



# Local people's perceptions of Lake Basin water governance performance in Thailand



Peter Emmanuel Cookey\*, Rotchanatch Darnswasdi, Chatchai Ratanachai

Faculty of Environmental Management, Prince of Songkla University, P.O. Box 50, Kho Hong, Hat Yai, Songkhla, 90112, Thailand

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## ABSTRACT

Local people's perceptions on water governance performance were explored in the Songkhla Lake Basin, Thailand. The study was conducted through self-administered survey questionnaires, interviews, observations as well as review of relevant literature and archival records. The objective was to understand the perceptions of the local people regarding performance of the water governance of the Songkhla Lake Basin in order to support a wider research assessing the water governance performance of the Lake Basin. The local people perceived the governance performance as below average and highlighted some pertinent challenges such as institutional and agency fragmentation, weak coordination and integration as well as enforcement and compliance. They suggested that governance performance could be improved if these issues were resolved and if the local people were involved in the governance of the Lake Basin. The study concluded with recommendations to integrate local people's perceptions in governance and management decision-making as well as highlighting some issues that arose from the study like a single formal management and policy harmonization organization for the Basin and livelihood support for the local people to reduce environmental degradation.

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## 1. Introduction

### 1.1. The role of local people's perceptions in lake basin water governance

Assessment of local people's perceptions of lake basin water governance performance is a useful measurement barometer for citizen involvement and participation because across many developing countries, decision-making on day-to-day water use and management issues is in the responsibility of the local community (Trakolis, 2001; Debrot and Nagelkerken, 2000; Moench et al., 2003; UNDP, 2013). They possess substantive knowledge about the resource system and areas where they live and their local knowledge is often holistic and spatially specific and could be critical in local governance performance assessment (Carr, 2002). Local people are always the most important participants in participative water resource management because they offer key information related to local natural and socio-political systems

(Webler et al., 2003, Wondolleck and Yaffee, 2000, Sabatier et al., 2005; Jingling et al., 2010). However, their support is dependent on their perception of the effectiveness and quality of management and governance policies, institutions and processes (Pomeroy et al., 2004; Webb et al., 2004. Bennett and Dearden, 2014). Therefore, assessment of local people's perceptions on governance performance within their communities can be a strong tool to determine the efficacy of natural resources governance systems (Trung Ho et al., 2012). However, water governance performance assessments that explore local people's perceptions are under documented and rarely get due attention.

There have been more studies on local people and community perceptions on marine protected areas (Debrot and Nagelkerken, 2000; Peterlin et al., 2005; Tokotch et al., 2012; Vodouh  et al., 2010; Marin et al., 2009; Wallner et al., 2007; Dimitrakopoulos et al., 2010; Green, 2005; Tran, 2006; Tran et al., 2002); forestry and mangrove forest (Lund et al., 2010; Par  et al., 2010; Dhuh ain et al., 2009; Roy et al., 2013; Roy, 2014; Roy and Gow, 2015; Jones et al., 2015); fishers (Kincaid et al., 2014; Dimech et al., 2009; Stewart et al., 2014); national parks (Nasution and Zahrah, 2014; Trakolis, 2001; Jones et al., 2012) and resource degradation (Tenge et al., 2015), which is one of the few studies on a lake environment. None of these studies focussed on the local people's

\* Corresponding author.

E-mail addresses: [peter@earthwatchnigeria.org](mailto:peter@earthwatchnigeria.org), [cookeypeter@gmail.com](mailto:cookeypeter@gmail.com) (P.E. Cookey), [rotchanatch.d@psu.ac.th](mailto:rotchanatch.d@psu.ac.th) (R. Darnswasdi), [chatchai.ratanachai@gmail.com](mailto:chatchai.ratanachai@gmail.com) (C. Ratanachai).

perceptions on water governance performance. Therefore, this paper seeks to explore the local people's perceptions on the performance of the existing water governance systems of the Songkhla Lake Basin (SLB), Thailand. Local people in this paper refer to individuals who live and interact through various practices and in particular places, especially in small spatial unit (communities), has homogenous social structure and shared norms within the jurisdictions of a lake basin (Agrawal and Gibson, 1999; Broderick, 2005), while lake means lentic water and the term lake basin is used here to mean 'lake river basins' or more broadly 'lentic-lotic basins' (ILEC, 2005; World Bank, 2005; RCSE and ILEC, 2014). In other words, local people are those who live and work within the jurisdiction of the SLB and maintain close contact with the Basin, the Songkhla Lake and the other subsidiary lakes and more than 100 streams of all sizes that drain the Basin.

Perception refers to the personal understanding of the phenomena, causes and its effects, which influences necessary actions to be taken by the individual, group or community (Bagheri et al., 2008). Perception influences interactions with the resource systems, how they are managed and governed (Ormsby and Kaplin, 2005; Allendorf et al., 2006; Ramakrishnan, 2007; Vodouh  et al., 2010) as well as the people's attitude towards the use of the water resources in the lake basin (Rodriguez, 1995; Tran et al., 2002; Dungumaro and Madulu, 2003; White, 1966; Sewell, 1974; Trakolis, 2001). The local people's continued interactions with the resource system can be seen as some form of 'expertise' grounded in experiential knowledge (Davis and Wagner, 2003), which can be related to context or location. This type of knowledge and insight are strongly entwined with the day-to-day activities of the people (Edelenbos et al., 2011) and can complement scientists with skills, knowledge and information that may be lacking (McCall, 2003; Berkes et al., 2000) while also providing important ecological data in areas where studies have not been conducted (Aswani and Hamilton, 2004; Doswald et al., 2007; Elbroch et al., 2011). Therefore, evaluating the local people's perspectives on water governance performance becomes important with regards to their needs, preferences or willingness to support government efforts. It also helps decision-makers and managers identify management and governance needs, choose between options, and pinpoint strategies for successful resource management (Debrot and Nagelkerken, 2000; Gallego-Ayala and Juizo, 2012; Pimbert and Pretty, 1997; Wallner et al., 2007).

It is, therefore, expedient to explore the way the local people of the Songkhla Lake Basin (SLB) perceive the governance performance of the resource system, since they are the closest to the resource in proximity and constant use. This is because a good understanding of the local people's perception is vital to obtain effective public participation and support for sustainable lake basin governance and wise use of resources (Avramoski, 2004; Rodriguez, 1995; Tran et al., 2002). Therefore, this study attempts to provide meaningful feedback on water resources governance performance at the local Basin level and to explore the local people's views and experiences of the SLB governance. How satisfied are they with the governance performance? How do they perceive the SLB governance system? What do they think can be done to improve governance performance? This paper is divided into six major sections. The first section introduces the concept of local people's perceptions in Lake Basin water governance, followed by the case study area with extensive deliberations on issues of local governance in the SLB as well as the physical, socio-ecological impact of human pressure in the study area. The next section addresses the methodology of the study and this is followed by the presentation of the results of the study. The paper ends with discussion, conclusion and recommendations for the improvement of governance in the SLB.

## 2. Study area

### 2.1. Songkhla Lake Basin (SLB)

This study was carried out in Songkhla Lake Basin (SLB), the largest natural lagoon in Thailand, which is made up of 12 sub-basins. The Lake consists of four interconnected lake ecosystems: Thale Noi (approximately 27 km<sup>2</sup>) and its marshes environment became the first Ramsar site of Thailand in 1997. Others are Thale Luang (approximately 473 km<sup>2</sup>), Thale Sap (approximately 360 km<sup>2</sup>), and Thale Sap Songkhla (approximately 182 km<sup>2</sup>) (Ratanachai and Sutiwipakorn 2006) (NEDECO, 1972; NESDB and NEB, 1985; Tanavud et al., 2001; Iwasaki and Shaw, 2010). It is a unique ecosystem in Southern Thailand with its watershed lying in three provinces, including all 11 districts of Phattalung province, 12 (of the 16) districts of Songkhla province and 2 (of the 23) districts of Nakhon Si Thammarat province (Fig. 1). It covers approximately 8729 km<sup>2</sup>, consisting of approximately 7687 km<sup>2</sup> of land area and approximately 104 km<sup>2</sup> of the Lake Surface (ONEP 2005, Iwasaki and Shaw, 2010; ONEP 2011).

The water environment in Songkhla Lake is a unique combination of marine, brackish and freshwater ecosystems, and it has semi-closed estuaries with the sea mouth in Thale Sap Songkhla, and this is one of its lagoonal features. Furthermore, the ecosystem ranges from tropical rainforest in upstream watershed (basin) areas to the sea through complex water channels (sea mouth and several water gates) with tidal influences and negative impacts of human activities (Iwasaki and Shaw, 2010). The Lake is a lagoonal system that connects to the Gulf of Thailand at the Thale Sap Songkhla through a narrow channel outlet and is subject to seasonal fluctuations in salinity (Lesaca, 1977; Tanavud et al., 2001). There are more than 100 streams of all sizes that drain the Basin into the lagoon (Lesaca, 1977). Total annual inflow from streams to the entire lake system is 5,200,000 m<sup>3</sup> (Thimakorn and Vongvisessomjai, 1979) and an average run-off of 4,896 m<sup>3</sup> with a storage capacity of 28 cubic meter (WWAP, 2007). Sediment rate in the Lake has been estimated at 1.0 mm yr<sup>-1</sup> (Tanavud et al., 2000).

This complex ecosystem is rich in biodiversity with multitude of flora and fauna species and is one of the two lagoons in the world that has endangered species of the Irrawady dolphins. It is a highly diverse and rich ecosystem providing fishery resources all year round (Pornpinatpong, 2010). The Lake also serves as an important nursery ground for many economically important species of fish, crabs and shrimps (Choonhapran et al., 1996, Mahuntham, 2002). They form a life supporting system, which provides a source of livelihood to more than 1.9 million population of the 25 districts located in the three provinces of Southern Thailand that make up the Lake Basin (NSO, 2012). The major economic activity in the Basin include: rubber plantations, paddy rice farms, fruit tree orchards, fishery, aquaculture and animal husbandry with a high attractive tourism potential. Land use pattern in the SLB has undergone significant changes during the past few decades, following socio-economic and demographic changes (ONEP 2013, DANCED and MOSTE, 1999; Taylor and Son, 1985; Emsong, 1999; NESDB and ONEB, 1985).

### 2.2. Impact of human pressure in the SLB

The past few decades have evidenced overexploitation of the rich natural resources and serious environmental pollution resulting from human and industrial activities. This has resulted in the deterioration of the valuable natural resource base of the Lake at a rate never seen before in history, causing depletion of biodiversity, devastation of life supporting systems, deterioration of water quality, depletion of fishery resource, shortage of fresh water in dry

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