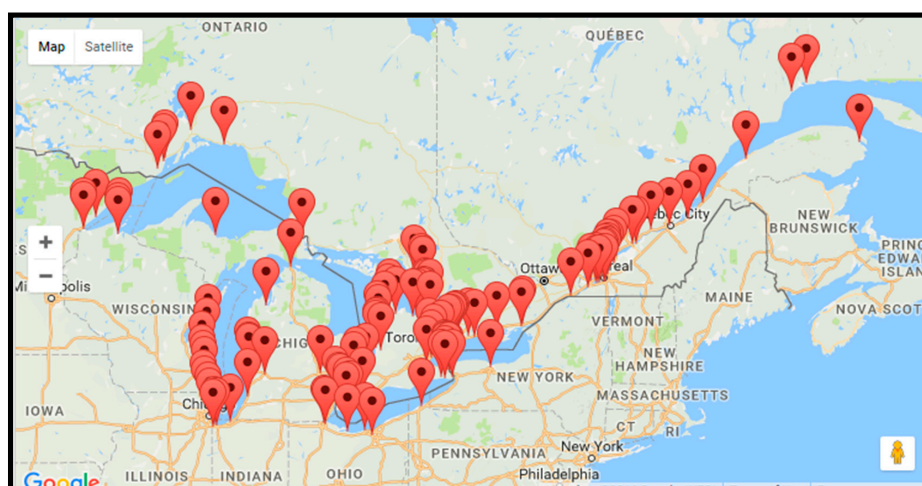


Figure 2. Map showing member cities of the Great Lakes and St. Lawrence Cities Initiative [39].

4.2. The Union of Baltic Cities

The Union of Baltic Cities (UBC) is one of many transnational networks operating in the Baltic Sea Region. However, it is one of the few transnational networks without membership by nation states and it is also a network of municipalities. It can be argued that the increasing transnationalization of municipalities is driven by European Union initiatives, through funding arrangements that support cooperative arrangements beyond nation states. The transnationalization of municipalities is also driven by policies that are made at international and supranational levels that involve implementation at the local level and as such, collaboration amongst municipalities is one way of getting their voices heard. The evolution of transnational municipal partnerships such as the Union of Baltic Cities (UBC) is closely tied to the evolution of political relationships in the region. In this case, the strengthening of municipal collaboration can be traced to the fall of the Iron Curtain, as it was the first transparent municipal elections in Poland in June 1990 that heralded a new era of legitimate self-governance in Poland and led to collaborations between mayors of Gdansk and Kalmar that provided the vision for the formation of the UBC [40]. The Union of Baltic Cities was founded in Gdansk on September 1991, by 32 cities from Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Norway, Poland, Russia and Sweden [41].

There is comparable number of cities in this network as in the GLSLCI, with a total of 100 member cities (Figure 3) [41]. UBC is a non-profit voluntary organization that conducts its work through seven commissions; cultural cities, inclusive and healthy cities, planning cities, safe cities, smart and

prospering cities, sustainable cities and youthful cities. The Union of Baltic Cities is registered at the Province Court of Gdańsk, XII Economic Department, National Court Register, Register of Associations and other Social and Professional Organisations under No. KRS: 0000005342. The Union's taxation identity number NIP is 583-10-66-139 and REGON is 190048545. The organizational structure of the UBC consists of the Presidium (President, three Vice Presidents), which makes decisions between board meetings, the Executive Board, which is the highest authority between General conferences and the operational Secretariat, which executes the daily activities of the UBC. The Secretariat is located in Gdańsk, Poland.



Figure 3. Map showing the member cities of the Union of Baltic Cities [41].

5. Bridging the Governance Gaps—The Role of Transnational Municipal Networks in Transboundary Water Governance

5.1. The Funding Gap

The OECD [3] found that the main obstacle to effective implementation of water policies in OECD region is the funding gap; countries indicated that, “the absence of stable and sufficient revenues of sub-national actors is a primary challenge for co-ordinating water policy between levels of government and for building capacity at the sub-national level”. This funding gap can be an obstacle for effective governance of the North American Great Lakes and the Baltic Seas but transnational municipal networks can acquire sources of funding through membership fees and through grants that can help bridge this gap.

Both the Great Lakes and St. Lawrence Cities Initiative and the Union of Baltic Cities obtain revenues through membership dues that are allocated to programs. However, due to the multiple funding mechanisms associated with multiple layers and programs of the EU, there is a larger funding pool that the Union of Baltic Cities can apply to secure funds from, such as the European Commission. There are no supra-national funding mechanisms such as this that the Cities Initiative can tap into, although it has received periodic funding from foundations such as the Joyce Foundation, the Mott Foundation, the Wege Foundation, the Brico Fund, etc. According to the Cities Initiative annual report 2015–2016 found on their website, the organization employed a third party (The Institute for Conservation Leadership) to develop a funding strategy that was focused on inputs from membership growth and associated fees, additional private foundation funding and partnerships and annual meeting revenues in order to secure sustainable financing. The membership fees for both networks are comparable; in 2008 the GLSLCI collected US\$306,000 from its members [42] whilst the UBC [43] collected Euros 255,363 in 2008.

However, whilst the main source of funding for the GLSLCI was membership dues, the activities and budget of the UBC Environmental Commission shows clearly that it collects money from the EU through the INTERREG program and from other sources such as the Nordic Council of Ministers. For example, for the period of October 2007 to September 2009, the Environment commission received funds from the following EU sources [44]; £40,000 from TACIS (Technical assistance program stimulating partnerships between EU and the Community of Independent States) for a healthy cities collaboration with WHO, £120,000, £700,000 from TACIS BSR INTERREG IIIB for integrated management system for Russian Cities and other funding from Nordic Council of Ministers and national governments. The extra layers of the European Union allow the UBC access to financial resources that are much greater than that of the GLSLCI. As can be seen from the above examples, EU funding is greater than membership dues and allows for participation in diverse projects aimed at transboundary water governance in the Baltic Sea Region.

This comparison highlights the increased access to funding by the UBC and can start dialog in the Cities Initiative on how to access funding from national governments and supranational level for work on the transboundary water governance of the Great Lakes.

5.2. The Capacity Gap

The OECD survey also uncovered the capacity gap as another important multi-level governance challenge faced by OECD countries, which is contrary to the widely held assumption that the lack of capacity is a problem for developing countries only. This capacity gap refers to all forms of capacity, including expert and technical know how, availability of skilled staff, time and capital infrastructure. This capacity gap is particularly relevant for transnational municipal networks, as new technologies to combat pollution and to increase efficiencies such as in wastewater treatment are often introduced at the sub-national level and require expertise at this level. The hypothesis proposed by this paper is that transnational municipal networks such as the Cities Initiative and the UBC can help in bridging these gaps through the use of select tools at the sub-national levels.

On their website, the Cities Initiative indicates the willingness to work together with stakeholders to improve services and increase investments to protect and restore the Great Lakes, as working together has the dual benefit of protecting the lakes and enhancing the quality of life and economic well being of the residents in the region. This cooperation is one of the key ways in which the GLSLCI bridges the capacity gap in transboundary water governance, as it builds capacity for water governance through the sharing of skills, through contractual agreements, through working together on projects and through sharing of best practices. For example, they have compiled a “best practices library” that can be easily accessed on the website, where members can submit and share their best practices and tools and documents that are relevant to municipal issues in the Great Lakes St. Lawrence Region. This best practices library also helps in lessening the information gap.

There is evidence that these best practices have been operationalized on the ground, through initiatives to reduce nutrients entering the western basin of Lake Erie. The Cities Initiative has entered a partnership in December 2015 with the Ontario Federation of Agriculture, formalized through a Memorandum of Cooperation for the reduction of phosphorus from farmlands draining into the Thames River basin (that goes into Lake Erie). This has the potential to contribute to the binational and provincial 40% phosphorus reduction target set under the Great Lakes Water Quality Agreement and the Western Lake Erie Collaborative Agreement [39]. Through working together on the strategy, there was shared knowledge and insights amongst the agricultural and agribusiness representatives, First Nations, drainage professionals, municipalities, conservation authorities and non-governmental organizations (NGOs) that have led to the reduction of the capacity gap for transboundary water governance. This initiative will extend its reach to more farmers as the strategy is implemented in the Upper and Lower Thames Basin.

Other evidence of capacity building includes sharing of information and working together on implementing green infrastructure at the local level, working together and sharing expertise to prevent

invasive species such as the Asian Carp from entering the Great Lakes and St. Lawrence River and building capacity after crisis such as lead in drinking water in Flint, by working with members to identify and rectify lead based pipelines in the drinking water infrastructure. The Union of Baltic Cities also have similar capacity building partnerships, in the areas of green infrastructure, reducing of nutrients and improving water infrastructure. This is clearly articulated in the UBC Sustainability Action Programme 2016–2021 Stairway towards Sustainable Baltic Cities [45] (UBC, 2016), where under the goals of making UBC cities leaders in integrated water management and improving the ecological status of the Baltic Sea, the objectives are stated as:

- To launch a Baltic Smart Water hub
- To facilitate capacity building for water management and support knowledge based communities
- To increase UBC cities capacity for integrated water management

There is evidence in the strategy that capacity will be built through training and using tools developed by the UBC Sustainable cities commission and with partners. Capacity is also built in an environment where there are partnerships and collaboration on common issues. The UBC has an organizational culture of “open house”, where partnerships are welcome in joint efforts for sustainable Baltic Cities. The UBC has partnerships centered on the EU strategy for the Baltic Sea Region (EUSBSR) and other EU partnerships, partnerships with the Helsinki Commission, with VASAB, with the Nordic Council of Ministers, with Local Governments for sustainability (ICLEI) and with the Covenant of Mayors.

The capacity building of the Union of Baltic Cities is facilitated through the seven commissions (Cultural Cities, Inclusive and Healthy Cities, Planning Cities, Safe Cities, Smart and Prospering Cities, Sustainable Cities, and Youthful Cities). Whilst the Cities Initiative has representatives in Quebec City, Montreal and Ottawa, they do not have formal offices in these locations, limiting their work in these regions. The sub-networks of the UBC has offices in several locations; The UBC has its headquarters in Gdansk Poland, whilst the Sustainable Cities Commission (Environment and Sustainable Development Commission) is located in Turku, Finland and the Energy Commission is located in Oskarshamn, Sweden. These regional offices can further help in local mobilization for capacity building on key transboundary water projects. In this regard, it is better positioned for capacity building, as its commissions are located in different regions in the Baltic Sea Region, whilst the only office of the Cities Initiative, the international secretariat is located in Chicago.

There are several capacity building initiatives that are implemented under the UBC Sustainable Cities Commission, including the integrated storm water management (iWater) and interactive water management. Under the iWater, common management methods for integrated storm water management are being developed for the Baltic Cities by the city of Riga (lead on this project), Jelgava, (LV), Söderhamn and Gävle (SE), Helsinki and Turku (FI) and Tartu (EE). Likewise, the Interactive Water Management (IWAMA) project builds the technical capacity of wastewater treatment plant operators and makes investment in wastewater infrastructure, in a bid to reduce nutrient inflows to the Baltic Sea, through partnerships with 17 key partners in Estonia, Finland, Germany, Sweden, Latvia, Lithuania and Poland. Whilst the aim of these partnerships includes capacity building, more research is needed to investigate the effectiveness of project implementation to see how and where capacity was built. However, it is clear that these transnational municipal partnerships, the Cities Initiative and the Union of Baltic Cities have already built capacity through joint programs and strategies to address stressors to the ecosystems of the Great Lakes and the Baltic Sea.

5.3. The Administrative Gap

The administrative gap in multilevel water governance refers to the geographical mismatch between hydrological and administrative boundaries, which has led to national policies that are difficult to implement locally. By their very definition, transnational municipal networks help to bridge this gap through inter-municipal partnerships, with coordinating bodies such as the Great

Lakes and St. Lawrence Cities Initiative and the Union of Baltic Cities. Through their participation in policy planning and implementation processes with national and supranational actors, their interests are articulated and taken into account to ensure better fit between administrative and hydrological boundaries. In the Great Lakes, for example, the Cities Initiative has provided comments on the development of the Great Lakes Protection Act and now has a seat at the table, on the Great Lakes Guardians' Council, which was established under the Great Lakes Protection Act to improve collaboration and coordination amongst Great Lakes Partners [39]. The Great Lakes Protection Act was passed by the Ontario Legislature in October 2015, which requires the Ontario government to work with local groups to address stressors to the Great Lakes. This Act takes the administrative gap into consideration, through provisions under Part V, Proposals for initiatives article 11, which refers to "geographically-focused initiatives" to achieve purpose of the act [46]. The Cities Initiative also effectively narrowed the administrative gap through obtaining a seat at the table for decision making in the Great Lakes Water Quality Agreement implementation body, the Great Lakes Executive Committee and through a partnership Memorandum of Cooperation (MOC) signed by the Canada-Ontario Agreement (COA) and the Cities Initiative [47]. The COA is a federal provincial agreement signed by Canadian federal ministries and the Province of Ontario to "restore, protect and conserve Great Lakes Water quality and ecosystem health" [48]. The Memorandum of Cooperation also potentially serves to reduce the administrative gap, as it aims to strengthen collaboration between Ontario and its municipalities, and to establish dialog and pursue common objectives and address concerns relating to issues of the Great Lakes Basin ecosystem.

Similarly, by nature of its formation, the Union of Baltic Cities aims to reduce the administrative gap in multi-level governance of the Baltic Sea. The bridging of this administrative gap is implied in article 1, in the Statute of the Union of Baltic Cities [41], which articulates its aim "to act on behalf of cities in common matters towards regional, national, European and international bodies" and to "contribute to joint Baltic Identity, cohesion and common understanding in the region". There is the implied understanding that with closer cooperation, hydrological boundaries will be respected. Close partnerships with key national, supranational and local stakeholders lead to shared understanding and lessening of the administrative gap; there is cooperation with stakeholders such as the Council of Baltic Sea States, the Helsinki Commission, the Conference of European Peripheral Maritime Regions (CPMR), the Baltic Sea States Sub-regional Cooperation network, Baltic Sea Parliamentary Conference, the Baltic Development forum, the Baltic Sea Region Network, the Baltic Sea University Network, Euroregion Baltic, Vision and Strategies around the Baltic Sea (VASAB) and other partners. The seven commissions, with sub-regional offices, also help to lessen the administrative gap through closer collaboration with local stakeholders.

5.4. The Information Gap

The OECD found that the information gap presented a barrier to effective water policy implementation in OECD countries. This governance gap refers to information generation and sharing among relevant stakeholders, as well as a lack of integrated information management amongst stakeholders across ministries, agencies and local government involved in water policy. It is argued here, that through information sharing initiatives such as best practices databases and the water hub, both the Cities initiative and the Union has helped in narrowing this information gap. By participating in national and supranational forums, such as the Great Lakes Executive Committee and the EU Baltic Sea Strategy, these transnational municipal networks have a role in setting common standards for data collection and in defining common indicators for assessing and evaluating progress. For example, in their participation in the Great Lakes Executive Committee, the Cities Initiative has a say in the setting of indicators of performance for the Great Lakes, as stipulated in the Great Lakes Water Quality Protocol 2012. Similarly, by participating in the EUSBSR as the Horizontal Area Coordinator (HAC) in the Horizontal Area "Capacity", the Union of Baltic Cities is helping to considerably narrow the information gap.

For sharing of information horizontally to member cities, both transnational municipal networks utilize their organizational structure for development and transmission of this information. Both networks follow the typical transnational municipal network structure, consisting of an international secretariat, the executive members (Board of Directors, and President) and the general assembly where members vote on resolutions and the member cities [49]. As can be seen in Figure 4, this organizational structure facilitates the flow of information from the hub, consisting of the central Secretariat and the executives, to the member cities and also information flows amongst individual member cities. Information from outside sources can be fed to the member cities and upwards in the network or to the central hub and outwards and downwards to the member cities. This helps in narrowing the information gap for more flexible and quicker decision making.

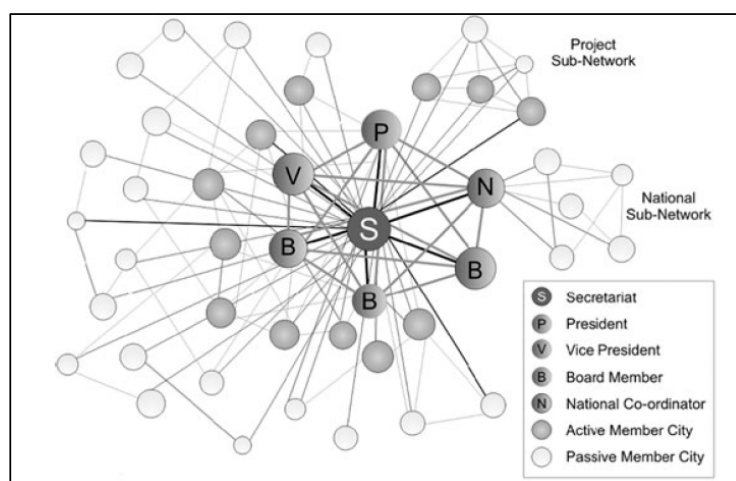


Figure 4. Structure of transnational municipal networks [49].

5.5. The Accountability Gap

According to the OECD [3], the accountability gap is a barrier to multilevel water governance in half of the OECD countries surveyed, and refers to lack of public concern and low involvement of water users' associations in policymaking and issues related to lack of evaluation of water policies at the national and sub-national levels. This problem of accountability is acknowledged in governance of both the North American Great Lakes and the Baltic Sea. By gaining seats the national and supranational levels, both the Cities Initiative and the UBC have narrowed the accountability gap. In both cases, their increased participation in transboundary water governance has the potential to increase accountability within the governance architecture by adding an extra layer of voluntary oversight in the implementation of the Great Lakes Water Quality Agreement and the Helsinki Convention.

However, there must be caution in celebrating this increased participation. Whilst there is evidence of progress from increased memberships and partnerships, how does this translate to better transboundary water governance and actions on the ground that leads to restoration of these water ecosystems? While there is much assessment of national and supra-national goals, there is not much evidence of evaluation of the work of these transnational municipal networks. More research is needed on this and on the views of member cities on the effectiveness of these partnerships. Arguably, increased public participation is one mechanism that can lead to greater accountability but not if the public participates by showing up but is not engaged in decision making. Further research is needed in this area as to what constitutes public participation and engagement. These assessments of policy goals are crucial to help in understanding whether the applied policies and partnerships are effective and for informing adjustments to the policy and partnership arrangements. The UBC does include metrics of success in its strategic framework for 2016–2021, but it does not include how and when these metrics will be evaluated. UBC indicates that it will measure success through stakeholder participation,

number and satisfaction of member cities, number and quality of partners and partners' evaluation of UBC's work (though it does not specify how this will be done), familiarity of stakeholders with UBC work, effectiveness of UBC communication and its capacity to attract outside funding.

5.6. *The Objective Gap*

The objective gap refers to the tensions in competing objectives, such as finding a common ground when there are competing financial, economic, social and environmental protection objectives for collective development and implementation of water policy. This governance gap can be narrowed through initiatives that foster policy coherence across competing sectors, such as agriculture and water protection. Transnational municipal networks can help in bridging the gap that occurs between national and local policies, and by virtue of their participation and engagement across tiers in the multi-level water governance infrastructure, can help in aligning policy objectives. One example of this was the case of the Great Lakes Cities Initiative, articulating to the Province of Ontario their position on provisions in the Great Lakes Protection Bill, so as to ensure that cities have the ability to meet the provisions in the proposed Act. For example, in the Cities Initiative comments on the Bill, it called for an amendment so that the Minister seeks input from the municipality before a Geographically Focused Initiative is approved [39]; this step ensures that objectives are aligned before they are passed.

Similarly, by virtue of being the Horizontal Area Coordinator in the EUSBSR, the UBC can ensure coherence in objectives across policy areas for action in the Baltic Sea. One potential area for resolution is the apparently conflicting messages in the EU Common Agricultural Policy (EUCAP), which provides incentives for increased production to farmers, and the Baltic Sea Strategy, which identifies nutrients as the largest source of pollution to the Baltic Sea. In its leadership position in the EUSBSR, the UBC is uniquely positioned to narrow this objective gap for better multilevel water governance as it brings the relevant actors to the table for dialog on this issue. Whilst it is advancing work in other key areas, it is still an objective gap here and an opportunity for the UBC to help in bridging this gap.

5.7. *The Policy Gap*

A reported two-thirds of OECD [3] countries surveyed face a policy gap due to fragmented roles and responsibilities for water policy implementation at the territorial level. The transnational municipal networks such as the Cities Initiative and the UBC are able to bridge this policy gap, as they are able to share responsibilities with national and local governments. These transnational municipal networks have the potential to align different ministries and policies, but as was shown in the objective gap section and the case of agriculture in the Baltic Sea area, there is still tension between the objectives of the EU CAP and the EUSBSR. The cooperation between transnational municipal networks and the national and supranational actors help in bridging the policy gap, especially as it relates to policy coherence between the national and local levels, as they encourage cross cutting agendas and incentives for cooperation. By agreeing on indicators to evaluate and measure success, there is the opportunity to bridge the policy gap further.

By participating in national and supranational committees such as the Great Lakes Executive Committee and the EUSBSF HAC, these transnational municipal networks help in the smooth implementation of governmental decisions at the local level, thus narrowing the policy gap. There is still work to be done to narrow the policy gap as it relates to competition between policies and national ministries.

6. Additional Analysis and Discussion

6.1. *Clustering and Its Impact on Transboundary Water Governance*

The examination of the role of transnational municipal networks in bridging water governance gaps has revealed many similarities and key differences in the Great Lakes and Baltic Sea Regions.

In both regions, membership in transnational municipal networks consists of geographically dispersed cities, extending from the municipality of Superior on Lake Superior to Gaspé, QC, on the St. Lawrence River in the Great Lakes Region while the UBC extends from the City of Kemi in Finland from the North to the city of Chojnice in Poland on the south. In both regions, the local governments vary in size from very large cities to very small towns, but there is a clear pattern of territorial clustering of cities. In Europe, this clustering can be around cities of influence, with most members (greater than 15 cities) from Poland and Sweden, countries that started the partnership. Although it is argued that language has some role in territorial patterns of cities in Europe [49], this does not play an important role in the clustering for the UBC, where the working language is English. For the Cities Initiative, territorial clustering can be observed around Toronto and Chicago, two of the most powerful members and, again, the founding members of the Cities Initiative. This clustering reflects the far reaching influence of these two founding cities on the recruitment process, cities whose influence was recognized in a rating by ATKearney [50], which ranked Chicago and Toronto as 7th and 17th, respectively, on their global cities index, of most powerful global cities evaluated on measures including business activity (30%), human capital (30%), information exchange (15%), cultural experience (15%) and political engagement (10%).

Cities located close to these global cities of influence may be motivated to join the Cities Initiative as there is the greater likelihood that their issues can now have greater representation on the national and regional agenda by association with these cities of influence and they can have access to greater resources for problem solving. This clustering can be helpful for environmental governance and for bridging the governance gaps, especially if the clusters occur near problem areas such as the western Lake Erie Basin. However, this clustering can also lead to areas being neglected with no membership in key geographical zones. For example, there are no members in the Cities Initiative for most of the northern border of Lake Erie, with the exception of the most northern tip where there is clustering around the Niagara Falls region. This clustering effect highlights passive cities that do not join networks, as cities that join transnational municipal networks are seen to be already highly motivated and active. In this sense, transnational municipal networks can be seen as networks of “pioneers for pioneers” [49], increasing the momentum of cities that are already active on transboundary water governance issues. This then points to the opportunity inherent in this approach, the opportunity that exists for these networks to engage and energize passive cities. Thus far, through their membership extension and outreach strategies, both networks are actively courting passive cities.

Partnerships that are visibly evident through clustering patterns can improve transboundary water governance through the bridging of the governance gaps as shown in the preceding sections. In both cases studied, the Cities Initiative and the UBC have contributed to more effective transboundary water governance by having representation at key forums, by gaining a seat at the table and having their voices heard in discussions such as what issues are of importance in the governance of these water bodies. The Cities Initiative contributed to policy formulation by having a seat at the table on the Agreement Review Committee for review of the Great Lakes Water Quality Protocol, with the recommendations forming key components of the newly revised Great Lakes Water Quality Protocol 2012. The Cities Initiative was also given a seat on the Advisory committee with states to form the Great Lakes Water Compact Council to regulate water quantity issues such as diversions out of the Great Lakes. Similarly, with their role as the Horizontal Area Coordinator of the Capacity Area, the UBC is helping to improve the effectiveness of transboundary water governance by contributing to Baltic Sea policy formulation and implementation.

Both networks are also contributing to efficiency in transboundary water governance, through optimization of resources by sharing of information costs and skills and by pooling of financial resources through membership fees which are then allocated to interventions aimed at improving transboundary water governance and other focused initiatives. Resources are also optimized through cooperative agreements with national and regional institutions. For example, the institutionalization of the Cities Initiative was formally recognized at the signing of the Canada Ontario Memorandum of

Cooperation (COA MOC) (17 July 2008) between the Ontario Government and the Cities Initiative, where John Garretsen, the Ontario Minister of Environment declared “today we formally recognize the importance of engaging municipalities as key partners in sustaining the health and vitality of the Great Lakes” [47]. This agreement allows the municipalities in Ontario to have a voice in the decision making process on matters of the Great Lakes that impact them. Cooperative agreements such as this also contributes to better transboundary water governance as it leads to increased trust and the building of public confidence through more engagement with stakeholders. In the Baltic Sea Region, this increased trust is manifested through the selection of the UBC to coordinate the Capacity Horizontal Area of the EU Strategy for the Baltic Sea.

6.2. Key Emerging Themes—Governance Modes

There are clear patterns of governance displayed by both the Cities Initiative and the Union of Baltic Cities that lead to efficiency and effectiveness gains through which they have impacted the processes of transboundary water governance. These gains are made through efforts aimed at internal governance of the network (self governing) and through efforts to influence the external governance environment (external governing). Internal and external governing modes are characteristic of other transnational municipal networks, and is widely documented in the literature [49,51,52]. The internal governing mechanisms used by both the UBC and the Cities Initiative served to strengthen the network through recruitment of new members and through achievement of set goals by working together. These strategies are highlighted in their mission statements, with the Cities Initiative stating that “Members of the Cities Initiative work together” [39] and in the UBC “work is carried out by the member cities through active cooperation” [41]. Both TMNs investigated uses the same strategies for internal self governing, such as information sharing, project based cooperation and benchmarking and recognition of best practices and similar strategies for external governing, such influencing the governance process and working together on shared goals.

6.2.1. Self Governing Strategies

There are key similarities in the ways in which both networks self govern. Information sharing is the key-defining feature of both networks, as the sharing of information is used to steer members towards a common vision of restored ecological status of the Great Lakes and the Baltic Sea. There is an annual gathering of members where members meet each other and share key information on the network and about individual cities. Both networks also share best practices for key areas such as strategies to improve water quality and restoration project details. However, whilst the sharing of best practices can help cities learn from other places through the plethora of examples, there is the potential weakness that when members self report their best practices on the website, as in the case of the Cities Initiative, there is no verification of the practice and hence, no guarantee of its efficacy or replicability. A search of the Cities Initiative website showed a plethora of examples of best practices but there is no evidence that these practices are taken up by other municipalities and implemented in another jurisdiction. More research is definitely needed on the uptake of best practices by other cities. There is the potential of the Cities Initiative to learn from the UBC on the sharing of best practices, for in addition to reporting their best practices on the website, the UBC engages several cities directly in developing and testing best practices together. Cities were paired, with a guiding city with the good practice and the partner city, which implemented the practice after working on the implementation plan with the guiding city, using internal and EU funding. According to the review of the initiative, it was a success as the twinning created new links between cities and served as a catalyst for new environmental initiatives, whilst at the same time improving environmental performance of the participating cities. This collaborative creation and implementation of the project and generation of the information together, through shared evaluation of the results is a better model for best practice sharing as it provides a better guarantee of the results and the replicability and transferability of the project.

Transnational projects are an important means to share skills and information and improve performance with respect to transboundary water protection and ecosystem restoration. The Cities Initiative and the UBC member cities cooperate on projects through sharing of information and other resources either by jointly implementing educational programs or bidding for projects and implementing them jointly on the ground. In the case of the Cities Initiative, Cities work together on developing common policies and then independently implement them and share the results. For example, the Green CiTTS program developed a Sustainable Municipal Water Management (SMWM) declaration that was adopted at the annual meeting and was piloted by six cities independently, but there was collaboration through the sharing of information and results. The UBC has a different model, which entails cities working together on project implementation on the ground and this cements the cities closer together through daily interactions and site visits and as such, serves to strengthen the network. For example, the Baltic Urban lab aims at improving urban planning through collaboratively developing new tools and models and testing them at four project sites and documenting and sharing the results of the project. This highlights another key difference between the two networks; the UBC also facilitates project cooperation by providing a common platform for members to work together to apply for project funding through primarily EU mechanisms. This access to additional funding helps in achieving goals that cities might not be able to on their own due to limited resources.

Both networks also used the strategies of recognition and benchmarking to reach the entire network of cities. The Cities Initiative and the UBC recognized stellar performance by special mention at the Annual meeting or by creating a competition and publicly congratulating the winner. The networks can use benchmarking as a tool for measuring performance, where a standard and its indicators of success are clearly defined and progress is monitored and winners recognized. For example, the Cities Initiative announced the Water Conservation Framework in 2015, whereby cities commit to working towards a 15 percent reduction (compared to year 2000 usage) in water consumption by the end of the year. During the one of its annual meeting, the Cities of Windsor and Thunder Bay were officially recognized and lauded for their innovation and progress toward meeting this goal [39]. Going a step further, UBC utilizes competition to motivate cities to work towards a desired standard, by opening up a competition and engaging member cities in voting for the coveted prize of the title of winning city. For example, the UBC has defined standards and criteria for the award of “Best Sustainable City Development practice in the North Sea and Baltic Region” and in 2007, the City of Helsinki, Finland was declared a winner, as the project Viikii met the defined standards and also met the criteria of showing the most potential for mainstreaming [41].

Whilst the internal governing strategies of information sharing, project cooperation and benchmarking and recognition aids the TMN in achieving efficiency gains in transboundary water governance by bridging the governance gaps, there are also challenges in these self governing modes. Whilst the approach of benchmarking and recognition may be more appealing through the lure of a prize, it can be difficult to implement in practice because there are no sanctions for lack of participation and the UBC cannot force members to participate. In the aforementioned “Best sustainable city development practices in the North Sea and Baltic Region” competition, there were only eight nominations and three short listed cities. Further, participation was limited to the most active cities in the network and as such, this strategy aimed to cement the core further and may have also served to distance the non-active cities that did not have the resources to meet the espoused standards. Whilst project cooperation can help in meeting these resources gaps, it also takes time and resources to apply for funding and as such, this strategy may also attract the most active municipalities. The least resource intensive self governing strategy is information sharing but there is less certainty as to how this shared information translates to action on the ground for ecosystem restoration of the transboundary water bodies.

6.2.2. External Governing Strategies

The success of these TMNs in the multilevel transboundary water governance also depends on external governing mechanisms deployed by these networks to influence external stakeholders such as governmental actors and non-governmental actors to influence the policy process and to obtain external funding for projects. The Cities Initiative and the Union of Baltic Cities employed similar strategies for external governing such as obtaining seats at the table for inputs into key governance instruments such as the Great Lakes Water Quality Agreement and the Helsinki Convention. Through participation in national and regional initiatives, these transnational networks seek to represent their interests nationally and regionally and to also engage member cities on the changing governance landscapes and inform them of available funding mechanisms. These TMNs also seek to influence the policy process through advocacy, raising awareness on key issues and lobbying and participating in the consultation process. For example, the Cities Initiative lobbied intensively, both in the US and Canada for the banning and phasing out of micro-beads in the personal care products, through sending letters to the USEPA and Environment Canada detailing the threat of microbeads to the Great Lakes and St. Lawrence River ecosystem and encouraging legislative action. The US congress passed the Microbead-Free Waters Act in 2015 and Environment Canada is developing proposed regulations under the Canadian Environmental Protection Act (CEPA) of 1999 to prohibit the use of microbeads in selected personal care products [39]. The UBC, through its role as Horizontal Area Coordinator in the EUSBSR can influence the governance process by bridging capacity, information and funding governance gaps.

6.3. Enhancing Policy Transfer and Policy Learning

The Cities Initiative and the UBC impact transboundary water governance through the bridging of water governance gaps by enhancing policy transfer and policy learning. According to Dolowitz and Marsh [53] (p. 5) policy transfer can be defined as “the process by which knowledge about policies, administrative arrangements, institutions and ideas in one political system (past or present) is used in the development of policies, administrative arrangements, institutions and ideas in another political system” and represents a helpful concept for improving local policy innovation. As such, through policy learning TMNs through lessons learnt from other cities, through policy experiences and even policy failures, improve local policy innovation. Through participation in both the Cities Initiative and the UBC, local municipalities obtain information on stressors to the transboundary water ecosystem, and this leads to updating of their own information and new knowledge which can lead to adoption of best practices. This increased information and knowledge can lead to implementation of new local policies, such as new best management practices for nutrient control from farmlands, leading to policy change for ecosystem restoration. This can help transnational municipal networks to cope with current and future challenges to transboundary water governance, as there will be increased learning leading to adaptive policies subject to regular monitoring and evaluation by networked cities. This shared information and responsibility across the local level can greatly help in the dissemination and implementation of new transboundary water policies.

7. Conclusions

This paper has set out to investigate the role of transnational municipal networks in transboundary water governance through examining the case studies of the Cities Initiative and the Union of Baltic Cities and their role in bridging governance gaps for governance of the North American Great Lakes and the Baltic Sea. This study has found that TMN help in narrowing policy gaps between local and national governments (vertical level) and between cities themselves in cooperating to influence policies. There is much success in bridging the capacity and information gaps, but more work to be done in bridging the funding gap in the North American Great Lakes Region and in bridging the policy gaps in the Baltic Sea Region. Overall, this study has shown the potential of transnational

municipal networks to contribute to transboundary water governance through internal governing mechanisms such as information sharing, project cooperation and benchmarking and through external governing mechanisms through influencing and advocacy. There is potential for the Cities Initiative to benchmark from the best practices methodology employed by the UBC to further bridge the information governance gap and to collaborate more closely to stimulate funding mechanisms such as the EU that the UBC taps into for additional funding. This study has moved the discourse from whether to decentralize for more effective transboundary water governance to looking for ways to further improve the capacity of transnational municipal networks for more effective transboundary water governance. It has also highlighted the need for more research on the impact of TMN on individual member cities.

Acknowledgments: The author would like to thank Marko Joas for his guidance and support throughout this work. The author would also like to thank all the team members of the BaltReg project. The author would like to acknowledge funding support from the BaltReg Project, funded by the Åbo Akademi University and the Academy of Finland (decision 2015 nr: 290331).

Author Contributions: This paper was the sole work of the author. The author acknowledges editing help from Marko Joas.

Conflicts of Interest: The author declares no conflict of interest. The founding sponsors had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, and in the decision to publish the results.

References

1. The Great Lakes Water Quality Agreement. Protocol 2012 (Further Updates of the 1972 Version). Available online: <https://www.epa.gov/glwqa> (accessed on 9 January 2017).
2. Baltic Marine Environment Protection Commission (HELCOM). *Convention on the Protection of the Marine Environment Baltic Sea Area*; HELCOM: Helsinki, Finland, 1974.
3. Organisation for Economic Co-Operation and Development (OECD). *Water Governance in OECD Countries: A Multi-Level Approach, OECD Studies on Water*; OECD Publishing: Paris, France, 2011.
4. Hooghe, L. *Cohesion Policy and European Integration: Building Multi-Level Governance*; Oxford University Press: Oxford, UK, 1996.
5. Piattoni, S. Multi-level governance: A historical and conceptual analysis. *Eur. Integr.* **2009**, *31*, 163–180. [CrossRef]
6. Hooghe, L.; Marks, G. Types of multi-level governance. *Eur. Integr. Online Pap. (EIoP)* **2001**, *5*, 17–31.
7. United Nations (UN). *Water: A Shared Responsibility*; World Water Assessment Programme: Colombella, Italy, 2002.
8. Bakker, K. *Privatizing Water: Governance Failure and the World's Urban Water Crisis*; Cornell University Press: New York, NY, USA, 2010.
9. Rogers, P.; Hall, A. *Effective Water Governance*; Global Water Partnership: Stockholm, Sweden, 2003; Volume 7.
10. Nye, J.; Keohane, R. Transnational relations and world politics: An introduction. *Int. Organ.* **1971**, *25*, 329–349. [CrossRef]
11. Risse-Kappen, T. Bringing transnational relations back. In *Non-State Actors, Domestic Structures and International Institutions*; Cambridge University Press: Cambridge, UK, 1995; Volume 42.
12. Betsill, M.; Corell, E. *NGO Diplomacy: The Influence of Nongovernmental Organizations in International Environmental Negotiations*; MIT Press: Boston, MA, USA, 2008.
13. Schiller, N.G.; Basch, L.; Blanc-Szanton, C. Towards a definition of transnationalism. *Ann. N. Y. Acad. Sci.* **1992**, *645*, 9–14. [CrossRef]
14. Haas, P.M. Introduction: Epistemic communities and international policy coordination. *Int. Organ.* **1992**, *46*, 1–35. [CrossRef]
15. Risse, T. Global governance and communicative action. *Gov. Oppos.* **2004**, *39*, 288–313. [CrossRef]
16. Betsill, M.; Bulkeley, H. Looking back and thinking ahead: A decade of cities and climate change research. *Local Environ.* **2007**, *12*, 447–456. [CrossRef]
17. Fink, A. Under what conditions may social contracts arise? Evidence from the Hanseatic League. *Const. Political Econ.* **2011**, *22*, 173–190. [CrossRef]

18. 7th Strategy Forum of the EU Strategy for the Baltic Sea Region. Available online: <http://www.strategyforum2016.eu> (accessed on 9 January 2017).
19. Commission of the European Communities (CEC). *Green Paper: Towards a New Culture for Urban Mobility*; Office for Official Publications of the European Communities: Luxembourg, 2007.
20. Bache, I. Europeanization and multi-level governance: EU cohesion policy and pre-accession aid in Southeast Europe. *Southeast Eur. Black Sea Stud.* **2010**, *10*, 1–12. [CrossRef]
21. Rosamond, B. New theories of European integration. In *European Union Politics*; Cini, M., Ed.; Oxford University Press: Oxford, UK, 2007.
22. Ladrech, R. The Europeanization of interest groups and political parties. In *The Member States of the European Union*; Bulmer, S., Lequesne, C., Eds.; Oxford University Press: Oxford, UK, 2005.
23. Eurocities. About EUROCITIES. Available online: http://www.eurocities.eu/eurocities/about_us (accessed on 22 November 2016).
24. Westerhoff, L. Planned adaptation measures in industrialized countries a comparison of select countries within and outside the EU. In *Developing Adaptation Policy and Practice in Europe: Multi-Level Governance of Climate Change*; Keskitalo, E., Carina, H., Eds.; Springer: Dordrecht, The Netherlands, 2010; pp. 271–332.
25. United Nations Environment Programme (UNEP). UNEP Unveils the Climate Neutral Network to Catalyze a Transition to a Low Carbon World. 2008. Available Online: <http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=528&ArticleID=5750&l=en> (accessed on 22 November 2016).
26. Osofsky, H.; Levit, J. The scale of networks? Local climate change coalitions. *Chic. J. Int. Law* **2008**, *8*, 409–436.
27. Jetoo, S.; Thorn, A.; Friedman, K.; Gosman, S.; Krantzberg, G. Governance and geopolitics as drivers of change in the Great Lakes—St. Lawrence basin. *J. Gt. Lakes Res.* **2015**, *41*, 108–118. [CrossRef]
28. Renn, O.; Klinke, A.; van Asselt, M. Coping with complexity, uncertainty and ambiguity in risk governance: A synthesis. *Ambio* **2011**, *40*, 231–246. [CrossRef] [PubMed]
29. George, A.L.; Bennett, A. *Case Studies and Theory Development in the Social Sciences*; MIT Press: Boston, MA, USA, 2005.
30. Botts, L.; Krsushelnicki, B. *The Great Lakes: An Environmental Atlas and Resource Book*; Government of Canada and United States Environmental Protection Agency: Ottawa, ON, Canada; Washington, DC, USA, 1995.
31. Grover, V.I.; Krantzberg, G. Great Lakes—great responsibilities: History of and lessons in participatory governance. In *Great Lakes: Lessons in Participatory Governance*; CRC Press: Boca Raton, FL, USA, 2012; pp. 13–43.
32. Manninen, C.; Gauthier, R. *Living with the Lakes: Understanding and Adapting to Great Lakes Water Level Changes*; U.S. Army Corps of Engineers and Great Lakes Commission: Ann Arbor, MI, USA, 1999.
33. Hildebrand, L.; Pebbles, V.; Fraser, D. Cooperative ecosystem management across the Canada–US border: Approaches and experiences of transboundary programs in the Gulf of Maine, Great Lakes and Georgia Basin/Puget Sound. *Ocean Coast. Manag.* **2002**, *45*, 421–457. [CrossRef]
34. Encyclopedia Britannica. Baltic Sea. 2007. Available online: <https://global.britannica.com/place/Baltic-Sea> (accessed on 12 November 2016).
35. Eakins, B.; Sharman, G. *Volumes of the World's Oceans from ETOPO1*; NOAA National Geophysical Data Center: Boulder, CO, USA, 2010.
36. Baltic Marine Environment Protection Commission (HELCOM). *Ecosystem Health of the Baltic Sea 2003–2007: HELCOM Initial Holistic Assessment*; Baltic Sea Environment Proceedings No. 122; Helsinki Commission: Helsinki, Finland, 2010.
37. Gänzle, S. Introduction: Transnational governance and policy-making in the Baltic Sea region. *J. Balt. Stud.* **2011**, *42*, 1–7. [CrossRef]
38. Kern, K.; Löffelsend, T. Sustainable development in the Baltic Sea Region. Governance beyond the nation state. *Local Environ.* **2004**, *9*, 451–467. [CrossRef]
39. The Great Lakes and St. Lawrence Cities Initiative. About the Great Lakes and St. Lawrence Cities Initiative. Available online: <http://glslcities.org/about-the-great-lakes-and-st-lawrence-cities-initiative/> (accessed on 20 November 2016).
40. Kern, K.; Löffelsend, T. Governance beyond the nation state: Transnationalization and Europeanization of the Baltic Sea Region. In *Governing a Common Sea: Environmental Policies in the Baltic Sea Region*; Routledge: Abingdon, UK, 2008; pp. 115–141.

41. The Union of Baltic Cities. The Union of Baltic Cities Website. Available online: <http://www.ubc.net> (accessed on 19 November 2016).
42. Great Lakes and St. Lawrence Cities Initiative (GLSCI). Great Lakes and St. Lawrence Cities Initiative Consolidated Financial Statements. 2008. Available online: <http://glslcities.org/wp-content/uploads/2015/05/2007-2008-Annual-Report-EN.pdf> (accessed on 6 January 2017).
43. University of British Columbia (UBC). UBC Financial Document. 2008. Available online: http://www.ubc.net/sites/default/files/financial_documents_0.pdf (accessed on 22 November 2016).
44. University of British Columbia (UBC). Reports and Action Plans of the UBC Commission. 2009. Available online: http://www.ubc.net/sites/default/files/reports_and_action_plans_of_ubc_commissions.pdf (accessed on 22 November 2016).
45. Union of Baltic Cities. Stairway towards Sustainable Cities. Available online: <http://www.ubc.net/cities> (accessed on 21 November 2016).
46. Great Lakes Protection Act. 2015. Available online: <https://www.ontario.ca/laws/statute/15g24> (accessed on 2 December 2016).
47. City of Toronto. Ontario and Great Lakes Municipalities Sign Pact. News Release. 2008. Available online: <https://news.ontario.ca/ene/en/2008/07/ontario-and-great-lakes-municipalities-sign-pact.html> (accessed on 28 November 2016).
48. Canada Ministry of Environment and Climate Change. Canada-Ontario Agreement (COA) Respecting the Great Lakes Basin Ecosystem. Available online: <https://www.ontario.ca/page/canada-ontario-agreement-coa-respecting-great-lakes-basin-ecosystem> (accessed on 4 December 2016).
49. Kern, K.; Bulkeley, H. Cities, Europeanization and multi-level governance: Governing climate change through transnational municipal networks. *JCMS J. Common Mark. Stud.* **2009**, *47*, 309–332. [[CrossRef](#)]
50. ATKearney. Global Cities 2016. Available online: <https://www.atkearney.com/documents/10192/8178456/Global+Cities+2016.pdf/8139cd44-c760--4a93-ad7d-11c5d347451a> (accessed on 28 November 2016).
51. Triantafyllou, P. Governing the formation and mobilization of governance networks. In *Theories of Democratic Network Governance*; Palgrave Macmillan: London, UK, 2007; pp. 183–198.
52. Joas, M.; Kern, K.; Sandberg, S. Actors and arenas in hybrid networks: Implications for environmental policymaking in the Baltic Sea region. *Ambio* **2007**, *36*, 237–242. [[CrossRef](#)]
53. Dolowitz, D.; Marsh, D. Learning from abroad: The role of policy transfer in contemporary policy-making. *Governance* **2000**, *13*, 5–24. [[CrossRef](#)]



© 2017 by the author; licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC-BY) license (<http://creativecommons.org/licenses/by/4.0/>).