Social learning for adaptation to climate change in developing countries: insights from Vietnam

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ABSTRACT

Social learning concepts of developed countries are often recommended for implementing strategies for climate change adaptation in developing countries. The effectiveness of these replications is questionable, because it is necessary to align the set-up of learning processes with the social, economic and environmental conditions of the local context. In this paper, we compare the theory of social learning in Learning Alliances with a Working Group for climate change adaptation in Can Tho City in Vietnam to see how far it is possible to extrapolate current social learning concepts from developed countries to developing countries. The Working Group facilitates participation processes among stakeholders to use and produce knowledge, to work together on problems and to further develop solutions. This is mostly similar to the social learning form of a Learning Alliance. However, the interactions among stakeholders in the Working Group evolve in a much more formal way, which leads to several problems caused by the relative inflexibility of the top-down stipulation of stakeholders' participation, planning procedures and solution approaches. To overcome this challenge, we recommend introducing elements of Learning Alliances to the Working Group, in order to stimulate an open dialogue with incentives and an extension of an action practice approach.

Key words | climate change adaptation, developing countries, learning alliances, social learning, Vietnam, working groups

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INTRODUCTION

In developing countries the discussion of climate change is dominated by adaptation issues (Adger *et al.* 2003; TERI 2006; The World Bank 2007; Klein *et al.* 2007; Jha & Stanton-Geddes 2013) due to both the small contribution of climate change triggers by the majority of developing countries and the serious risk of climate change impacts to the poor, who are least able to cope while being the most affected. This needs a priority setting in adaptation measures in policy-making processes (The World Bank 2007; Puppim de Oliveira 2013). Adaptation to climate change in developing countries is more complicated than in developed countries (The World Bank 2007; Hulme *et al.* 2009), because it takes place in a setting of multiple challenges: poverty, rapid urbanization, environmental degradation, providing urban infrastructure to

support the growing population and sustainability (The World Bank 2010; Puppim de Oliveira 2013). However, because the current standard of infrastructure provision is relatively low, there may be opportunities to 'leapfrog' to better city states that are referred to as 'sustainable' or 'resilient', to avoid problems that have previously been faced in developing countries (Hulme *et al.* 2009; Bahri 2012; Puppim de Oliveira 2013). Social learning amongst relevant stakeholder groups is required for achieving sustainable or resilient cities (Herk *et al.* 2011; Rijke *et al.* 2013). The aim of this paper is to explore to what extent the concept of social learning applies to the context of developing countries. We obtain insights from a case study that was conducted in the city of Can Tho, Vietnam. Vietnam has been listed in the top five of developing countries that

are significantly impacted by climate change (The World Bank 2007), and is also facing the three problems of urbanization, decreasing natural environment and a target of environmental sustainability.

Due to the focus on adaptation, which is a more local and immediate issue (Bahri 2012), a shared trait of many developing countries' environmental policies is a lack of either contractual commitments or targets in collaboration with other countries (Nijs & Shannon 2010; Puppim de Oliveira 2013). Environmental regulations may exist, but they are weak in their implementation and enforcement. This depends largely on the institutional capacity, as well as political and public will for better environmental quality and control. Adaptation to climate change is a governance issue (Hulme *et al.* 2009). It requires continuous learning to deal with complex dynamics and uncertainty about the specific goals that should be achieved (Folke *et al.* 2005). This learning process can result from the contextual conditions surrounding governance regimes and the ambiguous effectiveness of different governance strategies (Rijke *et al.* 2013). A clear policy framework should include high quality climate change information for the region, and land-use planning performance standards to encourage investments, protect long term climate sensitive policies and include a financial safety net for the most vulnerable sections (The World Bank 2007). Cities need flexible systems to cope with as-yet-undefined variables and to adapt to population growth and climate change impacts (Bahri 2012). Even when public financing is limited, public organizations should involve local stakeholders to ensure an appropriate design with informed contributions from bottom-up, and stimulate the process of institutional reform towards participatory urban planning and development (UN-Habitat 2011; Bahri 2012; Puppim de Oliveira 2013). To create a project in the context of implementing climate change policies and strategies, a tailor-made approach is needed which contributes climate change and solutions to local environmental and related development problems of the country (Puppim de Oliveira 2013). Tailoring interventions with the context is typically achieved in social learning processes in which stakeholders jointly engage in discussions about the problems and development of strategies to overcome them (Olsson *et al.* 2006; Ison & Watson 2007; Herk *et al.* 2011). However, these processes of social learning also need to be tailored to the context in which they are applied (Rijke *et al.* 2012).

Vietnam is in need of adaptation strategies that include a combination of technological, spatial and social interventions. The implementation of adaptation strategies depends, among other things, on the effectiveness of stakeholder collaboration in social learning processes. There are many different forms of these social learning concepts. For instance a Learning Alliance (LA) is a discussion platform where various stakeholders can learn, discuss and influence a specific project. A Learning and Action Alliance (LAA) is an LA with an enhanced approach of action-oriented research. Another similar form is a Transition Arena, which has the specific purpose of archiving transitions within structural societal changes. All these concepts have been introduced in developed countries such as the Netherlands, United Kingdom, Germany, Norway and Australia, to enhance stakeholder collaboration and learning amongst groups of diverse stakeholders (Herk *et al.* 2011; Ashley *et al.* 2012). The main problem is the limited guidance for social learning in developing countries, which is difficult due to the limitations of transferability. The projects of SWITCH (2013) involved innovations in the area of sustainable urban water management and promoted several international LA/LAAs to set up a 'multiple-way learning' process, where cities in developed and developing countries are learning from each other. This learning is limited due to stakeholder combinations, project topics and the implementation of social learning forms which have different outcomes resulting from the context, culture and experience of the stakeholders in the participation process. It is questionable whether the construction and positive results of the LA approach which have been introduced in developed countries are replicable in Can Tho, due to the differences in the political structure, organizational capacities, stakeholder participation, and experience in proactive social learning processes. Therefore, the existing Working Group (WG) of Can Tho for Climate Change seems to be unique and location specific. This may be an example for other existing social learning forms in developing countries.

THEORY

Social learning, as described by Folke (2003), is learning through the interaction of individuals or communities.

This can partly or fully include three different learning steps. First, research is made to enhance the understanding of any discovery. Second, capacity is built up to amplify the public's awareness and their capabilities. Finally, a learning process is applied to improve practical outcomes (Senge & Scharmer 2001). Several forms of social learning are recognized, of which five are described as follows. First, 'Collaborative Research' is a form in which researchers work together to achieve the common goal of producing new scientific knowledge (Katz & Martin 1997). Second, the 'Learning Alliance' is a series of interlinked stakeholder platforms on a specific issue where knowledge is collected, exchanged and solutions are realized from the widespread impacts through the up-scaling of an innovative approach. Thereby, it is addressing institutional constraints and speeding up institutional learning (Verhagen *et al.* 2008). Third, the 'Learning and Action Alliance' is a similar platform to the LA, but with an additional action-oriented research approach to achieve greater integration than the LA through early action-demonstration (Steen & Howe 2009; Howe *et al.* 2011). Fourth, 'Socially Embedded Institutions' are a form where stakeholders shape institutions in response to changing situations based on existing social and cultural arrangements (Cleaver 2002). And fifth, the 'Community of Practice' is the establishment of a stakeholder community of a social learning system process, with core practice processes for deep learning in a specific area and boundary practice processes with links to other system-wide processes (Wenger 2000; Herk *et al.* 2011). Sorting them by their state of transition, Collaborative Research is a pre-developed format where elements can be initiated and developed into a Learning Alliance, and with high-level scenarios into a Learning and Action Alliance. This can accelerate further into Socially Embedded Institutions and end up stabilizing in a Community of Practice. Nevertheless, to design a social learning participation process it is necessary to define the objectives of each specific circumstance and societal issue of the project (Bayley & French 2007) and to acknowledge the contextual conditions in which the project takes place (Rijke *et al.* 2012).

This paper focuses on social learning forms of the LA, as well as the LAA. The LA is a discussion platform for a specific project where various stakeholders can learn via the included three learning steps: understanding, capacity building, and application. This happens through several meetings and discussions with each other about the widespread impact of the project. The learning approach involves working together on the agreed underlying problems and sharing information within the power hierarchy at horizontal and vertical levels. The aim of an LA is to create knowledge through exchange of three kinds of knowledge: factual and impersonal, social and normative, and experience based on skills (Steen & Howe 2009). The research of mainly factual and impersonal knowledge can be via a conventional approach, where scientists conduct independent research and share results upon completion with the LA or via the action research approach, where experts are a part of the LA and work together to conduct research and share their findings continuously (Butterworth *et al.* 2011). Further, it aims at mechanisms for addressing institutional levels and the creation of win-win solutions for the stakeholders (Steen & Howe 2009). An LA can have an informal setting, with multiple-channels and more uncontrolled exchanges, where innovations such as multiple small solutions can be developed (Gunderson 1999). It can also have a formal setting, with more controlled, formal and occasional interactions where potential planned solutions can be contested and evolved. It has a selected set of participation instruments, like informational websites, stakeholder workshops, and citizen juries appropriate to the specific project. All these instruments can be used in a participation process to interact with stakeholders (Bayley & French 2007). Case specific, an LA can have a specific coordination office, or the task of coordination can be the responsibility of one stakeholder (in the literature termed a 'champion'). These coordinators are emergent leaders of stakeholder involvements, with experience in stakeholder procedures, which qualifies them to mentor and to play a critical role in initiating and driving processes of change (Taylor 2008).

The implementation of an LA can be difficult because of cultural norms and institutional arrangements. In some cases it is not common practice to bring stakeholders from different disciplines together to develop a joint strategy (SWITCH 2013). A key to being able to provide a strong evidence base can be the creation of an enhanced approach such as the LAA (Howe *et al.* 2011), which includes an LA to link the wide range of stakeholders at the city level and

creates several win-win perspectives for them. Additionally, action-oriented research with a 'learning by doing' mentality can achieve greater integration within the LA, through an early action-demonstration, which can help in understanding and overcoming a lack of experience (Steen & Howe 2009; Howe *et al.* 2011).

Literature concerning social learning describes the LA/LAA as having various strengths and weaknesses, which all must be addressed for particular situations (Rijke *et al.* 2012, 2013). The strength of an LA is that it is a discussion platform for a specific project with a tailor-made design, which implies cultural and local conditions within a specific problem to define feasible and realistic solutions. The potential of combining different knowledge, such as factual and impersonal, social and normative, and experience based on skills, resides within connected stakeholders from different community networks (Olsson *et al.* 2004). In informal settings, one can create novel innovations such as multiple small-scale solutions (Gunderson 1999). This can increase the stakeholder's motivation and can create significant learning experience (Herk *et al.* 2011). In a formal setting, existing planned solutions can be contested and further developed, and it is easier to implement developed solutions in law due to this controlled process (Edelenbos *et al.* 2011). In both set-ups an LA can, by addressing institutional levels, improve institutional learning, break down barriers to horizontal and vertical information sharing and speed up processes of identification and adaptation. At the same time, different strategies can be created and evaluated in a short term of 0–5 years (Steen & Howe 2009; Butterworth *et al.* 2011).

The weakness of the LA/LAA is its time intensive nature and the need for a balanced range of stakeholder involvement (Herk *et al.* 2011). The voluntary participation of stakeholders needs adequate motivation. To create win-win solutions, good organization and moderation is necessary that is able to uncover potential win-win opportunities for the stakeholders. The conventional research approach disseminates the results, and this procedure lacks the active engagement of experts in a co-learning process. Next, it needs integrated assessment of data, and the results should be translated into indicators used by decision makers, which represent the complex nature of the system rather than oversimplified indicators (Steen & Howe 2009). An informally developed innovative solution may be difficult to implement formally within the set regulations and laws. In addition, an LA/LAA is not recommended when a powerfully coordinated action is needed, such as dealing with an immediate crisis (Rijke *et al.* 2013).

METHODS

The objective of this paper is to analyze to what extent the concept of an LA is applicable to the current socio-technical context of climate change adaptation governance in Can Tho. The study area of Can Tho is a typical monsoon-affected city in the low-lying Mekong Delta (Huong & Pathirana 2013; CCCO 2014). Can Tho city is the political, cultural and economic center of the province of the same name and is affected by urbanization, through rapid population growth, and industrialization, which has contributed to an increase in the risk of flooding (Trinh *et al.* 2013; FSCO 2014). The poorest part of the population is mainly in rural areas or concentrated in the city at the river banks, and is vulnerable to climate change effects (SIWRR 2014). Through a lot of soft measures, like education and training, the average citizen is becoming increasingly aware of climate-change related problems, even though their focus is still on urbanization (URC 2013; UW 2013; UY 2013).

Despite the above, and in regards to climate change adaptation, Vietnam may not have the typical attributes of a developing country (Nijs & Shannon 2010). Climate change knowledge is still inadequate within Vietnam but a lot of international projects focus their research on the area and provide support through their reports to the growing literature. Since 1993, Vietnam has been setting up environmental protection laws to carry out international commitments and responsibilities (SCUFCP 2013), including policies for sustainable developments with a set limit on emissions. It encourages scientists to research in the field, it developed a national program to expand policies to respond to climate change impacts (NTP-CC 2008), and employed climate change experts in all ministries at the national level (Nijs & Shannon 2010; CCCO 2014). To improve linkages between water and environmental policies, a new government agency for water resources management has been established with the Ministry of

Natural Resources and Environment (Nijs & Shannon 2010). Vietnam has shown action in international commitments and signed the Kyoto protocol (Kyoto 2014). Climate change regulations have been strongly enforced by law since 2005 (CCCO 2014) and have been spread through every governmental body (Nijs & Shannon 2010). Many recent projects focus on climate change adaptation, while policies on climate change mitigation set environmental standards (DIT 2013; CCCO 2014). This is a challenge, as in both cases the cost arises at the lowest levels, even if the benefits of the mitigation are global, and adaptation benefits occur only locally (Klein *et al.* 2007).

Several international universities, organizations and financial institutions are involved with the public sector entities of Can Tho in creating several action plans for climate change adaptation and resilience at the provincial level (Australian Aid 2011; CCCO 2014). Diverse stakeholders were involved in these planning processes and experienced a bottom-up approach. To address problems caused by climate change, the Central Government established a Steering Committee at the national and provincial level (Figure 1), which can be temporally limited. In order to overcome that vulnerability and to meet the long-term need for climate change coordination, the provincial committee established the Climate Change Coordination Office (CCCO) for Can Tho in 2010. This 'action office' coordinates projects and partners with climate change issues through a received appropriate member list from the Province's City People Committee and set up a Working Group. The WG is a collaboration platform of governmental stakeholders which develops regional action plans, addresses problems, and develops long-term solutions. Because these activities involve multiple government agencies, we assume that some forms of social learning take place during the development of the regional action plan.

Based on a literature review, we have identified characteristics of Learning Alliances in several developed countries through diverse projects such as MARE-Europe in 2008 and SWITCH, 2006 to 2011 (Steen & Howe 2009; Herk *et al.* 2011; Butterworth *et al.* 2011; Ashley *et al.* 2012; Farrelly & Brown 2011; Rijke *et al.* 2013; Bos *et al.* 2013). Further, observations about the concept of the LA have been made at the international discussion panel of the 3rd Asia-Netherlands Water Learning Week in Delft, The

Netherlands, involving five experts from Vietnam and 14 experts from other nations (Bhutan, Indonesia and the Netherlands). The characteristics of the LA are compared with the characteristics of social learning processes in the Working Group in Can Tho to identify potential ways of integration. The analysis of strengths and weaknesses of both concepts can identify missing elements of the LA, which are feasible to integrate in the WG and thus improve social learning processes in Can Tho.

The institutional context of climate change adaptation in Can Tho is fundamentally different from the context in which the LA concept is developed, because many of the current institutional systems in Vietnam are remnants from a regime that is characterized by strong top-down governing authorities. In Figure 1 it is shown that the institutional context shares a similar scope with group work in the form of an LA inside a purely governmental framework. Hence, there was a need to conduct an extensive stakeholder analysis to gain insights into what aspects of LAs are likely to work for the purpose of climate change adaption in the form of flood risk mitigation amongst a variety of stakeholder groups. This stakeholder analysis was based on the insights from semi-structured face-to-face interviews, which were conducted with 31 representatives from governmental bodies, companies, social associations, universities, and research centers. The institutes are either private-public or pure-public and supervised by either ministerial or departmental branches according to their levels, and international project partners of organizations that were involved with water management (sewage, water infrastructure, flood, etc.) and spatial planning in Can Tho and Ho Chi Minh City. The recurrent themes of each of the interviews were: the role and scope of responsibility of the interviewee, the flood risk situation in the city, existing and desired stakeholder collaboration, and particularly the willingness to cooperate with other stakeholders. Within these interviews, there were 16 members of the Climate Change Working Group in Can Tho, who were asked in more detail about the WGs' procedures, experiences and suggestions for improvements. The data analysis was executed by a focus on the problems, where difficulties and identified underlying problems within the WG were met with suggested solutions. Several solutions exhibit characteristics of the LA and for a further analysis of their feasibility a COM-behaviour analysis by Michie *et al.* (2011) was
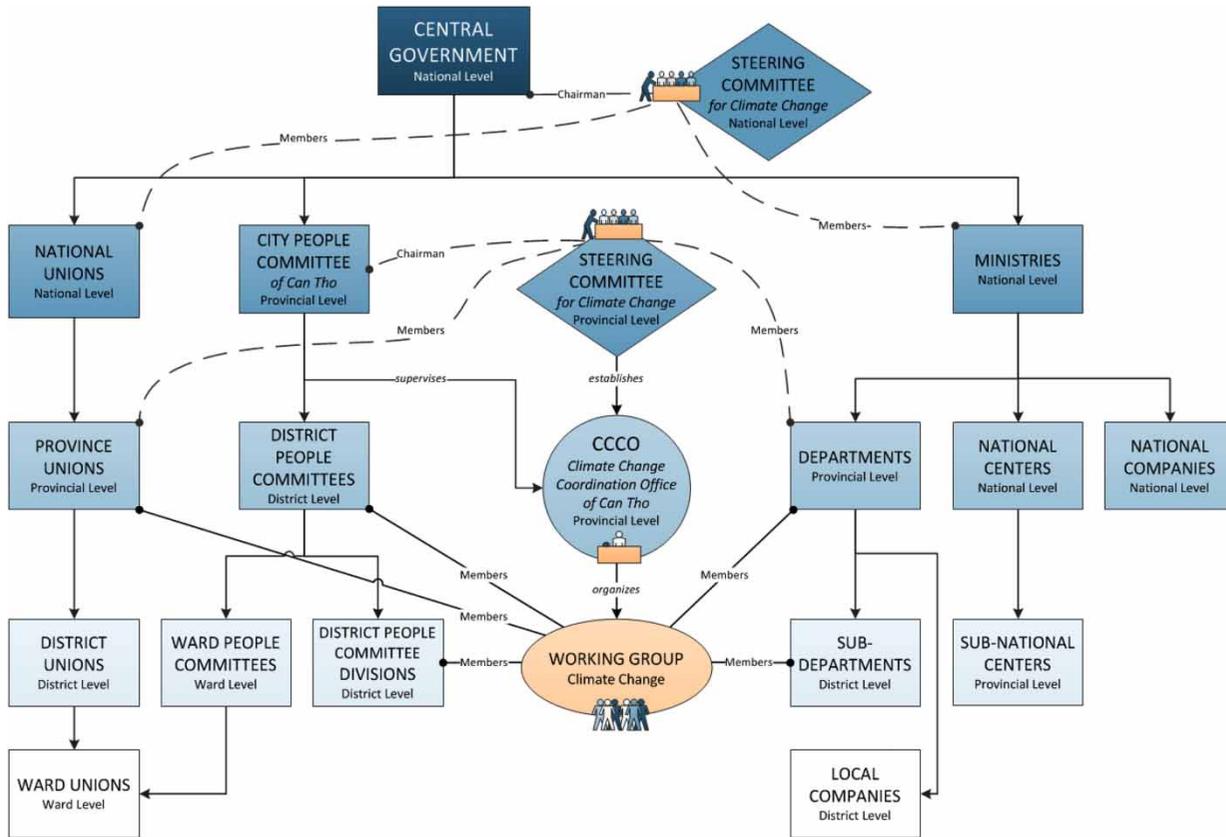
Figure 1 | The governance structure of climate change adaptation with a focus on the Working Group for Climate Change in Can Tho, Vietnam. The different contrasts per row may not show the official hierarchy level, however the levels represent where horizontal information sharing is possible. The Steering Committees can be temporarily limited, so they are graphically not bounded in the hierarchy.

undertaken. In this, WG members were listed with their capability (C), opportunities (O) and motivation (M) regarding a social learning process for flood risk improvements. In addition, comparisons between feasible exchanges and supports have been made to analyze a potential change in the members' future behaviour.

RESULTS

Climate-change related research projects exist in Vietnam, but are aborted in the actual implementation, which can be an indication of missing or lacking social learning procedures in the planning processes. Two different types of social learning were identified regarding climate change adaptation. The Dragon Institute, a research institute for climate change of the University of Can Tho (included under sub-national centers in

Figure 1), is cooperating with other faculties and universities. They set up small research projects and organize meetings to exchange their knowledge with each other (Can Tho University 2011). This can be described as Collaborative Research, according to the definition of Katz & Martin (1997). The Climate Change Working Group is an organized discussion platform for climate change issues in the province of Can Tho, in collaboration with involved stakeholders. Stakeholders and external experts discuss topics and potential solutions which are determined by a high-level institution of the province in the form of the People's Committee and the Steering Committee for Climate Change of Can Tho (Figure 1). The WG has three different participation instruments in the form of meetings which are organized and lead by the CCCO, where on different horizontal levels information is shared. The first form is the common WG meeting. Typically it includes a presentation by an expert

and a discussion for two hours about an issue relevant to the assembled group of around 25 main stakeholders. The second form is a small-scale workshop or training exercise, which is organized for 12 stakeholders of similar institutional status over a weekend. Finally, the third form is a 'Learning and Sharing Dialog', a huge information event which takes the form of conferences with possibly hundreds of stakeholders for a day.

The Climate Change Working Group was established by the Climate Change Coordination Office in 2011. Currently it consists of 26 stakeholders, among whom 16 have been interviewed, including several government branches selected by the People's Committee of Can Tho City, with the mandate to develop the Climate Change Resilience Action Plan for the time period 2010–2030. Therefore the impacts of climate change have been addressed in the city, and solutions for climate change mitigation and adaptation have been developed. Up to 2015 the project was in the first phase of planning and building climate change knowledge, and through meetings with discussions, training workshops and conferences, all stakeholders are updated. The second phase will concentrate on building the planned structures to 2030 (CCCO 2014). Developments in the WG and information are exchanged among the three established CCCOs of Vietnam in Da Nang City, Binh Dinh Province, and Can Tho City (Ha 2013; CCCO 2014).

Within the context of Vietnam's politics and bureaucracy, the strength of the WG lies in its formal set up. It enables participation of the stakeholders regulated by the government. All stakeholders are governmental actors, which have a common understanding of information sharing and working procedures. The implementation of the Climate Change Coordination Office provides a platform that coordinates social learning procedures and serves as a hub for personal contact among stakeholders. It sets up an individual WG for a specific area and problem statement, and plans large projects with international donors to be implemented within the legal framework in accordance with determined institutional responsibilities.

Through analysis of the institutional context it is obvious that a balanced inclusion of stakeholders outside the government is not possible. Most of the represented stakeholders have a similar power level, which allows only horizontal information sharing. Further surveys and COM-behaviour

analysis of the WG show that because of the determined participation of high-level institutions, stakeholders are less motivated to exchange knowledge or to have a dialogue about problems and solutions with each other to develop win-win outcomes. The experts involved are more likely to be presenting their individual research than conducting research together. Another weakness is the very high expectations of scientific knowledge brokers (experts), who are expected to have climate change scientific specialization and credentials from reputable universities. In a conventional research approach, scientists are involved through a tender process, conduct independent research and share results upon completion with the LA, which disseminates the results. This implies competition and selection of researchers who are not gathering for a dialogue or knowledge exchange with other stakeholders in an action-based research approach. Experience-based knowledge is basically not accepted, and therefore stakeholders do not recognize themselves as experts. Formal settings can develop big plans but not small and innovative solutions (CCCO 2014). Potential solutions for additional vertical information sharing in the hierarchical level are embedded in the form of reports, which are collected by the representative stakeholders. However, this leaves out the personal discussion and feedback with the lower levels of the process.

DISCUSSION

The above-mentioned characteristics, strengths and weaknesses of the LA and WG are compared and reveal similarities and differences between both concepts. They are illustrated in the following figures: Figure 2 (characteristics), Figure 3 (strengths) and Figure 4 (weaknesses) with their main elements, and sorted by their similarities followed by their differences.

The comparison of the general characteristics in Figure 2 shows that the Climate Change Working Group can be described as an LA. The WG is similar to a discussion platform for a tailor-made project in collaboration with stakeholders from different institutions and areas of responsibilities, which creates dialogues with different kinds of knowledge and levels, and evolves projected solutions together. It involves several forms of

General Characteristics

	Learning Alliance	Working Group

Commonalities	- Discussion platform for a specific project
	- Participation of various stakeholders at local and regional level
	- Learning culture aspects
	  * Research to discover understanding of each other
	  * Building of capacity to enhance stakeholders' awareness and capabilities
	  * Application of the learning process to enhance practical outcomes
	- Creates knowledge through exchange
	- Mechanism to address institutional levels
	- Includes several participation instruments	

Purpose	- Working together on agreed underlying problems	- Working together on determined problems
Knowledge	- Factual and impersonal, social and normative, and experience based on skills	- Factual and impersonal, social and normative
Information	- Horizontal and vertical information sharing	- Mainly horizontal information sharing
Research	- Conventional research approach (or) Action research approach	- Conventional research approach
Set ups	- Formal set up with more controlled, formal and occasional interactions (or) Informal set up with multiple-channel and more uncontrolled exchanges	- Formal set up with controlled, formal and occasional interactions
Focus	- Focus on creating win-win solutions	- Focus on developing solutions for problems defined by higher levels
Solutions	- Contests and evolves potential large and small scale solutions (or) Finds new innovative solutions	- Develops potential large scale solutions
Extension	- Can have an 'action' extension via learning by an example in practice	- No 'action' extension

Figure 2 | Comparison of the Learning Alliance's and Working Group's general characteristics.

participation instruments with stakeholders from different areas of specializations or power levels to combine different kinds of knowledge. Institutional levels are addressed and improve their understanding of each other. Through the concentration of the project topic, processes of identification and adaptation are speeded up (Butterworth *et al.* 2011). The learning aspects involve a research phase done by scientific experts, a phase of building capacity to enhance awareness and capabilities,

followed by an implementation phase for the practical outcomes. Out of these different strategies, solutions can be developed in a short time. Hence it is also a very time intensive procedure. Experts are mainly selected by economic criteria through tender processes and business stakeholders are difficult to involve without contracting them. Both social learning forms lack integrated data assessment (CCCO 2014). Due to their structure and coordination they are able to share their

Figure 3 | Comparison of the Learning Alliance's and Working Group's strengths.

learning and practice experiences with others in different countries or provinces. Finally, both are not recommended for an emergency case event, which needs quick execution.

However, there are important differences as shown in Figure 2 and in-depth differences which can be derived from Figure 3 and Figure 4. The analyzed WG employs a very formal approach to interaction. The topics and the participating stakeholders are therefore mostly determined by the high-level institutions at the provincial level. Instead of discovering underlying problems as in an LA, the WG works on established problems. Stakeholder motivation is needed in an LAA for participation and in a WG for exchange and dialog. A balanced range of stakeholders outside of governmental actors is not involved and most of the representatives of the stakeholders have similar power to each other, which allows only horizontal information sharing. The interactions of the WG are always controlled, formal and infrequent. The experts involved more often present their individual knowledge via a conventional research approach than by constructing knowledge together in an action-based approach. The effectiveness of this exchange of knowledge is also limited to the horizontal level, but this and the common governmental background allow a better understanding of behaviours and procedures within the stakeholders. Furthermore, there is a lack of a win-win perspective in the WG where the different interests of stakeholders can be met all together. The learning process is characterized by limited knowledge exchange among stakeholders, and learning is presented through examples in theory but not in practice. Vertical information sharing is lacking with regard to feedback. Next, the WG mostly focuses on developing defined potential and large solutions, although innovative, small and feasible solutions are more needed (CCCO 2014). Despite that, the administrative framework enables uncomplicated implementation in the legal framework and allocation of the institutional responsibilities and resources required to proceed. Additionally, the CCCO is an integrated and adaptive institution that controls the procedures and improves the outcomes of the WG, and can act like an LA champion in stakeholder procedures. In the evaluation process it is evident that the LA/LAA lacks sustainable and complex indicators for decision makers, while the WG needs to develop more complex solutions.

The concept of the LA could contribute in the context of Can Tho with additional information sharing in the vertical hierarchy from top to bottom and vice versa. This could be possible through joint meetings with hierarchy members

Weaknesses

	Learning Alliance	Working Group
Commonalities	- Time intensive - Conventional research approach lacks of active engagement of experts - Experts mostly involved via competitive tendering process - Business stakeholders involved via contract commitment - Needs integrated assessment of data - Not recommended for an immediate crisis	
Stakeholders	- Needs a balanced range of stakeholder involvement	- Balanced range of stakeholder involvement is only possible within governmental institutions
Participation	- Voluntary participation needs motivation to participate	- Determined participation needs motivation to exchange knowledge or to create a dialog
Knowledge	- n.a.	- Neglects experience-based knowledge
Information	- n.a.	- Barriers in vertical information sharing create lack of feedback
Set ups	- Informal set up; solutions can be difficult to implement by law	- Formal set up; no development of small scale or innovative solutions
Win-Win	- Needs good coordination to develop win-win constellations	- Needs stakeholder awareness for win-win outcomes and good coordination
Solutions	- Needs more sustainable and complex indicators for the solutions	- Needs more feasible, innovative and complex solutions

Figure 4 │ Comparison of the Learning Alliance's and Working Group's weaknesses.

from the low and high levels, or in the form of feedback from the higher level with suggestions and expectations to encourage proposals from the lower level. Incentives besides enforced participation of stakeholders could increase their motivation, and hence their activity. Furthermore it can create a dialog, where the exchange of knowledge and problems are feasible to create a collaborated winning outcome. The primary barrier seems to be in the establishment of a win-win perspective to develop a WG which will function together as a learning group, as in an LA. Therefore, it may be difficult to open the problem statement with agreed underlying problems, because it requires further time-intensive control procedures by high-level administrations. On the other hand, this flexibility could enable the WG to also evolve small scale and innovative solutions, which can be generated by the involvement of experts in the long-term learning

and dialog process. Furthermore, the extension of an action approach (to an LAA) through a practical and local-level demonstration model can explore the advantages and disadvantages of the theoretical concept. This may identify more positive solutions and problematic perspectives for the stakeholders that have not been established before, and give opportunities to modify the concept in time. An optimized planning process allows available resources to be deployed better, and may compensate for the additional costs of the action approach.

Further research and experience by the coordinating CCCO is needed for several improvements to stakeholder participation in the WG. To create incentives, beside the regulation by the People's Committee of Can Tho City, the capabilities, opportunities, or threats and motivation of the stakeholders regarding the LAA/WG topic, and

the stakeholder nexus, have to be discovered, for example via the COM-behaviour analysis from Michie *et al.* (2011). This describes the source of behaviour as the combination of capability, opportunities, and motivation. The connections among them are that the capability and opportunity can influence motivation, while all three components can shape behaviour and vice versa. Other ways of increasing the activity, dialogue and knowledge exchange are provided by the members themselves, but more research is necessary on available resources, the feasibility of enforcements and to find the best possible mixture of small alterations with the greatest positive effect. Large solutions as outcomes are preferred due to their 'easier' implementation through provided funding, lighter administration and allocation of financing, administration and responsibility. Knowledge is needed of how to simplify implementations of innovative and small solutions (CCCO 2014).

Extrapolation to other countries

Through the political administrative background in Vietnam it is not likely feasible to break down the formal approach of an LA/WG to an informal approach with multiple-channels and more uncontrolled exchanges. This may not be a limitation in other developing countries. Despite that, an understanding of the given social learning mechanism of each country is needed. An LA has to be tailor made for each context, and it has to combine the participation, dialogue and learning aspects of different stakeholders. These stakeholders have to be identified in a specific stakeholder analysis (Pouloudi 1997). Because of the differences in stakeholders, social learning background, and proposed outcomes it is difficult to extrapolate. A balanced range of stakeholders can achieve a community driven plan, which is feasible in execution, but it needs the involvement of governmental institutions to ensure that the plans can be implemented. A general extrapolation for other countries can be the strategic focus to the learning aspect. This needs participation, an active dialogue and knowledge exchange by the stakeholders. To avoid complications and to help understanding and to overcome a lack of experience, an action approach (like a LAA) will be supportive. This approach in practice is a convincing tool for countries

with typical top-down governance that can learn from good practical examples of a bottom-up approach. But the LA base of a 'trust and shared vision' is not obvious in developing countries and needs a step-by-step progress. Sustaining an LA/LAA is also a challenge and needs an assessment which explores the personal efforts and interests of the members. For that a 'champion' with experience in stakeholder procedures can play a critical role in initiating and driving processes of change (Pielke *et al.* 2007; Taylor 2008; Herk *et al.* 2011). For a better implementation of the LA/LAA model and leapfrogging of developing countries to this form, more detailed earlier mistakes (made in developed countries) of setting up an LA have to be shown and analyzed.

CONCLUSIONS

The study set out to explore the applicability of the concept of Learning Alliances in Vietnam. One key finding of the study is that there is a mechanism of inter-stakeholder communication in the form of the Working Group. On the surface these look very similar to the social learning form of an LA that has been tried out in many other countries (like the Netherlands, the UK and Australia), because it also provides a platform of horizontal exchange of ideas, communication and learning. However, close examination of the WG reveals many differences. Involved stakeholders are only governmental, it lacks a win-win perspective and consequent motivation for dialogue and knowledge exchange, and finally it lacks an interest in small and innovative solutions. On the positive side, the attendance of various stakeholders is enforced by the bureaucracy, therefore the sustainability of the WG is fairly well ensured. This is a primary challenge for many LA/LAAs. Because of this formal learning set-up it has a high degree of legitimacy. Possible means to integrate positive elements of a LAA into the WG arrangement are as follows.

Vertical-hierarchical information sharing through feedback on received reports and suggestions from the lower level by higher level institutions or staff; the creation of win-win perspectives in order to promote an open dialogue and to improve the exchange of knowledge; the coordination office could discover win-win perspectives through

its personal connections to the stakeholders; and an extension of a practice action approach, which needs more flexibility of the procedure to become more adaptive for the discovery of different problem statements and hence for innovative solutions.

The extrapolation to other developing countries needs a tailor-made design based on the local conditions and a focus on the learning and exchange aspect with its needed motivation element for the stakeholders. Champions with experience in social learning participation processes play an important role in brokering knowledge and lead these procedures. Balanced stakeholder participation and an action approach are good bottom-up approaches for top-down dominated countries, and can help the vertical exchange of visions and ideas. Based on the insights of the case study of Can Tho City we conclude that the existing literature on social learning should be enriched by other forms of social learning methods in developing countries. Additionally, more details about the LA/LAA's development within their learning procedures and occurred problems are needed to enable a fair comparison of developing countries' structures and to submit the recommended leapfrogging.

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