



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

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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 km²) and its marshes environment became the first Ramsar site of Thailand in 1997. Others are Thale Luang (approximately 473 km²), Thale Sap (approximately 360 km²), and Thale Sap Songkhla (approximately 182 km²) (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 km², consisting of approximately 7687 km² of land area and approximately 104 km² 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 m³ (Thimakorn and Vongvisessomjai, 1979) and an average run-off of 4,896 m³ with a storage capacity of 28 cubic meter (WWAP, 2007). Sediment rate in the Lake has been estimated at 1.0 mm yr⁻¹ (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

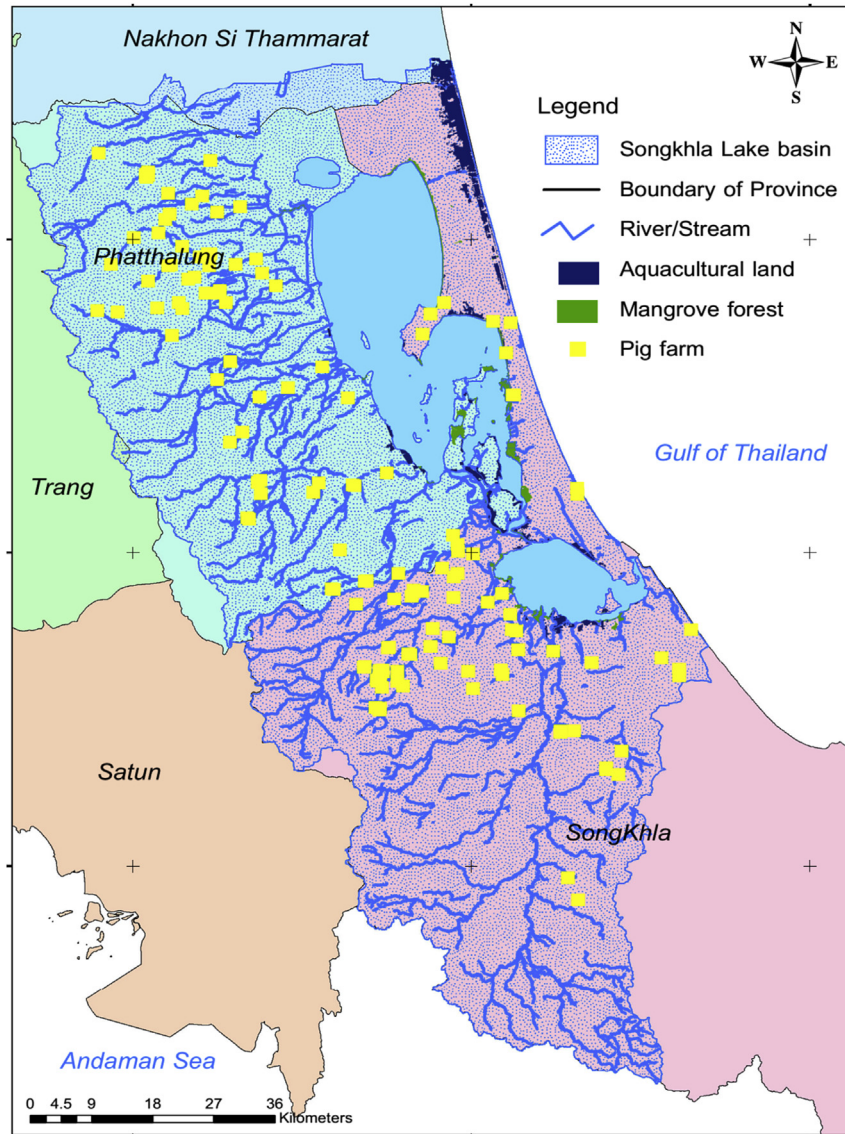


Fig. 1. Map of Songkhla Lake Basin showing the lagoon system of the Songkhla Lake in Thailand Source: Peter Cooley.

season, plus social conflicts in water and other natural resources use (Ratanachai and Sutiwipakorn, 2006; Iwasaki and Shaw, 2010) (Fig. 2).

Fishery resources in the Lake are not well managed, which

induced grand scale over-exploitation. This is evidenced by the increasing use of prohibited equipment and illegal fishing methods. (Choonhapran et al., 1996, Mahuntham, 2002). Also, the semi-permanent installations of fishing equipment in the water

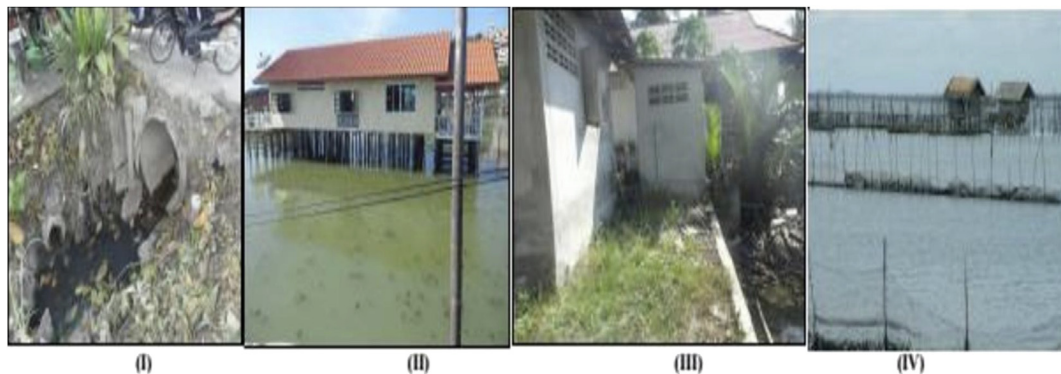


Fig. 2. Showing some sources of pollution in the Songkhla Lake: (I) Community wastewater drains to the Lake (II) Faecal pollution and eutrophication at Kho-yo home-stay (III) Septic Tank Toilets discharged into the Lake (IV) semi-permanent fishing equipment in Songkhla Lake.

undermined access to limited fishing grounds while causing damage to juvenile fishery resources (Iwasaki and Shaw, 2010; Ratanachai and Sutiwipakorn, 2006). Wetland and Peat Swamp forests have also suffered from severe encroachments and accelerated deterioration (ONEP, 2013).

There are insufficient solid waste and wastewater management facilities in the SLB, which further contribute to pollution problems of the Lakes (Ratanachai and Sutiwipakorn, 2006). The main sources of this wastewater are human activities from households and industries. Industrial water pollution originates mainly from rubber and food industries, shrimp farms, pig farms and rubber plantations as well as from the human communities around the Lake Basin (Pornpinatpong, 2010). This has led to nutrient enrichment in the Lakes' areas causing water quality degradation (Ratanachai and Sutiwipakorn, 2006; TSPR 2010, Chesoh and Lim, 2008). There is also increasing concerns about the possibility of the negative effects of climate change on the Songkhla Lake Basin, especially as it relates to irregular rainfall, abnormal storms and floods (ONEP, 2013).

In-depth search for studies on the local people's perceptions of water or natural resources governance in the SLB did not yield any result; hence little or nothing is known about the local communities perception towards the management and governance of the water resources. Knowing and understanding the perception of local communities is crucial to achieve protection, conservation, and wise management of natural resources in the SLB. This study presents a much needed analysis of the local people's perceptions about the governance performance of the Basin. Therefore, the objective of this study is to understand, explore and clarify local people's perceptions of water governance performance in the SLB and to develop information that can guide and enhance suitable decision-making for the sustainable governance of the Lake Basin.

2.3. Local governance in Songkhla Lake Basin

The Thai Constitution of 1997 strengthened the existing Tambon (Sub-District) Administrative Organizations (TAOs) established in 1994 by allowing local communities and authorities to participate in the management of natural resources. The villages (muban) were placed into an administrative hierarchy within sub-districts (tambon), districts (amphur) and provinces (Chawat) (Tan-Kim-Yong et al., 2003). This gave increasing autonomy to local administrations in development planning as well as enhancing involvement with central governments' line ministries, departments and agencies in natural resources management and governance (Heyd and Neef, 2004; Neef, 2008) (Fig. 3). These TAOs operate under the supervision of the Ministry of Interior (MOI) with the mandate to empower local communities in decision-making, policy formulation, as well as activities related to community development. The TAOs are the main planning mechanism at the local level and the main formal institution for local participation in planning processes (Kaosa-ard et al., 1998).

In addition, the laws governing water and other natural resources in Thailand are derived directly or indirectly from some basic legal texts, traditional and customary laws and or special laws regulating one or more uses of water. There are at least 28 to 48 water related legislations in Thailand (Sukhsri, 1999; Biltonen et al., 2001; Biltonen, 2001), and more than 30 national departments in 9 ministries as well as 7 national committees (UN-Water/WWAP, 2007). A single law may regulate more than one aspect of use (Sukhsri, 1999; UN-Water/WWAP, 2007). The laws are generally fraught with fragmentation and overlapping responsibilities and are beset with a lot of gaps (Cooley et al., 2015a,b,c,d,f,e).

The institutional framework for the implementation of the Integrated Water Resources Management (IWRM) can be found in the

2002 Water Resources Regulation, which makes provisions for water resources to be managed using the river basin as a territorial and administrative unit with a committee as a management organization. This resulted in the establishment of the Songkhla Lake Basin Committee (SLBC) as one of the 25 river basin committees (RBCs) by the Department of Water Resources (DWR) of the Ministry of Natural Resource and Environment (MONRE) (DWR 2006). Thus, Songkhla Lake Basin Committee (SLBC) is the formal government agency responsible for the implementation of the integrated water resources management in the SLB under the supervision of the DWR (DWR, 2006; Kanjina, 2008). However, the Songkhla Lake Basin Development Committee (SLBDC), an administrative committee established in 1993 with the mandate to formulate policies for conservation and restoration of natural resources by the Office of Natural Resources and Environmental Policy and Planning (ONEP) (Uraiwong, 2013), coexists with the SLBC, howbeit, less visible.

One of the challenges that hinder full participation of the local communities in the governance of the SLB is the SLBC/SLBDC structures, which are dominated by the relevant/related central line government agencies and departments, accounting for more than two third of its total members with few slots allocated to the local people. The 34 members of the SLBC have only 7 members drawn from the communities and they must be experts (in most cases academia). The SLBDC is skewed with 28 members and only 6 community representatives, the rest are also drawn from the government establishments (Kongthong and Ratanachai, 2012). The implication is that local people are seldom involved in decision making, planning or implementation of policies because of the already misconstrued perception by the bureaucrats that local people have limited knowledge on resource governance and management (Rattanasuwongchai, 1998; Thammajinda, 2013) (Fig. 4).

On the other hand, local communities have strong informal structures for managing water and other natural resources (see Fig. 5). For instance, the informal governance and management of the Lakes' fishing have two types of rights: the area where semi-permanent fishing gear is applied, which are basically managed according to the rules of 'private property regime; and the areas where only mobile fishing gear can be used/allowed and where 'open access' is the rule, i.e. the harvesting is done on a 'first-come first-serve rule' (DANCED and MOSTE, 1999). But, most government representatives are sceptical about the value of local knowledge and do not believe in the capacity of communities to govern their own resources as well as the fear that established agencies and their staff would lose their influence in more inclusive decision-making processes (Neef, 2008). There are also doubts of the willingness of the local communities to engage in participatory natural resources governance. Consequently, this study shall also investigate the claim of the unwillingness of the local people to participate in the governance and management of the Lake Basin and if this is in any way related to their perception of the governance/management system.

3. Methodology

3.1. Theoretical framework

This study is based on the Adaptive Integrated Lake Basin Management (AILBM), a diagnostic and prescriptive conceptual framework designed to assess the performance of lake basin governance (Cooley et al., 2015ab, c, d, e, f, g). The AILBM framework was derived from the Integrated Water Resource Management (IWRM) (Jønych-Clausen and Fugl, 2001; GWP, 2004; Hooper, 2003; Jonker, 2002; Odendaal, 2002), Integrated Lake Basin

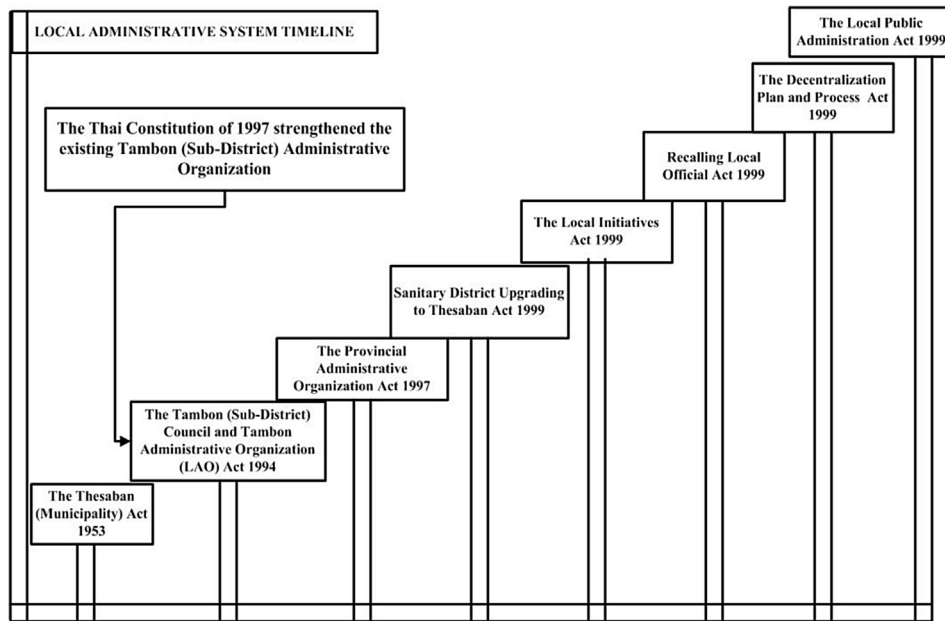


Fig. 3. Local administrative system timeline in Thailand.

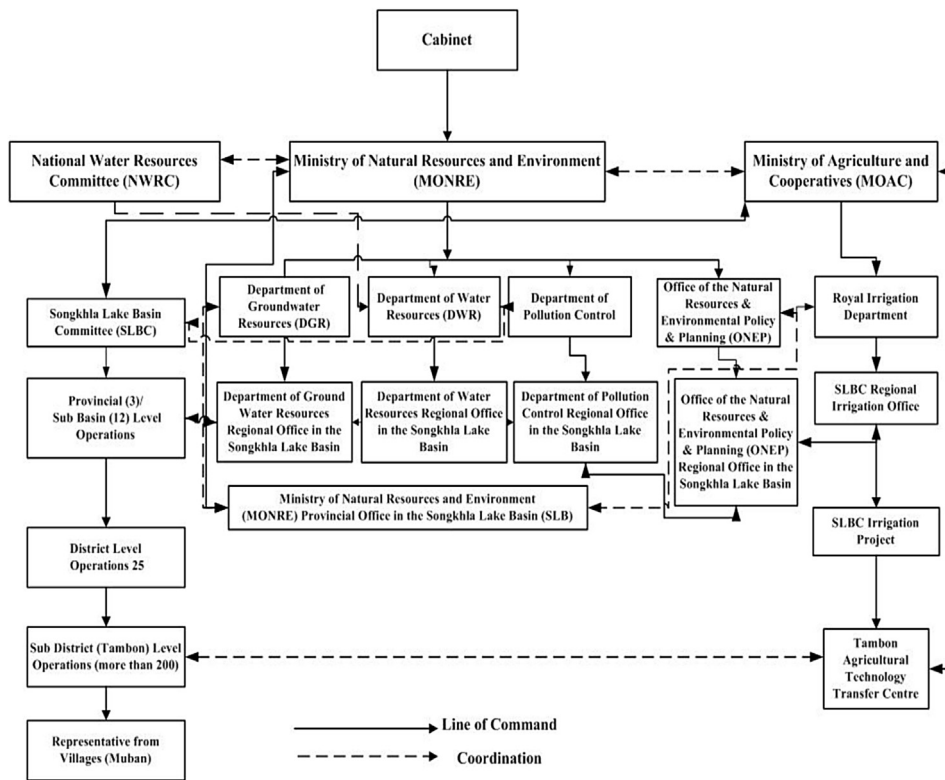


Fig. 4. Water Resources Management organizations and agencies with water related missions as applicable in the Songkhla Lake Basin (SLB).

Management (ILBM) (World Bank, 2005; ILEC, 2005; ILEC, 2011) and Adaptive Management and Governance (AMG) (Holling, 1978; Folke et al., 2005; Green and Garmestani, 2012; Clarvis et al., 2014) frameworks. It is built to critically diagnose the governance challenges of lake basins as well as measure the adequacy and capacity of the current solutions and strategies to develop and prescribe appropriate futuristic solutions (Cooley et al., 2015d). Incorporated

in the framework is the assumption that successful governance of lake basins depend on our ability to create adaptive and integrative systems with equity in representation and inclusiveness in decision-making (Scholz and Stiffl, 2005; Cooley et al., 2015e).

The AILBM framework is significant to lake basin governance discourse because it is designed to be gradual, continuous, holistic, systematic and integrative in nature with the capability of ensuring



Fig. 5. Showing some source of livelihood activities in the Songkhla Lake Basin: (I) Irrigation channel control gate (II) Fishers cleaning and repairing their nets (III) Local collection centre for rubber latex (IV) Paddy rice fields.

resilience, flexibility, adaptability, active participation of all stakeholders, effective and efficient decentralization systems and adequate feedback mechanisms that address the resource management system of the lake basin. The framework has two parts: diagnostic (i.e. sectors, actors, resource system, resource management systems, stressors and institutions) and prescriptive (i.e. adaptability, collaboration, resilience, decentralization, integration and participation). The diagnostic measures the how, what and why of the lake basin governance, which gives more insight into the governance structure of the lake basin (Young, 2002; Walker, 2012), while the prescriptive measures and recommends solutions based on the outcome of the diagnosis (Hersen and Ammerman, 1994; Bromley, 2006; Rose Technologies, 2013). The local people's perceptions of lake basin governance performance are hinged on three of the AILBM's diagnostic components (actors, resource management system and institutions) and four of the prescriptive components (collaboration, decentralization, integration and participation). The AILBM recognizes the critical role of actors (players) who are capable of significantly affecting the outcome of governance processes positively or negatively. The institution (rule of the game) determines the interactions between the sectors, stressors, actors and the lake basins, and also lays the foundation for resource utilization and management and this is the core of the lake basin administrative and organizational system (Young, 1999; Avramoski, 2004; ILEC, 2005; World Bank, 2005, Cooley et al., 2015d).

The prescriptive aspect of the AILBM recognises the importance of effective collaboration (one of the core theme of this paper) to support the promotion of citizen participation in order to enable actors to influence each other's behaviour to advance common and individual interests (Berkes and Folke, 1998; Blumenthal and Jannink, 2000; Tompkins and Adger, 2004; Newman and Dale, 2005; Scholz and Stiftel, 2005). For instance, the integration component looks at the capacity of the governance system to coordinate government agencies and other stakeholders in the lake basin and is designed to act as the connecting link between all the AILBM components (Lebel et al., 2013; Hooghe and Marks, 2003; Newig and Fritsch, 2009). The role of decentralization is viewed from the governance principle that deals with devolution or transfer of power from the central or national government to the lowest level of government in political administrative and territorial hierarchy (Manor, 1999; Ribot, 2004). Participation, another core theme of this paper, is a complex and delicate process through which stakeholders influence and share control over development initiative, decision-making and the resources that affect them (World Bank, 2000; Luyet et al., 2012). Stakeholders in this case are all those actors involved directly or indirectly with the lake basin.

The ALIBM recognizes the fact that the lake basin's local people and their communities can organize themselves for effective management and they are knowledgeable enough to understand the resource system and the regular interplays because of their accumulated experiences (Davis and Wagner, 2003) and would surely have strong perceptions about the governance performance in the basin.

3.2. Sampling design

The data for this work were gathered from literature and official documents of relevant government and non-governmental organizations combined with structured field surveys, face-to-face interviews and observations. The perceptions of local people in the SLB were explored using two series of structured questionnaire field surveys for 200 Tambon Administrative Organizations (TAO), the sub-district local administrative structures and 12 sub-basins in the SLB with different populations. The 12 sub-basins in the SLB include: Klong Pa Payom, Klong Thanae, Klong Nathom, Klong Tachiad, Klong Pa Bom, Klong Phru Poh, Klong Rattaphum, Klong U-Tapao, East Coast Sub-Basin 1, 2, 3 and 4. Also, structured face-to-face interviews were conducted with some officers of the TAOs; the idea was to get more detailed perceptions of the local communities on the governance performance of the SLB. All research instruments were verified by a panel of three experts before they were administered.

3.3. Questionnaire surveys

Local people's perceptions of governance performance were measured through two series of field surveys. The first field survey was conducted between the period of April–July 2014 and covered 200 Tambon Administrative Organizations (TAOs) and the sub-district local administrative structures of the three provinces of Phattalung, Songkhla and Nakhon Si Thammarat in the SLB. A standard questionnaire was developed to elicit information from 2000 households, which was based on the random sampling method and then 10 questionnaires were served in each sub-district to the heads of households of research interest. Data was collected via a household survey using a structured questionnaire, which consisted of 50 questions in four sections. The first section aimed at background and livelihoods of the respondents which addressed issues of land ownership, cost of living and access to common pool resources of the communities as well as the respondents' assessment of the degree of their livelihood support dependent on the natural resources of the Basin. This is based on the assumption that livelihood dependencies embedded within

specific localities are assumed to result in very intimate relations among the people, the environment, and natural resources. The more they engage with the resource system (in work, in living, in leisure, for culture, etc.), the more dependent they are on the environment and natural resources and this creates a personal connection as well as particular and detailed knowledge of local environmental conditions and ecological relations (Davis and Wagner, 2003).

The second section involved the assessment of the perception of the respondents on the resource governance performance and were basically qualitative questions because we wanted to understand their perceptions on the resource governance challenges confronting the SLB, law enforcement and compliance and how they are engaged and involved in the activities of community resource groups. The third section was a mix of qualitative and quantitative questions designed to get the respondents' perceptions and their level of understanding of the Songkhla Lake Basin development plan. Finally, the fourth section was designed to assess their degree of willingness to support and what will make them oppose development activities geared towards the improvement of the environmental quality of the case study area.

The second phase of the field survey was carried out from November 2014–May 2015 and covered the 12 sub-basins of the SLB. The population of interest were households, but with particular attention to those respondents from water user groups like traditional authorities, farmer associations, fishermen, members of the NGOs and CBOs and other community members with first-hand knowledge or traditional wisdom on water management (Black, 1999; Kuzel, 1999). A standard questionnaire was developed to collect useful information from 120 households using a purposive sampling method based on the snowball technique. To ensure equal treatment 10 questionnaires were administered in each sub-basin for the population of interest as earlier stated. Data was collected via a household survey using a structured questionnaire, which consisted of 41 questions in five sections. The first section aimed at background and livelihood of the respondents and addressed issues of land ownership and access to common pool resources of the communities as well as to enable the respondents to assess the degree of their livelihoods support dependent on the natural resources of the Basin.

The second section involved the assessment of the respondents' perceptions on water resources related/relevant policies, legislations and regulations and their effectiveness and as well as how these have improved the environmental quality of the Basin. In the third section, several questions were asked about how they perceived the level of effectiveness of the natural resources management and administration as well as their preferred choice of management and administrative options for the SLB. In the fourth section, the respondents were asked how they perceived the level of stakeholder participation and engagement as applied by the relevant/related government agencies. Issues on the involvement of the NGOs/CBOs were also considered. The fifth section was designed to assess the willingness of the respondents to support activities geared towards the improvement of the SLB. The entire questionnaire was then translated into the Thai language and verified by Thai-English specialists. The survey was conducted with a team of three trained Thai speaking field research assistants.

A total of 2120 questionnaire interview surveys were conducted, equating to an overall response rate of 100%. This was made possible because the respondents were not given the option of going home with the questionnaires, rather the field assistants asked the respondents the questions and the answers were completed by the field assistants on the spot. The questions regarding local peoples' profile and environment and water sections were multiple choices. The questions on the policies and laws

implementation, management, coordination and governance activities of Songkhla Lake Basin Committee (SLBC) and Songkhla Lake Basin Development Committee (SLBDC), preferred choice for administration and management system, public participation, local communities' willingness to support development efforts and information and communication for development sections were a mixture of multiple choice with open-ended questions. This gave the people the opportunity to express their in-depth perceptions. A five-point Likert-scale (with anchor points ranging from 'good' to 'poor' and excellent' to 'poor' or three-point ('yes' to 'neutral')) was also used depending on their appropriateness. Interview transcripts were entered into a Microsoft Excel database and used for analysis.

3.4. Structured face-to-face interviews/observations

Structured face-to-face interviews were conducted with 10 officers of the sub-district local administrative organizations and some community leaders. The idea was to dig deeper into their perceptions, especially from the communities's opinion leaders. The interviews were conducted in English language with the help of a Thai interpreter. The participants were asked questions on their perceived governance challenges, etc. They were also asked to suggest what they considered the best decentralization structure for improved management, administration and governance of the SLB.

Fields visits to the case study area were also carried out, which created the opportunity for direct and indirect observations. These field visits were used to further interview some respondents like fishers and the homestay owners to capture their involuntary reactions with the SLB as well as other users of the Lake Basin. These observations provided another source of useful evidence concerning the depth of the local peoples' connection to the SLB (Yin, 2003, 2009; Gillham, 2000). It helped to yield important insights and to gauge their emotions and feel their pulse from their body language and unspoken but meaningful actions (Sithole, 2011).

3.5. Data analysis

Survey responses were analysed using descriptive statistics with the help of Excel Statistical packages. Qualitative data generated were analysed using a thematic approach (Yin, 2003, 2009; Creswell, 2009). Basic statistics including mean, frequency and percentages were computed for the results. For ease of analysis, the two surveys were presented under the following thematic headings: local people profile, environment and water issues, policies and laws implementation, management, coordination and governance, public participation and access to information.

4. Results

4.1. Local people's profile

The majority of the respondents interviewed were female (63%) and male (35%). The result indicated that a relatively large proportion of the sampled population in the SLB were within the age group of 40–60 years (64%) while 37% were between 18 and 30 years and only 2% were below 18 years. This implies that the respondents had experience on various issues relating to water resources governance and management related to their communities. This is because traditional knowledge is often believed to reside with the older members of the communities who act as the custodians of the local customs and norms of the local communities as well as the gain of long term interactions with the resource system. Education-wise, 37% were primary school graduates, 5% attended

secondary school, and graduates from technical college and university were 27% and 13% respectively, while only 8% had non-formal education. Majority of the respondents had enough education to understand water resources management issues and challenges in the communities as it related to governance. The duration of stay (i.e. amount of time someone has lived in the SLB) of the respondents in the communities was as follows: 29% had stayed for 40–60 years, 55% stayed for 10–30 years and 15% stayed for 1–10 years. The longer the amount of time the respondents lived in the communities indicates better acquaintance with the SLB and its governance, which increased their understanding of local values and customs and also enhanced their access to local knowledge.

The study revealed that the local people of the SLB are homogenous ethnic groups consisting of: those living off the natural resources in the Thale Noi swamp resources, Pak Payun lake fishery, Ban Thung Yai-hill forests, and Ban Mai (Khao Daeng) estuarine fishery as well as communities based on lowland rice or mixed cropping, coastal fishing villages based on inshore fishery resources, combined agricultural and fishing villages, rubber estate villages and new peri-urban communities (Taylor and Son, 1985). Also, there were 8 major types of land holdings in the communities: residential lot 42%, aquaculture (fish or shrimp) ponds 1% swine farms, 1% vegetable gardens/cash crops/orchards, 34% paddy rice farms, 11% rubber plantations, 8% fishing lots in Songkhla Lake, 2% oil palm plantations.

Interviews with the local people revealed that the fishing lot acquisitions in the Lakes depend on the first person to stake a claim and then he/she can pass it on to their families or sell it to another person. Each family lives in simple dwellings well-built with wood, cement, fabricated materials and/or roofing materials made of galvanized zinc, asbestos roofing sheets and some with thatched roofs. Wood and cement are common materials used for the floors and walls. Cooking is done with wood, gas cookers and in some cases electricity. However, most of the households eat out often, buying food from the many restaurants and food vendors around them.

Also, from the surveys, observations and document reviews, we noted that the major means of livelihood and economic activities in the area are mainly agricultural and commercial activities with very few working in the public service. The common agricultural activities include: rice farming, animal husbandry, aquaculture and processing, fishing, latex collection from rubber plantations, among others. The distribution of respondents' livelihood activities were: business and commerce 38%, rubber planting 17%, rice farming 16%, fishing and aquaculture 19%, public services 8%. The communities were well sufficient because of high level of economic activities that generate income within the communities. All members of the family contribute to the labour pool in every household's economic activity (Fig. 4).

Some major conclusions that can be drawn from the results of the interviews, surveys and observations is that majority of the communities' livelihood activities were connected to the natural resources of the SLB. The majority of the households also raised animals as alternative and complementary livelihood and the communities very close to the Songkhla Lake engaged in fishing activities. Also, from the interviews and surveys, we discovered some resource conflicts issues. The respondents highlighted the real and perceived conflict issues within the local communities (depending on how each of their livelihoods were impacted by others activities). For instance, the residents of Kho-yo are of the opinion that noise from home-stays is a major public health issue in the community. The fishing community of Khu Tao feels that home-stays at Kho-yo have more polluting effects than wastewater from the shrimp farms in Songkhla Lake, which in turn affects their livelihood negatively. They also perceived that it is difficult to

regulate the home-stay activities because of their influence and status in the community. On the other hand, the home-stay businesses feel that the fishers impact negatively on the environment of the Lake because of the over-crowded nature of their permanent and semi-permanent fishing gears, which they feel encroaches on their space and affects their guests' water leisure activity. These issues and perceptions often result in serious conflicts among users. The study also revealed that the average monthly income per household in the study area ranges from: 30–150 USD (20%), 150–300 USD (29%), 300–500 USD (27%), 500–600 USD (13%) and >600 USD (115%) (Table 1). Also, majority (52%) of the respondents felt that the cost of living was high in the study area, (6%) were of the opinion that it was low and (17%) were not sure.

The interviews and observations revealed how passionate the local people are about the Songkhla Lake and its subsidiaries. When asked about the challenges facing the SLB and the benefits they enjoy from it, they get excited and really emotional. One community leader, a local fisherwoman who doubles as a volunteer protector of the mangrove forests, insisted that the best place for the interview was on her canoe and in the middle of the Songkhla Lake. She talked about the Lake in personal terms and as a living being and her commitment to the mangrove was so strong, her anger could literally be felt when she talked about those destroying the mangrove forest. In other interviews, the fishers bemoaned the quality of the Lakes and how it affects their livelihood. But, more than that they were saddened by the fact that the poor environmental and water quality removed from the aesthetic beauty of the Lakes. They talked passionately and almost intimately about how important the Lake is to their community, and to show their appreciation they set up lamp-lights in the centre of the Lakes at night to add to the Lakes' allure and serenity. Listening to them talk about the Lake was like listening to someone talk about a beloved friend. Field visits to the fishing communities were quite interesting as the local people took pleasure in introducing us to the Lake and

Table 1
Respondent profiles.

Characteristic	Description	Sub-district survey _2014		Sub-basins survey _2015		% Mean
		#	%	#	%	
Sex	Male	747	37	44	33	35
	Female	1253	63	76	63	63
Age (years)	<18	30	3	2	2	2
	18–20	55	4	3	2	37
	20–30	320	16	11	9	
	30–40	350	18	29	24	
	40–50	409	21	25	21	64
	50–60	419	21	38	32	
Educational status	>60	393	20	16	13	
	Non formal	140	7	–	–	7
	Primary	829	42	38	32	37
	Secondary	479	24	31	26	25
	Technical	479	13	38	32	27
Duration of stay (years)	University	278	14	15	12	13
	1–10	345	17	16	13	15
	10–20	243	12	18	15	55
	20–30	349	18	30	25	
	30–40	322	16	29	24	
	40–50.	239	12	11	9	29
	50–60.	227	12	8	7	
Monthly Income (USD)	>60	245	12	8	7	
	30–150	493	25	19	16	20
	150–300	581	29	35	29	29
	300–500	407	20	38	35	28
	500–600	224	11	19	16	14
>600	291	15	9	8	11	

its features – taking us around on walks, in their canoes - and telling us stories.

4.2. Water environment issues

The majority of the people (55%) perceived that the benefits of Songkhla Lake were more on flood/drought control while 25% were for irrigation, 12% water (groundwater) supply, 3% water (surface) supply, 3% fisheries and marine resources, but only 1% gave tourism any consideration and swimming was not considered a benefit at all. This is interesting because the SLB is said to have a high tourism potential and it is expected that coastal communities will take pleasure in swimming in the waters available to them for free. But, interviews and observations revealed that the local people are not exactly keen on the tourism issue, especially with the challenge of the Kho-yo home stay and they are not easily aware of the tourism potential. Also, water quality challenge caused by inadequate solid and industrial waste and wastewater management makes swimming an undesirable activity. Expectedly, majority (43%) of the respondents perceived that the main environmental challenge of the SLB is municipal solid waste and wastewater management, others considered issues like water quality and pollution (23%), problem of management, administration and governance (21%), fishery and aquatic resources depletion (12%), deforestation of mangrove and peat swamp forest (6%) as well as siltation and sedimentation (5%) (Fig. 6). Domestic water supply was sourced from municipal water facilities (50%), boreholes (groundwater) (29%), hand dug well (11%), rain water (5%) and others (packaged water) (4%); and sanitation (toilets) systems in use were pit latrines (85%), septic tank systems (13%) and pour flush (2%). During interviews, the respondents expressed their deep worries over the quality of the Lakes and how it affects their communities. They were equivocal in their willingness to support any move by government to improve the waste and wastewater management challenge in the SLB.

4.3. Implementation of policies and laws

The local people were of the opinion that the water policies and laws were not adequately implemented in the area. 54% accepted that the policies and laws were fairly implemented, while 35% said

they were poorly implemented and 8% rated the implementation level as good. However, 52% considered effectiveness of implementation to be fair, while 30% said effectiveness was poor and 13% perceived that the implementations were effective. When asked which particular legal instruments they thought should be given adequate consideration, especially for improving environmental quality, the following legal instruments were listed by the respondents: laws for the control and regulation of fishing, environmental conservation and pollution control laws, treatment and management of industrial and domestic wastewater laws, promotion of public health laws, marine protection and other aquatic resources related laws. The respondents' perceptions on the issue of enforcement and compliance in the SLB were: rated fairly by 47%, poorly by 36% and 16% perceived it to be good (Fig. 7). Interview revealed their dissatisfaction with enforcement of regulation and they complained of the fact that home-stay owners could get away with anything because they were influential implying a disparity in enforcement and compliance mechanisms.

4.4. Management, coordination and integration

The majority of the respondents (54%) perceived that management and governance of water and related resources were unsatisfactory, while 20% perceived it to be satisfactory, 14% said that the management and governance systems were fair, 9% rated it as poor and only 1% said it was good. Also, 64% of the respondents viewed the coordination and integration among various levels of government (national, provincial and local) as well as with the agencies and departments as unsatisfactory, 15% believed it to be poor, 14% perceived it to be fair, 4% said it was satisfactory and 1% believed it was good. On their perception of the number of government ministries, departments and agencies involved in the governing of the SLB, 33% of the respondents perceived that the number of government actors were high, 31% perceived that the number of the formal actors were fair, 30% perceived the number of the actors to be low and 3% were of the opinion that the number of the government agencies in the Basin was satisfactory (Fig. 8).

In all, 68% of the respondents were not satisfied with the idea of multiple agencies and actors involvement in the management and administration of the SLB; only 15% of the respondents preferred

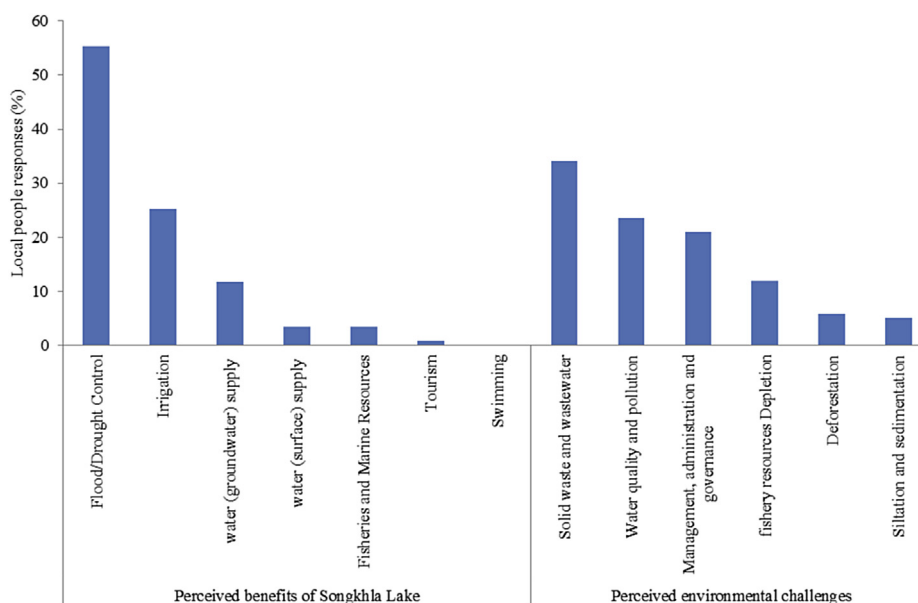


Fig. 6. Local people's perceived benefits and environmental challenges of the Songkhla Lake.

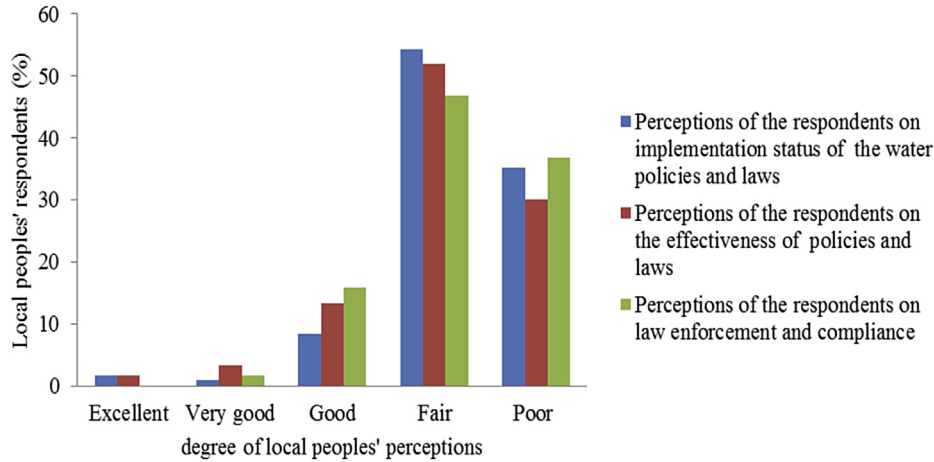


Fig. 7. Local people's perceptions on implementation of water policies and laws.

the existing system and 17% had no opinion on the matter. 45% of the respondents preferred a single formal management and policy harmonization organization for the coordination of the use and management of the diverse resources used in the Basin, 21%, however, were not in support of this proposition and 34% were neutral. Also, 58% of the respondents preferred that Local Administrative Organizations (LAOs) {Provincial Administrative Organizations (PAOs), Municipal Administrative Organizations (MAOs) and Tambon Administrative Organizations (TAOs)} be more involved in the management and administration of the SLB, while 17% were not in support and 25% were neutral (Fig. 9 and Table 2). However, during interviews the respondents complained about the confusion of having too many State actors regulating the same resource. For instance, they argued that the SLBC and the SLBDC seemed to have the same mandates and it's not quite clear how people are to differentiate them. They were also cynical about the activities of the Committees and other governance agencies, claiming that they were so much talk and too little action. Some suggested that the issue of too many different government bodies could be responsible for weak enforcement and compliance.

4.5. Public participation

This study revealed that 35% of the respondents perceived that

the participatory policies of the government agencies in the SLB were unsatisfactory, 28% perceived it to be poor, 17% said they were satisfactory and 15% rated it as good. However, 43% deemed participation and involvement of the NGOs/CBOs in the development activities with the relevant/related government agencies unsatisfactory, and 21% perceived it to be fair and satisfactory respectively, while 9% rated it as good. Also, on the involvement and participation of the local community members in the activities and programmes to improve the status of the SLB: 47% perceived it to be fair, 35% believed it to be unsatisfactory, 14% said it was satisfactory and 8% regarded it as poor (Fig. 10).

Overall, 42% of the respondents said that they were aware of the presence and activities of the Songkhla Lake Basin Committee (SLBC), 33% said they were not aware and 20% were neutral on this issue. Pushing further to determine the level of their participation and involvement in the activities of the SLBC: 33% said they have never participated in their activities, 29% said they had participated and 38% were neutral. However, 45% of the respondents were aware of the presence and activities of the Songkhla Lake Basin Development Committee (SLBDC), 34% were not aware and 21% were neutral, although only 29% participated in the activities and programmes of the SLBDC, while 32% had not participated and 39% were neutral (Fig. 11).

The study revealed that most of the local people surveyed were

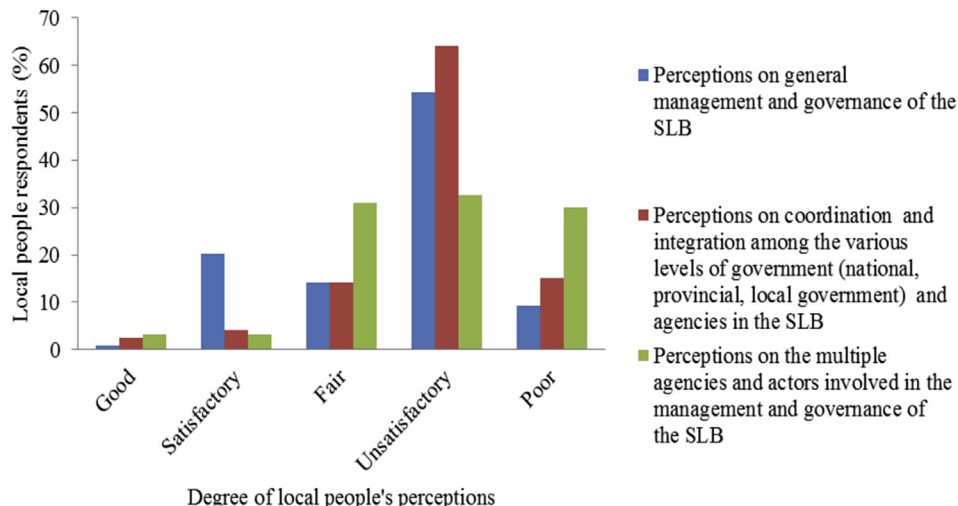


Fig. 8. Local people's perceptions on management, coordination and integration.

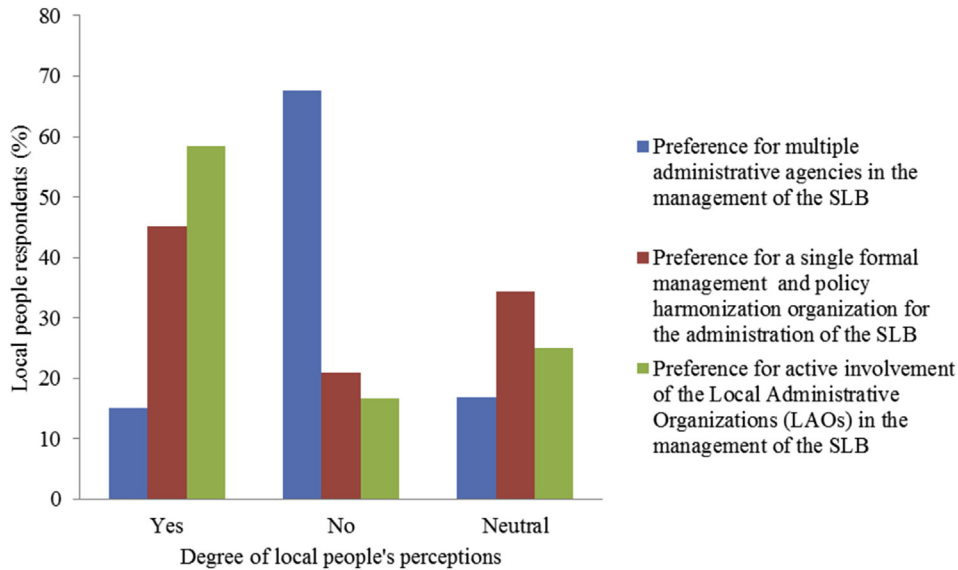


Fig. 9. Preferred choice for administration and management system.

more willing to support any government intervention for the improvement of the SLB: 68% were willing to support, 21% were not willing and 12% were neutral. On the willingness of local

communities to contribute a token to show their level of support: 68% were willing to make such contributions, 16% were not willing and 18% were neutral. Also, on the willingness of the stakeholders

Table 2
Some highlights of the SLB water governance qualitative survey and face-to-face interviews.

Interview questions	Findings
What do you perceive as the main challenges confronting the SLB?	Disposal of untreated industrial, swine farms and domestic wastewater; indiscriminate disposal of solid waste; channelling of storm water without primary treatment (screening, grit removal) into the lake; densely populated, crowded and congested fishing gears and tools; sewage pollution from homestay businesses; deforestation of mangrove and destruction of peat swamp; rapid sedimentation and siltation of the lake resulting in shallowness; pesticides, herbicides and fertilizers contamination from agricultural activities; negative impact of erosion and flooding; depletion of fisheries resources; inadequate and weak enforcement of relevant policies and laws by responsible agencies of government; and weak coordination amongst relevant government agencies
What do you consider to be the challenge of enforcement of relevant and related water resources policies and laws?	Unsuitability of the relevant and related legal and policy instruments making enforcement difficult; low level of awareness among the people on relevant and related legal and policy instruments; legal instruments not specifically targeted at addressing the challenges of SLB; and low level of commitment by the regulatory and enforcement community
What in your opinion are the implementation challenges of the SLB's Development Plan 2011–2016?	Low level of awareness of the Plan by Basin local communities; priority actions for the plan for the SLB should be staggered a little bit in the following order: improved management of municipal solid waste and wastewater; improved water quality to meet recommended standards; reduce and prevent coastal erosion and flooding; improved governance; improved coordination and cooperation amongst all stakeholders; reduce and prevent sedimentation; and re-instatement of aquatic resources (fishery resources/rare species/biodiversity). Going forward will require a strong community education on the development plan.
What will be your recommendations for the improvement of the SLB?	Dredging for the removal of sediments from the Lake to improve its depth; lake shore protections with adequate system of drainages installed and installation of pre-treatment systems for storm-water before entering the Lake; dialogue with the fishing communities on how to improve fishing activities; carry-out special activities targeting the garbage bank operators and municipal cities solid waste collectors; empower the communities around the Lake for self-management and protection of the Lake; in the case of Kho-yo Home Stays, the issue of land ownership need to be properly addressed so that proper investments can be made to improve their infrastructures, which will also address the current sanitation challenges they face; development of improved and appropriate sanitation devises that will be suitable for the home stay businesses location; organizing joint regular meetings between the government, local people and policy makers; improvement in the law enforcement mechanisms; and enforcement of fishing legislation and other relevant legal instruments for the protection of the Lakes.
What is your opinion on the water policy and other related legal instruments?	Nothing is really wrong with the policies but ineffectiveness is due to the inability of the government to take decisive actions to stop the degradation of the environmental quality of the Basin, especially by stopping illegal activities like the use of unauthorised fishing gears/tools as well as absence of treatment of wastewater by industries in the Basin, inadequate sanitation systems, especially for households communities nearer to the Lake, etc.
Suggestions for improvement	More authority should be given to the provincial level of government and the local administrative level; balanced shared responsibility between the central and local administrative organizations and proper delineation of functions and responsibilities among agencies and departments involved in the management of the Basin

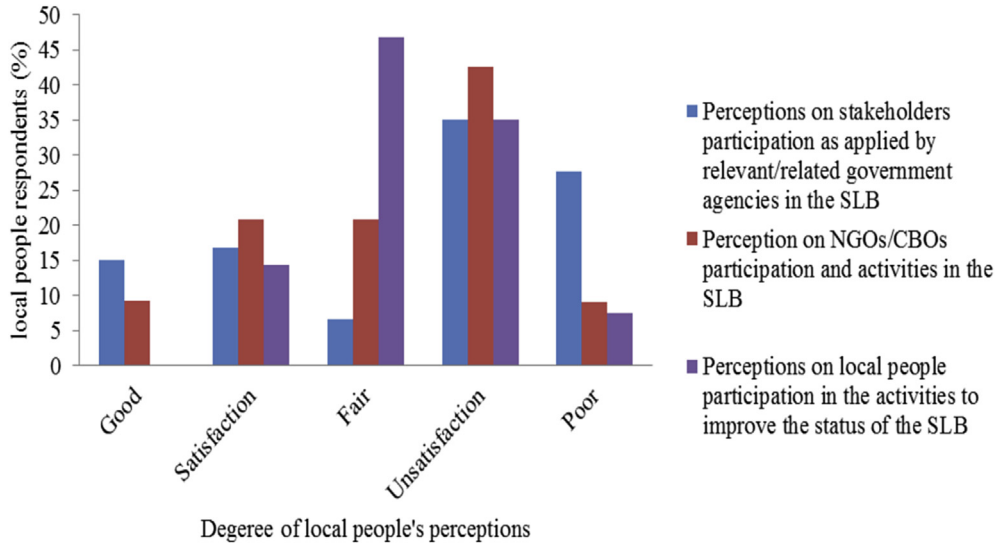


Fig. 10. Local people's perceptions on public participation in the SLB.

to work together for the development of the SLB: 69% said they perceived that all the stakeholders would be willing to partner for the progress and improvement of the environmental quality of the SLB, 19% were negative, while 13% were neutral (Fig. 12). During interviews with respondents from the Kho-yo home stays, they revealed that one of their major challenges was that they did not have ownership rights on the land on which their businesses are located and so could not go into proper development with environment-friendly sanitation and hygiene systems. They suggested that if the ownership structure of the land is regularised, then they could source for the required finance from the financial institutions. They bemoaned the current status of their facilities and regret the negative impact they have on the quality of the Songkhla Lake.

4.6. Access to information

The study revealed that the respondents had access to fairly good environmental knowledge and information from the government agencies, NGOs/CBOs and mass media. This could be based on the higher level of education of the respondents that helped them to access and understand environmental related information. This level of education needs to be considered in developing

communication materials for sustainable resources management (Tenge et al., 2015). Overall, 43% perceived that the quality of the environmental awareness campaign programmes organized by the government agencies in the SLB were fair, 24% perceived it to be unsatisfactory, 19% perceived it to be poor and 13% said it was satisfactory. On the quality of environmental awareness campaigns organized by the NGOs/CBOs, 38% of the respondents perceived it to be unsatisfactory, 30% said it was fair, (18%) were of the opinion that it was poor and 14% perceived it to be satisfactory. Also, 28% of the respondents perceived the quality of the environmental awareness programmes of the media on the SLB to be fair and unsatisfactory respectively, while 15% stated that it was poor and 15% noted that it was satisfactory (Fig. 13).

5. Discussion

Local people are part of the stakeholders (individuals and groups who are directly and indirectly connected to the Lake Basin and will be potentially affected by its management) who usually do not receive due consideration in the decision-making of the governance process for the SLB, even though they are the ones with an intimate and long standing relationship with the resource system. It has been erroneously assumed that the local people do not

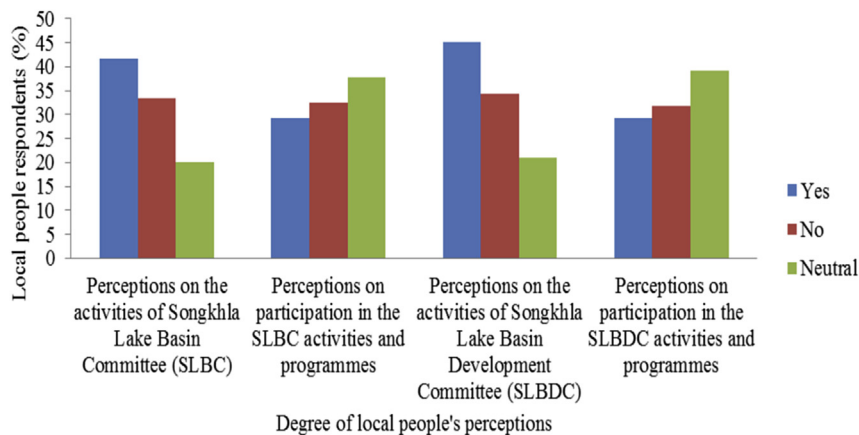


Fig. 11. Local people's perceptions on participation in the activities of Songkhla Lake Basin Committee (SLBC) and Songkhla Lake Basin Development Committee (SLBDC).

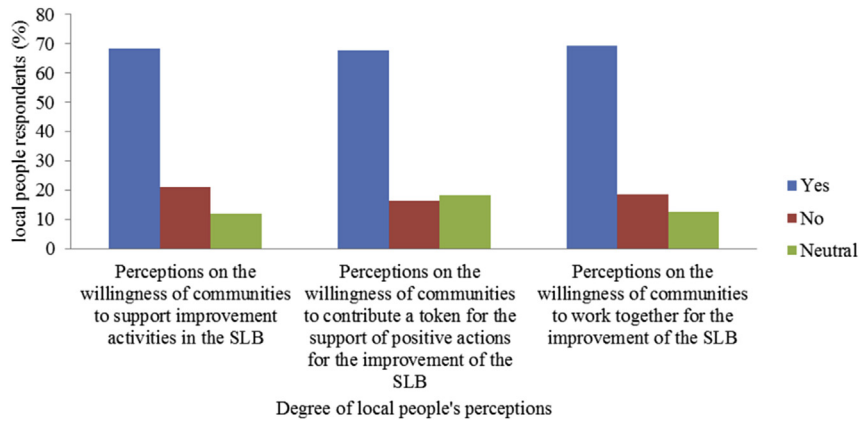


Fig. 12. Perception on the willingness of local communities to support the improvement of the SLB.

have much to contribute to resource governance and management and so it is not required to seek their input. However, evidence shows that the local people, based on their long standing interactions and relationships with the resource system, possess substantive knowledge because the SLB provides direct and indirect benefits to them as well as meet their local needs (McNeely 1995). They have a personal relationship with the resource based on their connection to it, whether as a source of their livelihood or religious rites or relaxation or simply identity. The Lake Basin can be said to be like a beloved friend, something they have come to know and trust. It can, therefore, be rightly assumed that they would be protective and possessive about it. This will influence their response to the governance and management of the Lake Basin. If they perceived that the governance and management system is not good enough to protect the resource they have come to know and love, they will inadvertently resist or ignore the system. This can, to some extent, explain the failure of the system to protect the Lake Basin. Consequently, it becomes quite essential for decision-makers to know and understand the perception of the local people, so that there will be a buy-in and support for the formal management of the SLB in order to ensure success.

According to Gibson (1966, 1987), perception is what guides actions towards the right or wrong direction; however, it is not passive; it is shaped and nurtured by learning, memory,

expectation and attention that influences actions (Gregory, 1987, Bernstein, 2010). This indicates that perception is built over time and it can be right or wrong, but strong enough to develop beliefs and influence actions. Therefore, development initiatives that ignore the perception of stakeholders (especially closely related stakeholders like the locales) will not be able to capture their wide range of need especially as it concerns livelihood risks and relationships with the resource systems (Cooley et al., 2014). This can gravely affect participation, which is a key element of measuring modern day resource governance. It is, therefore, misguided to assume that governance and management of natural resources like lake basins can succeed or be effective by downplaying or misrepresenting the perception of the local people.

The local people of the SLB, for instance, were quite dissatisfied with the management, coordination and governance of the SLB because they had over time arrived at their own conclusions. In their view, the implementation of solid waste and wastewater management strategies were inappropriate and inadequate, enforcement of standards for sanitation practices (especially for the coastal communities nearer to the Lake) was weak, and there were too many meetings with too little concrete actions that improved the environmental quality of the Basin. Interestingly, they believed that some of the governance instruments are fair enough, but implementation is weak. They seem to prefer the establishment of

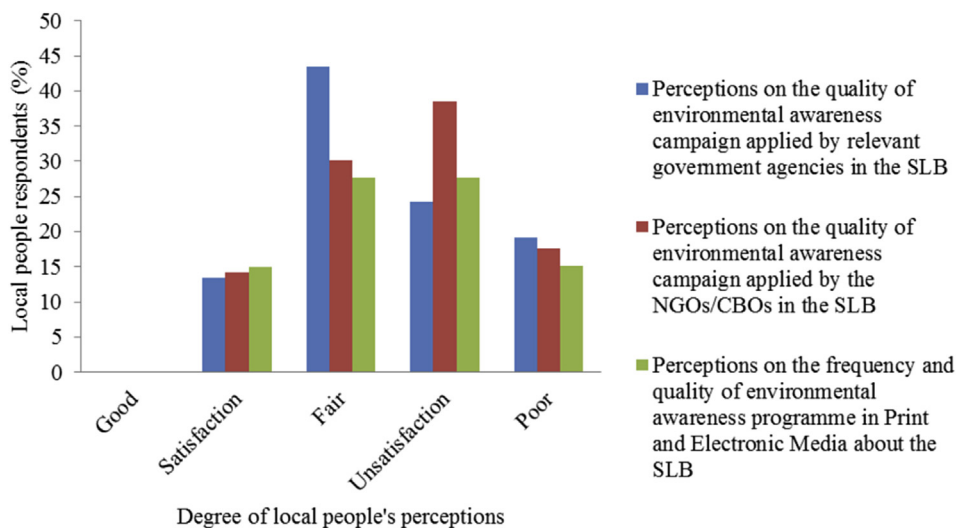


Fig. 13. Access to information and communication for development.

a single formal management and policy harmonization organization for coordination instead of multiple agencies and actors (as the case is currently) because this leads to confusion and administrative/jurisdictional conflicts. They also advocate for active participation of the local communities and more involvement of the Local Administrative Organizations (LAOs) in the management and administration of the SLB. Furthermore, to disprove the assumption that the local people are not adequately equipped to understand natural resources governance and management issues, they made specific recommendations such as: requiring more authority for the Provincial Administrative Organizations (PAOs) above the other lower LAOs in order to reduce the current bureaucratic hurdles; balanced and shared responsibility between the central government and LAOs; proper delineation and responsibilities among all actors; reduction in the number of government agencies and departments involved in the direct management of the Basin; and commensurate funding for the LAOs to enable them to discharge their duties creditably. These are core issues of governance that require deep and long term thoughts arrived at based on these local peoples' perceptions of what they viewed as the challenges of governance and management of 'their' SLB.

However, the local people of the SLB are equally guilty because of their own negative impacts on the SLB, through the direct discharge of sewage from home-stays and households, indiscriminate fishing and illegal fishing gears by fishers, indiscriminate disposal of solid waste, deforestation of mangrove and peat swamp forests, disposal of wastewater from aquaculture ponds, poor agricultural practices that cause excessive discharge of nutrients and silts materials into the Lake, etc. It is interesting to note that these local people recognize the impact of their activities on the Basin and would like to know what to do to correct it. Most conflicts among users of the Lake Basin arise from these negative impacts on the livelihoods of others. There is the perception that some stakeholders are given priority over others because of their level of wealth and positions. For instance, the fishers perceived that the home-stays are more polluting than the other activities, but because they are richer and more influential, they hardly comply. This is a perception that often leads to conflict. On the other hand, the home-stay owners feel that the fishers' activities and the aquaculturists contribute more to the deterioration of the Lake. Other local people, apart from the fishers, aqua-culturists and home-stay owners, complained about the negative impact of the noise pollution from the home-stay business, odour nuisance of wastewater from aquaculture ponds and swine farms, as well as the fact that the Lake has been turned into a sewer for storm-water and untreated wastewater from homes, rubber and food industries. These are all perceptions that lead to conflicts among the local people and they are desirous to reduce these conflicts as well as the negative impacts on the Lake Basin. Evidently, if the governance and management system had taken these perceptions into cognizance, probably things would have been done differently.

These perceptions are largely why the local people of the SLB considered the implementation of the governance instruments ineffective and inadequate, judging them highly unsuitable, making enforcement and compliance difficult. They also identified low level of awareness among the people on the relevant and related governance instruments and the fact that these instruments do not specifically target the SLB challenges as pointers to their failure. They went further to claim that there was low level of commitment by regulators. These perceptions can be related to the fact that the institutions for water resources governance in the SLB are actually outmoded and obsolete (Christensen and Boon-Long, 1994; Wongbandit, 1995, 2005). So, the perceptions of the local people are actually in agreement with the findings of the experts; and actually strengthen the need for institutional review.

There are informal tenures, rules, customs and traditions (or in summary local structures) that exist in the communities, which influence how water and other natural resources are managed. This informal management system was devised and is implemented by the community of resource users, and it co-exists with the formal government management system. In fact, the local people consider this informal structure to be more legitimate than the formal (TWRA and ONEP, 2006). This will influence their behaviour and may inform their hesitance to participate in the governance and management of the SLB, as it may seem to contradict with their accepted structure. For example, fishers have staked claims in most of the Lake surface water like fishing lots ownership. The local people said that over the years these fishing lots were acquired by 'first come—first serve' basis, inheritance or outright sale. It is, in fact, a big offense to be caught fishing in another person's lot and no new entrant is allowed except by permission from the fishers who own the lots. This is a strongly held belief, in spite of the standing formal law (Civil and Commercial Code), which provides that a resource like the SLB is for the 'common benefit of all', and the Fisheries Act 1954, which also requires permits, licenses and concessions from the Department of Fisheries (DOF) (KOT, 1954) and also makes provisions for public fishing designated within each Province by the PAOs with approval from the Ministry of Agriculture and Cooperatives (MOAC). This informal structure is so strong that compliance to formal rules and regulations is limited where it overlooks the traditionally accepted norms. Like in the case of Thale Sap Songkhla (outer Lake) and Thale Sap (inner Lake) where there are more shrimp traps than are officially allowed, which indicates that the local people have little faith in the relevance, legitimacy or efficacy of these rules (DANCED and MOSTE, 1999). In the same vein, local communities have developed their own system of water management, which was later formalised by the People's Irrigation Act of 1939, where irrigation water is managed either on a group or individual basis, particularly to supply water to agriculture areas for growing rice (Kaosa-ard et al., 1998). A State Irrigation Act was enacted in 1942 under direct supervision of the Royal Irrigation Department (RID) with more diverse purposes differentiating it from the local people irrigation. It can be assumed that the efficient functioning of the People Irrigation System is as a result of the community members' participation, which in turn contributes to the maintenance of the systems (Kaosa-ard et al., 1998; Sukhsri, 1999). In as much as water and indeed other natural resources are 'common pool' (Ostrom, 1990; Ostrom et al., 1999; Kalikoskia et al., 2002), they are without open access (Heyd and Neef, 2004). Therefore, the local people's perceptions, based on their local informal structure, can lead to conflicts with each other and formal regulatory authorities. It is interesting to note however, that conflicts among local users of the Lake Basin arising from informal rights and tenures are resolved traditionally and rarely go through the formal mediatory system (DANCED and MOSTE, 1999).

Patel and Stel (2004) argue that creating better governance at the local level cannot only occur through assigning greater roles to local communities, but rather through the local population being given roles within the wider 'decentralizing' process of the country. It is, therefore, understandable when the local people of the SLB perceive that their participation and involvement in natural resource governance is fairly-unsatisfactory. These perceptions cause them to distrust the system and can influence their responses and behaviours. Furthermore, the fact that the SLBC and SLBDC are dominated by members from the public sectors and almost no representative from the local people makes them to assume that they are unimportant in the scheme of things. In as much as they acknowledge the presence of these bodies and even participate in their activities occasionally, they believed that it is just much talk and very little action. They said they are willing to support and

contribute for the improvement of the SLB because they really want to enjoy the benefits therein, but the decision-makers have not given them the opportunity to do so. These perceptions go a long way to interpret the assumptions that the bureaucrats have about the local people and the constant challenges of the governance and management system of the SLB.

6. Conclusions and recommendations

The data collected in this study are the first of its kind in this area and can be of great help for local managers of the SLB in order to develop programmes that enhance the management and governance of the SLB that will address the local people's perception. Also, this study has demonstrated that proper understanding of the perception of the local people in lake basins is strategic to achieve better compliance to resource governance policies and legislation. Understanding perception makes governance and management easy because the people will not likely resist the formal institutions, but will be more inclined to obey the related laws and regulations. It will ensure the cooperation of the local communities with the agencies of government and less conflict between the people and the government, and among themselves. This will go a long way to strengthen participation because the local people will be more inclined to contribute for the progress and development of the lake basins.

The local people of the SLB were eager to talk about their perceptions on the governance performance of the natural resource that provides livelihood and shelter for their families and communities. They exhibited a high knowledge of the SLB and its governance based on their experiences, relationship, intellectual capacity and historical connections to the Lake Basin. They showed rich interest in the improvement of the quality of the Lake Basin, in spite of their misgivings concerning implementation and enforcement of laws and regulations. They were happy that they are finally being consulted and that their opinions matter, and indicated a strong support for government intervention in the SLB. To this regard the following recommendations could be drawn from the views of the SLB locales:

- I. The respondents perceived that capacities to implement and enforce laws and regulation are weak, especially financial, technical and human as well as limited involvement of the local communities. Therefore, they would want these capacities strengthened with special emphasis on stakeholder/public engagement.
- II. The local people prefer a single formal management and policy harmonization organization with an effective participation of the local communities for the management and administration of the SLB. They also prefer the involvement of the Local Administrative Organizations (LAOs) in the management and administration of the SLB because the local people can easily access them.
- III. The issue of the removal of the various structures in the Songkhla Lake that constitute serious sources of degradation, deterioration and pollution will require very intense negotiations with the local communities. In some cases, alternative livelihood activities will have to be encouraged, especially for the fishers, while land has to be guaranteed for the home-stays to construct better structures with sound sewage treatment systems that will protect the Lake from direct discharge of sewage. The households may require some form of subsidy support that will enable them build better sanitation facilities that will not discharge its contents into the Lake. Furthermore, the wastewater and storm-water

from adjoining urban centres need to be primarily treated before discharge into the Lakes.

- IV. There has to be formal recognition given to the informal tenure, rules, customs and traditions or the local structure that exists in the communities, which influence how water and other natural resources are managed. This will encourage discussions around it and broker agreements on how to streamline such practices and make them to be part of the governance structure of the SLB.
- V. Further research needs to be done to know how much the local people understand the requirements and expectations of the laws and regulations that govern the SLB and how that knowledge influences their perceptions, attitude and behaviours.

In conclusion, the local people's perceptions survey of water governance performance in the SLB highlighted key issues that affect the governance performance of the Basin, some of which are fragmented institutional issues, weak coordination, unclear allocation of roles, responsibilities and weak capacities for enforcement and compliance, coupled with lack of adequate integration between the formal and informal institutions. The respondents opined that resolving these issues are key to effective and efficient governance and management of the Lake Basin. While these core issues are very essential, we should not also overlook the aspect that concerns the perceptions of the local communities. This study identified the competition between the formal and informal institutions in the SLB as very critical issues that need to be addressed because of the social conflicts in the area. Our experience in this study showed us that the local people have strong views about the governance and management of the SLB and so their opinions should be given due consideration and included in governance decision-making.

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