

RESEARCH ARTICLE

# The Politics of Lake Governance: Sampaloc Lake, Pandin Lake, and Tadalac Lake of the Laguna de Bay Region, Philippines

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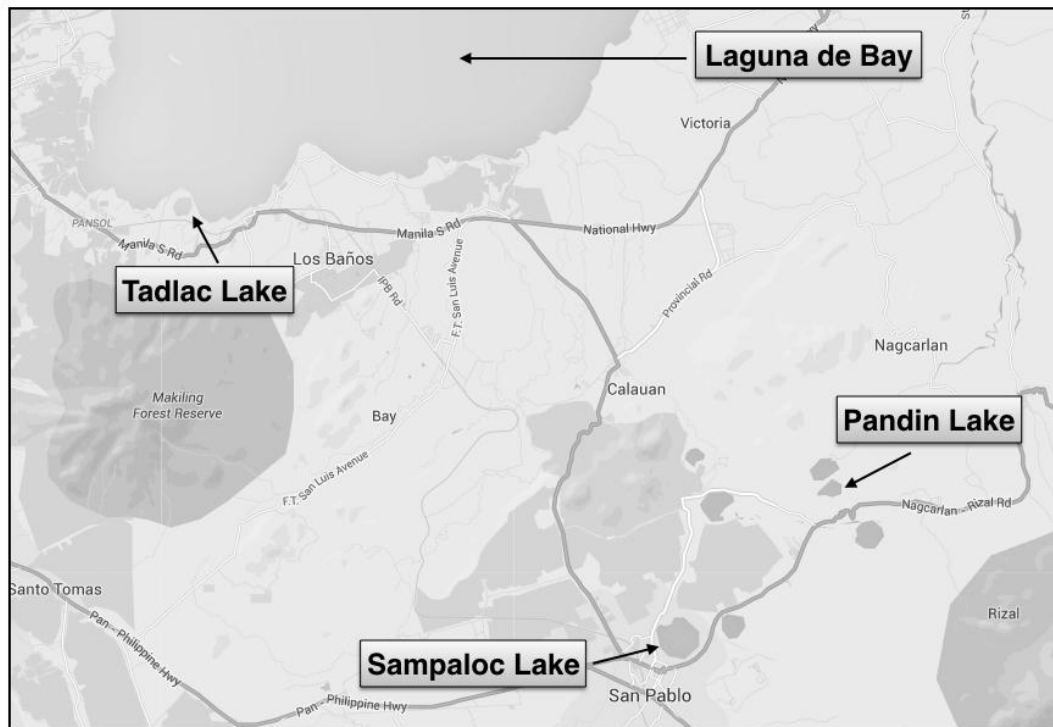
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**Abstract** With the scarcity of scholarly works on the area of governance on lakes in the Philippines, particularly on small lakes, and the recent notable development on the three small lakes in the Laguna de Bay region, this article examines the faces of governance in Sampaloc Lake, Pandin Lake, and Tadalac Lake. Specifically, it explores the administrative practices and challenges in the formulation of the Master Development Plan (MDP) for each lake. The article contends that the governance of the three lakes is collaborative but centralized, as the community stakeholders are given platform for involvement and actively participates in the initiative, yet the institutional actors make the decisions on the MDP's timeline, funding, and path forward. It further contends that the move to have an MDP only came about after some successes were achieved by the community stakeholders in each lake, and the Plan's formulation was steered by the pursuit of ecotourism, which was in turn underpinned by: the determined efforts of the local government unit in Sampaloc Lake, the success of the ecotourism enterprise in Pandin Lake, and the change of leadership in the administrative agency in Tadalac Lake.

**Keywords** Governance, Philippines, Development Plan, Sampaloc Lake, Pandin Lake and Tadalac Lake

Sampaloc Lake, Pandin Lake, and Tadalac Lake are small freshwater lakes that lie within the watershed system of Laguna de Bay, the country's largest lake (see Figure 1). The three lakes are components of the eight crater lakes of the Laguna de Bay region under the administration of the Laguna Lake Development Authority (LLDA). Sampaloc Lake and Pandin Lake are part of the seven lakes of San Pablo City, while Tadalac Lake is located in Los Baños, Laguna. The seven crater lakes are Sampaloc Lake, Bunot Lake, Calibato Lake, Mohicap Lake, Palakpakin Lake, Pandin Lake, and Yambo Lake. In terms of development, the three

are considered the leading lakes among the eight small lakes of the Laguna de Bay region, as they are deemed beacon for ecotourism and models for developing small lakes in the country. The development in the three lakes is evident in long process of instituting and completing a Master Development Plan (MDP), as the other small lakes (i.e., Bunot Lake, Calibato Lake, Mohicap Lake, Palakpakin Lake, and Yambo Lake) in the Laguna de Bay region and many other lakes in the country are still aspiring to have one. The MDP is fundamental for the effective management of a lake, as it serves as the framework for programs and precipitates subsequent



*Figure 1:* Sampaloc Lake, Pandin Lake, Tadlac Lake, and Laguna de Bay (Google, n. d.).

initiatives to the water resource. Since an MDP is a basic enabler to a lake's development, the move to have one offers a case for delineating the quality of governance practices in the three lakes; specifically, the manner and means Sampaloc Lake, Pandin Lake, and Tadlac Lake overcame the odds and formulated an MDP after decades of administrative neglect and poor regulation. Thus, enduring lengthy process of coming up with an MDP is illustrative of a "positive" governance for a small lake as well as the face of governance of each lake.

In the Philippines, much has been written about governance in literature, but little on its application and operation in water governance, and a lot less in lake governance, especially small lake governance (see discussion in the next section; for water governance see Arndt & Osman, 2006; Biwas & Tortajada, 2010; Tortajada, 2010; United Nations Development Programme-Water Governance Facility [UNDP-WGF], 2015; for lake governance see International Lake Environment Committee [ILEC], 2005; Downing, 2010; Brillo, 2015a). Under this context, the article

examines the intricacies of the governance of the three leading small lakes in the Laguna de Bay region; particularly, by assessing the governance specifics and challenges in the formulation of the MDP of Sampaloc Lake, Pandin Lake, and Tadlac Lake. Overall, the article argues that the governance of the three lakes is collaborative but centralized, while the community stakeholders were heavily involved on the ground, the institutional actors exclusively determine the timing of the crafting of the MDP, its funding, and approval. It further argues that, on one hand, the serious move to have an MDP only came about upon attaining some successes in the three lakes—the success in removing some illegal settlements/establishments and illegal fish pens/cages in Sampaloc Lake; the success in maintaining the pristine condition of the lake and limiting the entry of fish farms in Pandin Lake; and the success in completely eradicating commercial fish farming in Tadlac Lake. On the other hand, the formulation of the MDP was driven by the pursuit of ecotourism in the three lakes under varying circumstances—the determination of the

local government in Sampaloc Lake, the success of community stakeholders in Pandin Lake, and the leadership change in the administrative agency in Tadalac Lake. The article proceeds to discuss the following: firstly, a literature review on lake studies and the importance of studying governance and small lakes in the country; secondly, the situation in Sampaloc Lake, Pandin Lake, and Tadalac Lake; thirdly, the administration of the three small lakes; fourthly, the formulation of the MDP on each lake; and lastly, the conclusion.

### **Studying Governance and Small Lake in the Philippines**

The literature is replete with works heralding the importance of lakes to the natural world and mankind. Lakes are critical to natural processes, such as climate mediation and nutrient cycling, and to biodiversity, particularly in maintaining ecosystems. Lakes are essential to humans, as they contain over 90% of the liquid freshwater on the earth's surface, and over the years, have provided their rudimentary needs from drinking water, source of food, and means for transportation (ILEC, 2007; Nakamura & Rast, 2011, 2012). In a modern society, lakes have been used for many purposes, such as aquaculture, recreational activities, domestic/industrial water supply, agricultural irrigation, flood control, and hydroelectric power. However, human activities in and around lakes have contributed to the degradation of the water resource over the years. Contemporarily, many lakes suffer from an array of problems, such as eutrophication, acidification, toxic contamination, water-level changes, salinization, siltation, overfishing, and exotic species/weed infestation (World Lake Vision Committee, 2003; ILEC, 2005). A global-scaled study conducted by the Global Environment Facility-Lake Basin Management Initiative's (GEF-LBMI) of 28 major lakes around the world from 2003 to 2005 has concluded that the condition of many lakes is not improving (ILEC, 2007; World Lake Conference, 2009, 2011).

The situation in the Philippines mirrors the global condition, as many lakes in the country are ecologically threatened. The First National Congress on Philippine

Lakes held in 2003 and the Second National Congress on Philippine Lakes held in 2011 have conceded that many lakes in the country remain at risk of ecological decline due to indiscriminate utilization and growing demands of development (Aralar et al., 2005; Fernandez, 2011; Aralar et al., 2013; Global Nature Fund, 2014). Under the threatened-lake backdrop, lake studies have been incrementally increasing over the years. The overwhelming majority of studies, however, fall under the domain of the natural sciences and focused on the major lakes in the country (e.g., Pantastico & Baldia, 1981; Petersen & Carlos, 1984; Santiago, 1988; Manalili & Guerrero, 1995; Fellizar, 1995; Platon, 2001; Guerrero, 2001, 2005; Araullo, 2001; Mutia, 2001; Zafaralla, 2001; Siringan & Jaraula, 2005; Roa et al., 2005). A recent literature survey on lake studies in the Philippines revealed that 77% of the scholarly works are classified under the natural sciences and only 23% under the social sciences, and 80% of the scholarly works are studies on major lakes and only 8.7% on minor lakes (Brillo, 2015a). The natural science studies are mainly about limnology and aquaculture, and the major lake studies are mostly concentrated on the largest lakes in the country (e.g., Laguna de Bay, Taal Lake, Lanao Lake, and Buhi Lake; see also Guerrero, 2001, 2005). On the whole, the literature suggests that there is scarcity on social science studies, such as governance, development, socioeconomic and cultural studies, and small lake studies, or lakes with a surface area of 200 hectare or less (Brillo, 2015b). Correspondingly, this literature gap points to the need to produce more studies on governance and other fields in the social sciences as well as on small lakes.

#### *Why Study Governance?*

Studying governance is imperative since a lake's biological-environmental problems are intertwined and cannot be effectively dealt with in isolation of the administrative-development concerns. The indispensability of governance on lakes is underscored by the now near universal acknowledgement that many issues on water resources are rooted on failure of governance (United Nations Educational, Scientific and Cultural Organisation, 2012; World

Water Council, 2012; United Nations World Water Assessment Programme, 2015). Governance is deemed fundamental for better understanding and in offering sound solutions to the multitude of problems facing lakes today. As a concept, lake governance can be defined (in line with the well-circulated definition of water governance [see Rogers & Hall, 2003; Nowlan & Bakker, 2007; UNDP-WGF, 2015]) as the range of political, social, economic, and administrative systems that are in place for the utilization, allocation, management, and development of the lake.

A crucial element in governance is decision making, specifically, the ways decisions are made and actions taken to properly manage the water resource. In particular, it underscores the role of stakeholders (i.e., individuals, non-government organizations, and government agencies) and the various interests they represent in making decisions, and the existing administrative arrangements through which stakeholders operate and engage each other (see Simms & de Loë, 2010; Melnychuk, Murray, & de Loë, 2012). Governance is central to lake management and development; the former is defined as operational activities designed to regulate and impose conditions on its use to ensure the conservation of the water resource (Nowlan & Bakker, 2007), and the latter, is defined as economic growth and social progress in the lake and its locality that is sustainable and inclusive (i.e., providing benefits particularly to the poor inhabitants, such as expanding their livelihood opportunities; Global Monitoring Report, 2015).

Since the 1980s, the literature is abundant with works dealing with the concept and issues of governance in the social sciences but not in water governance, which was seriously discussed only in the 2000s (Biwas & Tortajada, 2010). Presently, water governance is hampered by the unavailability of usable, context-specific indicators, as the existing broad indicators for governance by the various international agencies have limited applicability to the water sector (Biwas & Tortajada, 2010; see also Arndt & Osman, 2006; Tortajada, 2010; UNDP-WGF, 2015). By implication, lake governance, a key subgroup of the broader water governance, also suffers from this infirmity. This problem is acute in lakes due to limited studies (ILEC, 2005; Downing, 2010)

and severe in small lakes since they are least studied or outright ignored (Downing, 2010; Brillo, 2015a). Thus, following water governance, the situation in lake governance implies the need for case studies that can delineate the quality of governance on individual lakes; specifically, identifying the enabling environment and critical factors of good governance practices.

The most recent approach in lake governance is the Integrated Lake Basin Management (ILBM), a method globally recommended by the ILEC. In principle, the ILBM approach is committed to sustainable management of lakes (and reservoirs) via incremental, continuous, and holistic improvement of basin governance (Nakamura & Rast, 2011). The ILBM focuses on the natural basin system of lakes, following the character of lentic-lotic water linkages (i.e., standing-moving water dynamics such as lake-river system or lake-spring system) and the distinct properties of lake basin system: (a) integrating nature (i.e., various forms of pollutants from diverse sources end up in lakes); (b) long retention time (i.e., pollutants stay on the lake for a long time due to its depth, water volume, and stagnant nature); and (c) complex response dynamics (i.e., as the “mixing bowl” of various pollutant inputs, changes and interventions in the lake are intertwined, non-linear and multifaceted; see ILEC, 2007; Nakamura & Rast, 2011). To improve lake governance, the ILBM approach suggests six interconnected areas of intervention based on the lessons learned from the GEF-LBMI project (i.e., the experiences from the management of 28 global lakes): (1) institutions (i.e., developing effective organizations), (2) policies (i.e., broad directions and specific rules), (3) participation (i.e., expanding the involvement of people), (4) technology (i.e., potential and limitations of technological interventions), (5) information (i.e., tradition and scientific knowledge), and (6) finance (i.e., sustainability of funds; see ILEC, 2007; Nakamura & Rast, 2012). Evidently, these areas of intervention need to be “filled in” by case studies to delineate context-specific governance practices and experiences.

Since the ILBM approach is derived from the experiences of and lessons from managing the largest lakes in the world, there is strong justification to conduct case studies on small lakes. The dynamics

of small-lake governance differ from large-lake governance; it is like comparing a jumbo jet with a propeller plane. For example, many large lakes are administered by the national government or a national agency (which usually allocates more resources), transboundary (covering multiple national or provincial domains), and used for extensive development projects (e.g., agricultural irrigation, household-industry water supply, hydroelectric power generation and large-scale commercial fish farming); while many small lakes are administered by local governments or local communities (which usually have less/inadequate resources), situated within a single or multiple municipalities and mainly utilized for small-scale aquaculture and recreational activities. These differences suggest that the nature, demands, and challenges of governance vary between small lakes and large lakes. Furthermore, each lake (large or small) is unique; the limnological properties, ecosystems, and governance of a lake cannot be fully understood based on information and generalization from other lakes (see Garn, Elder, & Robertson, 2003).

### *Why Study Small Lakes?*

Studying small lakes is imperative to broaden the knowledge base on lakes, in general, and on Philippine lakes, in particular. The concentration of studies on large lakes constitutes bias, as it projects an incomplete image of the water resource. Small lakes are abundant worldwide (Downing et al., 2006; Oertli, Cereghino, Hull, & Miracle, 2009), numerous in the country (Brillo, 2015a), and many are surrounded by impoverished communities; yet, little is known or written about them. This reality strongly calls for documenting and studying small lakes in the country. Broadly, small lakes are not prioritized since they are considered to have minimal economic value (Brillo, 2015b, 2015c, 2016) and deemed to have minimal contribution to ecosystem cycles and processes (Downing, 2010; see also Lehner & Doll, 2004; Oertli et al., 2009); these usually translate to little interest from administrative agencies, research institutions, and individual scholars.

Relative to large lakes, small lakes are inherently more fragile and vulnerable to ecological deterioration.

Their small physical size and water volume naturally corresponds to less absorptive capacity in counteracting pollutants, and hence, shorter timeline for ecological degradation (Brillo, 2015b, 2015c, 2016). Small lakes are also more susceptible to extinction than large lakes, as they inherently have lesser capacity against loss of water/drying out and infilling by sediments (Choiński & Ptak, 2009; Lane, 2015). Moreover, since the 2000s, a number of limnological-environmental studies have advocated for the need to reassess the ecological value of small lakes and to correct the century-old misconception that large lakes are solely the most important (Lehner & Doll, 2004; Downing et al., 2006). For instance, recent inventories have shown that small lakes, in aggregate, dominate the size distribution of lakes in the world, which imply that cumulatively they have a disproportionate role in global processes and cycles, as well as in the maintenance of regional biodiversity and stability (Hanson, Carpenter, Cardille, Coe, & Winslow, 2007). In addition, small lakes are substantially more biologically active than big lakes “pound for pound” (Downing, 2010), as they have high hydrologic and nutrient processing rates (Smith, Renwick, Bartley, & Buddemeier, 2002), more intense carbon processing rate (Kelly et al., 2001), and a lot more species (of virtually all taxa) per unit area (Scheffer et al., 2006) compared to big lakes. They are also an integral component of other natural system, whether ground water, spring, river, or big lake system. Altogether, these attributes and information provide a strong case for studying small lakes.

### **The Situation in Sampaloc Lake, Pandin Lake, Tadalac Lake**

Sampaloc Lake is situated within the city proper of San Pablo, covers five Barangays— IV-A, IV-D, V-A, Concepcion, and San Lucas I, and is accessible via Dagatan Boulevard, a circumferential road running along its perimeter. With a surface area of 104 hectares, the Sampaloc Lake is the largest among the seven crater lakes (LLDA, 2005a, 2008) and is the traditional promotional symbol of San Pablo City. Pandin Lake is located in Barangay Santo Angel, San Pablo City, which is about eight kilometers from the city proper,

and is accessible via a walking trail from San Pablo-Rizal Road. Pandin Lake has a surface area of 24 hectares (LLDA, 2005b, 2008) is considered the twin lake of Yambo Lake, as only a narrow ridge separates the two lakes. Tadalac Lake is found in Barangay Tadalac, Los Baños, Laguna and is accessible via Barangay Tadalac Road, a lateral road running from the South to the Northeast side of the lake. Tadalac Lake has a surface area of 24.7 hectares (LLDA, 2007), and is separated from the seven crater lakes (being about 30 kilometers away from San Pablo City) and adjacent to Laguna de Bay (being situated on its southern tip, with a mere 50 meter wide strip of land between them).

Sampaloc Lake, Pandin Lake, and Tadalac Lake are small freshwater lakes and are components of the eight crater lakes of the Laguna de Bay region. The three lakes are oval-shaped and considered a maar of the Laguna Volcanic Field (Philippine Institute of Volcanology and Seismology, 2015). The lakes are believed to be volcanic in origin, formed through a phreatic eruption when contact between shallow lava and groundwater caused an explosion that resulted in a crater-like depression (LLDA, 2008). Sampaloc Lake and Pandin Lake are catchment areas of Mount San Cristobal (a feature shared with all the seven crater lakes), and Tadalac Lake is a watershed area of Mount Makiling. Their water sources are rainfall, surface runoff, and surrounding natural springs (except Tadalac Lake which has no natural springs), and they discharge through seepage, evaporation, and a water outlet (Sabang Creek for Sampaloc Lake, Prinsa Creek for Pandin Lake, while Tadalac Lake has no water outlet).

Over the years, Sampaloc Lake, Pandin Lake, and Tadalac Lake have been utilized for recreation and aquaculture. Prior to the advent of commercial fish farming, the three lakes are mainly centers for recreational activities, such as swimming, running/trekking, water sports, and picnics. The three lakes also attract visitors because of their natural beauty. However, the three lakes lack organized tourism, as there were no concrete tourism development plans, strategies, and actions back then (e.g., Jose, 2002; LLDA, 2005a, 2005b; Borja, 2008). Aquaculture, particularly commercial tilapia fish farming, came into the three lakes in the early 1980s, as tilapia pens and cages were put up in the lakes. In the Laguna de Bay

region, tilapia pen/cage farming was first introduced in Bunot Lake in 1976 after the LLDA's successful introduction in Laguna de Bay in 1974 (Radan, 1977; Ministry of Natural Resources, 1982). In the late 1980s, fish pens and cages have become an integral feature of the lakes, as commercial fish farming expanded moderately in Pandin Lake and extensively in Sampaloc Lake and Tadalac Lake.

The limited growth of fish farming in Pandin Lake is attributed to its water makeup being oligotrophic, which prolongs the culture period of fish stocks thus rendering fish farming more costly (LLDA, 2005b), and the vigilance of the local community organization—Samahang Mangingisda ng Lawa ng Pandin (SMLP) which ensured that the fish pens and cages abide by the 10% limit rule prescribed by the Philippine Fisheries Code. The excessive expansion of fish farming in Sampaloc Lake and Tadalac Lake is attributed primarily to the non-enforcement of regulations by the LLDA. This administrative dereliction was made worse by the tilapia boom in the 1980s which led to influx of investors in tilapia farming in the small lakes. By the 1990s, the number of fish pens and cages in Sampaloc Lake and Tadalac Lake had breached the 10% limit for aquaculture structures, covering a substantive area of the lake. This condition occurred despite the LLDA's order to reduce the fish pens/cages and a moratorium in the construction of structures in the lakes (e.g., in 1992 and 1997 see Borja, 2008). With this situation, Sampaloc Lake and Tadalac Lake suffered from problems associated with overcrowding of fish pens/cages, such as water pollution and exacerbated fish kills, while Pandin Lake was largely able to avoid them.

Attempts to address the issues in the three lakes started in the 2000s. In Sampaloc Lake, since the problem of water degradation and illegal settlements/establishments had become blatant, the community stakeholders—that is, non-governmental organizations (e.g., Save the Lakes Movement/Friends of the Seven Lakes Foundation, Inc ), religious groups, and civic organizations—bonded together and took actions to pressure (e.g., launching rallies—i.e., Yakap sa Lawa [Embrace the Lake] prayer rally—and utilizing media) the LLDA and the Local Government of San Pablo to clear the lake of illegal fish pens/cages and to demolish the illegal structures/establishments along

its banks. The community stakeholders' movement, as it has become a major local issue, resulted in the administrative agencies taking direct action to reduce the number of pens/cages and to relocate some illegal settlements/establishments. However, after the initial success in the early 2000s, the efforts fizzled out mainly due to lack of funds for relocation and building settlements. At present, after more than a decade, the action is yet to be completed; a number of illegal fish pens and cages are still operating in the lake and a third of the lake shore is still occupied by illegal settlers and structures. In 2012, it was reported that 163 registered fish pens and cages operate in the lake (Provincial Government of Laguna, 2013).

In Pandin Lake, since the locals got exposed to the plight of Sampaloc Lake and the movement to save it, the community stakeholders (specifically, SMLP and the Pundasyon ng Kalikasan) became more vigilant and determined in safeguarding the lake. In the absence of regulatory actions from the LLDA and the local government unit, the community stakeholders took the initiative by tightly guarding the entry and expansion of fish farms in the lake. The oligotrophic water of Pandin Lake, unfavorable to aquaculture, helped their efforts. Under these circumstances, the community stakeholders were able to limit the expansion of fish pens/cages and preserve the sound condition of the lake. It was reported that, in 2005, only 3% of Pandin Lake is occupied by aquaculture structures, and in 2012, only 14 fish pens and cages operate in the lake (LLDA, 2005b; Provincial Government of Laguna, 2013).

In Tadalac Lake, since the massive fish kill in 1999 was unprecedented in scale and monetary losses, the community stakeholders (specifically, FARMC, the Barangay unit, and Ugnayan-LB) recognized the need for change and appealed to the fish farm owners to defer their operations to give time for Tadalac Lake to recuperate. To follow through, the Barangay Council issued an order halting further construction of fish pens and cages in the lake, and the LLDA issued a board resolution (No. 140 series of 2000) prohibiting aquaculture operations in the lake for a period of two years and offered an alternative transfer site for fish pens/cages in the adjacent Laguna de Bay (LLDA, 2007; Borja, 2008). These moves were helped by

the realization on the part of the fish farm operators that continuing operation in the lake is risky with the poor water condition and threat of another massive fish kill. Eventually, these efforts paved the way for the complete eradication of commercial fish farms in Tadalac Lake, as operators voluntarily left the lake; thus, entirely freeing the lake of fish pens and cages at present (Barangay Tadalac, 2015).

### **The Administration of the Three Lakes**

The three small lakes are administratively managed by the LLDA. The authority of the LLDA comes from Republic Act (RA) 4850 or The Laguna Lake Development Authority Act of 1966 (as amended by Presidential Decree 813, October 1975), which is the main law governing Laguna de Bay and its watershed area. RA 4850 created and designated the LLDA as the main agency in administering the water bodies in the Laguna de Bay region. The Laguna de Bay region includes the provinces of Rizal and Laguna; the cities of San Pablo, Pasay, Caloocan, Quezon, Manila, and Tagaytay; the towns of Tanauan, Sto. Tomas and Malvar in Batangas; the towns of Silang and Carmona in Cavite; the town of Lucban in Quezon; and the cities of Marikina, Pasig, Taguig, Muntinlupa, and Pateros in Metro Manila. In particular, the LLDA's responsibility is to promote the development of the Laguna de Bay region while providing for environmental management and control; preservation of the quality of life and ecological systems; and the prevention of undue ecological disturbance, deterioration, and pollution (LLDA, 2005a). This mandate was strengthened by Executive Order No. 927 issued by then President F. Marcos in December 1983, which gave the agency the exclusive rights over the water bodies in the Laguna de Bay region.

The other administrative authority of the three lakes are the local government units, specifically, the Local Government of San Pablo for Sampaloc Lake and Pandin Lake, and the Local Government of Los Baños for Tadalac Lake. The mandate of the local government units emanates from RA 7160 or The Local Government Code of 1991, which gives it jurisdiction over the three lakes, being municipal bodies of water.

Since RA 4850 confers the administration of the small lakes to the LLDA and RA 7160 bestows the local government units the territorial dominion, the institutional arrangement demands cooperation and coordination between the two government agencies. In principle, the LLDA lays down the overall development framework and approves/rejects the plans/projects submitted to it by the local government units and the community stakeholders; while the local government units execute programs/initiatives and legislate ordinances in support of the LLDA's development agenda. On the implementation of regulations, the LLDA usually initiates and the local government enforces, as it controls the local police and the Barangay officials.

On the ground, the LLDA and the local government units tap the Fisheries and Aquatic Resources Management Council (FARMC) in administering the three lakes. FARMC is the principal organization directed by RA 8550 or the Philippine Fisheries Code of 1998 to assist government agencies in the management, development, and conservation of the water resources in the country. In the Laguna de Bay region, FARMC was devolved from the Department of Agriculture to the LLDA in recognition of its exclusive jurisdiction via RA 4850. FARMCs are established from the national level to municipalities and are mandated to be multi-representative in its composition; they are formed mostly by fisherfolk organizations and non-governmental organizations/community stakeholders with the assistance of the government agencies. In doing its tasks, FARMC is usually partnered with the barangay unit of the locality, which is composed of elected councilors and headed by a Chairman. Under RA 7160, a barangay unit is the smallest and lowest administrative-legislative unit under the local government unit in the country. Furthermore, FARMC and the barangay unit are usually assisted by non-governmental organizations and community stakeholders in proposing initiatives and implementing regulations, while the Barangay Tanod (barangay watchmen) and Bantay Lawa (lake watchmen) help in securing the lake. The Barangay Tanod is a volunteer organization funded by the municipal/city government; while the Bantay Lawa is a volunteer organization funded by the provincial

government.

On tourism related development, the administration of the three lakes is guided by RA 9593 or Tourism Act of 2009. The law recognizes tourism as a key engine of the national economy, particularly in promoting socio-economic development. RA 9593 encourages ecotourism development among the many lakes in the country. Sampaloc Lake, Pandin Lake, and Tadalac Lake have long been identified as ideal tourist destinations by the community stakeholders and have been earmarked by the administrative agencies for ecotourism development. Ecotourism is seen as a way to augment livelihood opportunities and improve the economic stature of the locality, as well as to preserve the water resource (LLDA, 2014, 2015). Moreover, ecotourism has recently become more attractive in the light of inherent problems in small lakes associated with commercial fish farming, such as recurring fish kills and water pollution.

### **The Formulation of the Master Development Plan**

The administrative agencies and community stakeholders have long acknowledged the need for an MDP for small lakes of the Laguna de Bay region (e.g., LLDA, 2008, 2014; Borja, 2008; City Government of San Pablo, 2015). Since the early 2000s, the move to formulate an MDP has been a regular agenda in the many forums on the eight crater lakes. The lack of an MDP is considered the most pressing issue in Sampaloc Lake, Pandin Lake, and Tadalac Lake, as it has direct bearing on the development of the three lakes. An MDP is basic for the administration of a lake, as it serves as the overall framework for the management and conservation of the water resource. In particular, it furnishes direction to programs/projects and precipitates subsequent initiatives in the lake, and ensures that they are systematic, coherent, and effective. An MDP is also critical since it is the principal instrument that addresses the perennial issue on the utilization of the three small lakes—the partitioning of the lake and designating the specific areas (including the extent and arrangement)



for aquaculture and ecotourism. In addition, an MDP facilitates the regulation of fish farms (particularly, to avoid overcrowding of fish pens and cages) and establishment of ecotourism in the lakes.

Overall, the serious move to have an MDP in Sampaloc Lake, Pandin Lake, and Tadalac Lake was precipitated by the pursuit of ecotourism of the different stakeholders on each lake. This move came about after some successes were achieved by the community stakeholders in overcoming obstacles and improving the lake, paving the way for them to seriously consider the ecotourism development alternative. Ecotourism was deemed as the most viable option in providing decent livelihood to the many poor residents of the lakes and in ensuring the conservation of the natural resource. A promising proposition since the three lakes are, on one hand, ecologically threatened, and on the other hand, have high potential for tourism.

In Sampaloc Lake, the success in removing some of the illegal settlements/establishments, especially in the entry side of the lake, and in reducing fish pens and cages in the 2000s opened the idea of developing the water resource into a full-fledge ecotourism hub. Moving towards ecotourism implies organizing the lake and partitioning its utilization between the aquaculture and tourism zones, which, in turn, necessitates a master plan. The administrative agencies have long identified the need for an MDP for Sampaloc Lake, yet no serious actions were taken to have one (e.g., City of San Pablo Tourism Council, 2008). Under this context, the various key community stakeholders took the initiative and formulated their MDP for the lake. Among the MDPs developed, three proposals were formally submitted to the LLDA, namely: (1) the City Tourism Council (TC) / the City Environment and Natural Resource Office (ENRO) proposal, (2) the FARMC proposal, and (3) the Seven Crater Lakes and Watershed Management Council (SCLWMC) proposal.

The three MDPs shared the basic principle in developing the lake; fish farming would be maintained, ecotourism would be promoted, and the lake would be rehabilitated. In particular, the proposals adhere to the 10% limit rule on fish pens and cages, the removal of illegal structures and relocation of informal settlers, and the imposition of the 50-meter navigation lane from the shore. However, the three MDPs differ on

one critical aspect—the extent of area for fish farming and ecotourism, and the arrangement of fish pens/cages. The TC-ENRO proposal calls for “the horseshoe zoning plan,” dividing the lake into two zones (the entrance side of the lake for tourism [about 1 km] and the far side for fish farming [about 2.7 km]) and arranging the fish pens/cages into a U-shaped two-layered belt formation. The FARMC proposal also calls for a horseshoe arrangement except that the fish pens/cages’ formation are extended to about 3 kilometers and area for tourism reduced to less than a kilometer. The SCLWMC proposal calls for “50-50 zoning plan,” partitioning the lake equally between tourism and fish farming, and arranging the fish pens/cages into a U-shaped three-four layered belt formation.

With these three proposals submitted, the only remaining action is a decision from the LLDA, either by selecting one from the three proposals or developing a compromise plan from the three proposals. However, the LLDA refused to make the final decision, citing that each proposal’s proponent as adamant on their respective positions and unyielding to a compromise. A key undercurrent is that ecotourism is being promoted in a lake where aquaculture is well entrenched (unlike in Pandin Lake where it is limited and Tadalac Lake where it has been completely removed). The LLDA passed the responsibility to the Local Government of San Pablo (to decide and come up with one MDP), which did not also take serious action, citing the same reason— difficulty in coming up with a compromise. Consequently, with the inaction of the administrative agencies, the quest to have an MDP for Sampaloc Lake remained unresolved for a decade.

A year after the 2013 elections, the move to develop ecotourism in Sampaloc Lake was revived with the new administration in San Pablo elevating tourism on the agenda of the local government. Sampaloc Lake was designated as the flagship of the local government’s tourism strategy, as well as the model for the tourism development of the other crater lakes. Consequently, the need to have a Tourism Master Development Plan for the city, and an MDP for Sampaloc Lake became a priority (City Government of San Pablo, 2015). The local government unit exerted the resources by providing the funds and experts, and led the way by setting the time table and convincing the community

stakeholders (especially moderating the distrust among the proponents of the three MDP proposals) to accept its drafted plan. After a series of deliberations and meetings in 2014, an MDP was formally submitted by the Local Government of San Pablo to the LLDA in 2015.

In Pandin Lake, the success in preventing the degradation and constraining the expansion of aquaculture in the 2000s made the lake ideal for ecotourism. Limited aquaculture meant less livelihood opportunities among lake residents, leading them to come up with an alternative— ecotourism. A group of mostly women residents thought of starting the Pandin Lake Tour project which is designed to create employment opportunities among the locals, especially the wives of fisherfolks. Since the residents lack know-how and experience in establishing and operating an ecotourism enterprise, they sought the assistance of Pundasyon ng Kalikasan, the local environmentalist group that had helped them before (in protecting the lake and in initiating training activities, such as gardening and soap making, intended to provide extra income to lake residents). In particular, Pundasyon ng Kalikasan advised the locals in organizing and managing an enterprise, in securing initial capitalization, and in promoting and launching the project in 2003. From the modest beginnings of offering a lake tour, a raft ride, and native foods, the Pandin Lake Tour project gradually transformed the lake into a major tourist destination in the San Pablo City with the continuous arrival of local and foreign tourists. In 2005, buoyed by the success of their project, the locals decided to formally establishing the SMLP to directly manage the ecotourism enterprise.

The success of the ecotourism enterprise in Pandin Lake gradually grew and in a decade's time surpassed Sampaloc Lake (i.e., the city's premier lake) in terms of tourist arrivals, as in 2012 Pandin Lake had 44% while Sampaloc recorded 9.64% only (City Government of San Pablo, 2015). By 2013, the ecotourism in Pandin Lake has been widely talked about in conventional and social media, bringing it to the attention of the national government. The publicization of the success in Pandin Lake, consequently, created pressure and compelled the LLDA to take *motu proprio* action to instigate the efforts to have an MDP for the lake. In

addition, Pandin Lake's minimal problem compared to the other lakes in the Laguna de Bay region, makes it the logical starting point for the LLDA to initiate the first MDP among the seven crater lakes. Through a Board Resolution No. 464 (2014), the LLDA set in motion the move to formulate an MDP for Pandin Lake which was deemed a pilot case for the seven crater lakes. This action was premised on the admission by the LLDA that the development in Pandin Lake is arbitrary over the years, where there are no plans, policies, or guidelines that are being followed (LLDA, 2014). The LLDA allocated funds and personnel, and conducted a series of consultation meetings and workshops with the community stakeholders (i.e., SMLP, FARMC, the Barangay unit, and private landowners). In 2015, the LLDA concluded the process with a completed MDP for Pandin Lake.

In Tadalac Lake, the unprecedented success of totally eradicating commercial fish farming paved the way for the community stakeholders to seriously consider ecotourism development in the lake. Having completely removed aquaculture, the Barangay Council, Ugnayan-LB, and FARMC conceptualized the transformation of the lake into a nature park, as a way to create livelihood opportunities without compromising the water resource. In 2000, the community stakeholders formally proposed the establishment of Tadalac Lake Nature Park to the LLDA and the Local Government of Los Baños. Initially, the LLDA was supportive, as the agency allotted a budget of Php1 million and organized workshops for the preparation in formulating the MDP needed for the transformation of the lake (Borja, 2008). However, with the shift in priority in LLDA brought about by leadership change in 2001 (i.e., the removal of President J. Estrada by Vice President G. Arroyo via EDSA 2 People Power revolt brought change in the LLDA, as the new President appointed a new General Manager), the move to formulate an MDP for Tadalac Lake was indefinitely shelved.

The move to revive the MDP for Tadalac Lake came about only after six years when another leadership change occurred in the administrative agency. In 2007, the change of leadership in the LLDA paved the way for the agency to take a second look at Tadalac Lake. The LLDA reconsidered the lobby of the community stakeholders to develop Tadalac Lake into a world

class ecotourism destination and to revive the move to formulate an MDP for the lake (LLDA, 2007). Consequently, the agency instigated and facilitated the crafting of the MDP by releasing the originally allocated funds, allocating manpower, and convening consultation meetings and workshops (LLDA, 2009). A year after reviving the move, the MDP for Tadalac Lake was completed, and after eight years, in 2015, the LLDA and the Local Government of Los Baños, together with the community stakeholders, officially launched the Tadalac Lake Nature Park (LLDA, 2015).

Presently, although having an MDP is perceived to accelerate long term development in the three lakes, they are in no way free of problems. Across all lakes, the most urgent problem connected to the MDPs is funding for its implementation; in particular, the finances needed to fully execute the MDPs and transform the lakes into full-fledged tourism hub. In all three lakes, the community stakeholders have complained it is difficult to generate the necessary capital to finance the key programs. The annual allocation of FARMC (from the LLDA) or the barangay unit (from the local government) is simply too small, while external donations do not come regularly. In Sampaloc Lake, the immediate concern is funding the unfinished resettlement-housing program, particularly the cost of removing the remaining illegal structures/establishments and relocating the informal settlers. In Pandin Lake, the pressing concern is investments in key projects, particularly the cost of building the essential facilities needed to scale up the ecotourism enterprise. In Tadalac Lake, the current concern is sourcing the capital needed to cover the cost of the infrastructure needed to launch the Tadalac Lake Nature Park. On the whole, the funding problems in the three lakes underscore the importance of institutionalizing sustainable funding mechanism and facilitating the fund generation.

## Conclusion

The move to have an MDP for Sampaloc Lake, Pandin Lake, and Tadalac Lake was long overdue; on average, it took more than a decade to complete the process. From the late 1980s to the late 1990s, the

problems associated with the expansion of commercial fish farming, such as water pollution and massive fish kills, have become evident in Sampaloc Lake and Tadalac Lake and have threatened Pandin Lake. Under this context, the serious move to have an MDP for the three lakes only came about after the community stakeholders, in addressing the problems and improving the condition of each lake, attained some successes. In Sampaloc Lake, it was the removal of some illegal settlements/establishments and the reduction of fish pens and cages in the lake. In Pandin Lake, it was the preservation of the lake's pristine condition and the limitation on commercial fish farming in the lake. In Tadalac Lake, it was the unexpected achievement of eradicating commercial fish farming in the lake. All in all, these initial successes propelled ecotourism in each lake, as the community stakeholders realized the potential and seriously considered its application in the lakes. Under this premise—in pursuit of ecotourism—the move to have an MDP for each lake came to fruition. In each lake, the formulation of the MDP was driven by distinct factors. In Sampaloc Lake, it was principally the resolve of the new administration of the local government. In Pandin Lake, it was mainly the widely publicized success of the ecotourism enterprise. In Tadalac Lake, it was primarily the change in LLDA leadership. In effect, these factors served as catalyst to overcome the inertia that have long been plagued the move to have an MDP for each lake.

In looking at the nitty-gritty of what transpired, the governance of the MDP's formulation process can be characterized as participatory but centralized. It is participatory since, in principle, the administrative agencies employ collaborative approach where the local stakeholders have the platform to be involved in discussions, and on the ground, they actively and consistently participated in developing the MDPs in each lake. It is centralized since, notwithstanding the active involvement/participation of the community stakeholders, the support of the administrative agencies is crucial to the outcome by controlling agenda setting/timing (decides when to tackle such a plan), funding (allocation and release of funds) and decision making (ultimately approves/rejects the plan). Overall, the experiences in the three lakes illustrate a key lesson in contemporary development of small lakes in the

country—the active and continued participation of the community stakeholders need to be supported by sustained commitment of the institutional actors, as to a large extent the progress in lake governance continues to be defined by the action/inaction of the administrative agencies. In ending, this article hopes to instigate more studies on lake governance to further delineate the specifics in sustainably developing small lakes; as they are numerous in the country (as well as worldwide) and many are surrounded by impoverished communities.

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