Contextualising Integrated Coastal Zone Management

The nature of social-ecological systems

Bieke Abelshausen

Cùng với Việt Nam
Contextualising Integrated Coastal Zone Management

The nature of social-ecological systems

Bieke Abelshausen

Promotors: Prof. Dr. Tom Vanwing
Prof. Dr. Wolfgang Jacquet

A thesis submitted in fulfilment of the requirements for the degree of PhD in ‘Pedagogische Wetenschappen – richting Agogische Wetenschappen’
Faculty of Psychology and Educational Sciences, Department of Educational Sciences
Adult Educational Sciences
Vrije Universiteit Brussel

October 2016
## Dissertation Committee

### Promotors

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>Faculty</th>
<th>University</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prof. Dr. Tom Vanwing</strong></td>
<td>Department of Educational Sciences</td>
<td>Faculty of Psychology and Educational Sciences</td>
<td>Vrije Universiteit Brussel</td>
<td>Belgium</td>
</tr>
<tr>
<td><strong>Prof. Dr. Wolfgang Jacquet</strong></td>
<td>Department of Educational Sciences</td>
<td>Faculty of Psychology and Educational Sciences</td>
<td>Vrije Universiteit Brussel</td>
<td>Belgium</td>
</tr>
</tbody>
</table>

### Exam Committee

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>Faculty</th>
<th>University</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prof. Dr. Koen Lombaerts (Chair)</strong></td>
<td>Department of Educational Sciences</td>
<td>Faculty of Psychology and Educational Sciences</td>
<td>Vrije Universiteit Brussel</td>
<td>Belgium</td>
</tr>
<tr>
<td><strong>Prof. Dr. Ludwig Triest</strong></td>
<td>Department of Biology</td>
<td>Faculty of Sciences</td>
<td>Vrije Universiteit Brussel</td>
<td>Belgium</td>
</tr>
<tr>
<td><strong>Dr. Pieter Meurs</strong></td>
<td>Department of Educational Sciences</td>
<td>Faculty of Psychology and Educational Sciences</td>
<td>Vrije Universiteit Brussel</td>
<td>Belgium</td>
</tr>
<tr>
<td><strong>Prof. Dr. Nguyen Hoang Tri</strong></td>
<td>Centre for Environmental Research and Education</td>
<td>Hanoi National University of Education</td>
<td>Vietnam</td>
<td></td>
</tr>
<tr>
<td><strong>Dr. Fred Mednick</strong></td>
<td>John Hopkins University School of Education</td>
<td></td>
<td></td>
<td>United States</td>
</tr>
</tbody>
</table>
Acknowledgments

In a quán cà phê with a cà phê sữa Sàigòn, I start the process of writing my PhD with the acknowledgements. Vietnam, my mistress... my nemesis... the indescribable feeling of coming home to a place you had never been before. Vietnam is the place where I lost my footing in life, the place I go to get lost. In Vietnam, I need to acknowledge many people; I should acknowledge all 90 million. I especially acknowledge the communities in which I work and live, for opening their minds and their homes. They teach me the most.

I want to acknowledge Prof. Dr. Nguyen Chu Hoi and Prof. Dr. Nguyen Hoang Tri for their expertise, support and opportunities; for their trust. I acknowledge Mrs Nguyen Thu Hue and Mrs Ho Thi Yen Thu for their inspiring work and commitment and Mrs Thuy Tran Thi Hong and Dr. Chu Manh Trinh for making me part of the Cù Lao Chàm MPA team. I give special acknowledgement to my friends and colleagues, Mr. Thao Le Ngoc and Mr. Nguyen Thanh Huy for giving me Cà phê.

Vietnam is the place that brought me the Vrije Universiteit Brussel through Mr. Nguyen Viet Dung, the man who inspired me, among other things, to study Human Ecology. In Belgium, I acknowledge my promotors; Prof. Dr. Tom Vanwing and Prof. Wolfgang Jacquet. They are the most rewarding and challenging combination a PhD student can have. I acknowledge Prof. Dr. Tom Vanwing for making everything relevant; for being a cá heo nực ngot song Mê Kông, and I acknowledge Prof. Dr. Wolfgang Jacquet for making everything irrelevant. Together they are one promoter, a LOCI.

I acknowledge Emmeline Byl; I hope I can live up to her. I also acknowledge Dr. Pieter Meurs, a philosopher. Especially, I acknowledge Françoise Decupere, the person who told me to go to the sea.

And now, the path of life has brought me to finish this brief acknowledgement on the train, somewhere between Brussels and ‘the middle of nowhere’. A journey I take with pleasure as it brings me the Vrije Universiteit Brussel, where I need to acknowledge my colleagues. They were (are) there for joy, support, comfort and challenge. And it brings me home where I acknowledge Kris; together we made the world our home.

I acknowledge all the people that have crossed my path; Thank you for acknowledging me.
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>Discussion and conclusion</td>
<td>34</td>
</tr>
<tr>
<td>5.1.</td>
<td>Practical and policy recommendations</td>
<td>34</td>
</tr>
<tr>
<td>5.2.</td>
<td>Empowerment</td>
<td>35</td>
</tr>
<tr>
<td>5.3.</td>
<td>Formal and non-formal structure</td>
<td>35</td>
</tr>
<tr>
<td>5.4.</td>
<td>Tacit and explicit knowledge sharing</td>
<td>36</td>
</tr>
<tr>
<td>5.5.</td>
<td>Linking bi-directional knowledge sharing and participatory resource management</td>
<td>36</td>
</tr>
<tr>
<td>5.6.</td>
<td>Decrease fragmentation</td>
<td>36</td>
</tr>
<tr>
<td>6.</td>
<td>Limitations and future research</td>
<td>37</td>
</tr>
<tr>
<td>7.</td>
<td>Conclusion</td>
<td>38</td>
</tr>
<tr>
<td>8.</td>
<td>Acknowledgements</td>
<td>38</td>
</tr>
<tr>
<td>References</td>
<td></td>
<td>39</td>
</tr>
<tr>
<td>Appendices</td>
<td></td>
<td>40</td>
</tr>
<tr>
<td>Appendix A</td>
<td></td>
<td>40</td>
</tr>
<tr>
<td>Appendix B</td>
<td></td>
<td>41</td>
</tr>
<tr>
<td>Chapter 3</td>
<td>Participation and knowledge sharing</td>
<td>42</td>
</tr>
<tr>
<td>Stakeholder participation and knowledge sharing in Integrated Coastal Zone Management in Vietnam</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Abstract</td>
<td></td>
<td>42</td>
</tr>
<tr>
<td>1.</td>
<td>Introduction</td>
<td>43</td>
</tr>
<tr>
<td>2.</td>
<td>Methods</td>
<td>43</td>
</tr>
<tr>
<td>3.</td>
<td>Results</td>
<td>43</td>
</tr>
<tr>
<td>3.1.</td>
<td>Knowledge sharing</td>
<td>44</td>
</tr>
<tr>
<td>3.2.</td>
<td>Social learning as a process or outcome?</td>
<td>44</td>
</tr>
<tr>
<td>3.3.</td>
<td>Social learning from an individual, network or system perspective?</td>
<td>45</td>
</tr>
<tr>
<td>3.4.</td>
<td>Social learning and participation</td>
<td>46</td>
</tr>
<tr>
<td>3.5.</td>
<td>Social learning, change and experience (the emergence of co-management)</td>
<td>46</td>
</tr>
<tr>
<td>4.</td>
<td>Conclusion</td>
<td>47</td>
</tr>
<tr>
<td>5.</td>
<td>Acknowledgements</td>
<td>47</td>
</tr>
<tr>
<td>References</td>
<td></td>
<td>48</td>
</tr>
<tr>
<td>Participation throughout the decades: how the zeitgeist influences both theory and practice – A case study</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Abstract</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>1.</td>
<td>Introduction</td>
<td>51</td>
</tr>
<tr>
<td>2.</td>
<td>Methods</td>
<td>51</td>
</tr>
<tr>
<td>3.</td>
<td>Results</td>
<td>52</td>
</tr>
<tr>
<td>3.1.</td>
<td>Participation from the 1960s until now</td>
<td>52</td>
</tr>
<tr>
<td>3.2.</td>
<td>Participation in Vietnam</td>
<td>53</td>
</tr>
<tr>
<td>3.3.</td>
<td>The case of the Locally Managed Marine Area</td>
<td>54</td>
</tr>
<tr>
<td>4.</td>
<td>Recommendations</td>
<td>54</td>
</tr>
<tr>
<td>5.</td>
<td>Conclusion</td>
<td>55</td>
</tr>
<tr>
<td>6.</td>
<td>Acknowledgements</td>
<td>55</td>
</tr>
</tbody>
</table>
List of figures

Figure 1 Administrative Map Vietnam: Thừa Thiên Huế, Quảng Nam and Khánh Hòa (Vietnamese Government, 2016) ........................................................................................................................................ 6
Figure 2 Methodological framework ........................................................................................................................................ 8
Figure 3 Qualitative labelling analysis structure: ICZM in Vietnam includes both participatory and non-participatory resource management .................................................................................. 28
Figure 4 Qualitative labelling analysis structure: Longitudinal study in Integrated Coastal Zone Management ................................................................................................................ 99
Figure 5 Combinatory top-down - bottom-up approach (red) and the "zig-zag approach" .................................................. 100
Figure 6 Confirmatory factor analysis on 3-factor solution. .............................................................................................................. 120
Figure 7 Four-Notion Framework ............................................................................................................................................... 147
List of tables

Table 1 Stakeholder scope in integrated coastal zone management in Thừa Thiên Huế .................. 27
Table 2 Definitions of sustainable development and its associated references in relation to categories of research in Integrated Coastal Zone Management in Vietnam and referencing on sustainable development or sustainability .......................................................... 68
Table 3 Interpretation to the six umbrella dimension of context in sustainable development ........ 76
Table 4 Stakeholder sample in Integrated Coastal Zone Management in Vietnam 2010-2013 ............ 98
Table 5 Overview of respondents organised per research area and per village (Intended and Actual respondents) ......................................................................................... 115
Table 6 Factor loadings of EFA (5), EFA (3) and CFA (3). ............................................................... 119
Table 7 Odds ratios on decision making in everyday village life and within the management approach 123
Table 8 Overview of qualitative studies, mixed method research and quantitative studies ............ 140
Chapter 1: Introduction

Abstract

The introduction chapter of the dissertation titled: “Contextualising Integrated Coastal Zone Management – The nature of social-ecological systems” provides a concise overview of the theoretical and research framework from, on and within which this dissertation is placed. Two conceptualisations lie at the basis of these frameworks; participation and knowledge sharing. The ontology of social-ecological systems entails the identification of 5 underlying notions or discourses: the oxymoron sustainability, the sustainable development discourse, zeitgeist, and the notions of power and change. The theoretical framework of this dissertation explicates the interpretation of knowledge sharing and participation within environmental management as stakeholder participation, with the added complexity of the concept “stake”. Knowledge sharing is presented as an interaction with this stakeholder participation. Both represent the theoretical basis for decision making processes in management systems. A concise insight of Integrated Coastal Zone Management is presented, specifically the interpretation given to it in Vietnam. The research framework entails a description of the research context, i.e. Vietnam. Brief insight is provided in regional differentiations to provide as background to the determination of the research areas. The specificity of fishing communities is explicated through the traditional village organisation of ‘Van Chai’. The structure of the dissertation provides a brief overview of various research phases, the associated methodologies and the sequence by which insights were gained.
1. Dissertation summary

The dissertation titled: “Contextualising Integrated Coastal Zone Management – The nature of social-ecological systems” provides a fundamental insight in the process of answering a developmental managerial question. The framework of the dissertation entails on the one hand Integrated Coastal Zone Management and on the other hand development cooperation. The conceptualisations that are key within this dissertation are participation and knowledge sharing, with the additional dimension of sustainable development or sustainability. The rationale for the dissertation’ research is based on research conducted in 2010 in the province Thua Thien Hue in Vietnam. This research comprises qualitative research conducted via semi-structured interviews and analysed using coding analysis. The rational for further research in the form of a PhD dissertation is based on the need for further empirical research in the complexity of on the one hand participation and knowledge sharing in Integrated Coastal Zone Management and on the other hand in the additional complexity of working within a management framework and within development cooperation. The research conducted in 2010 revealed that a differentiation exists between theory and practice which resulted in the conjecture that a need exists to adapt Integrated Coastal Zone Management and its associated concepts to the context of Vietnam.

Initial literature reviews, combined with the research conducted in 2010 and preliminary insights from additional qualitative research conducted in 2013 identified that participation and knowledge sharing within natural resource management is often encapsulated in stakeholder participation. By reviewing the origin and evolution of participation throughout several decades it became clear that interpretations and conceptualisations are influenced by the zeitgeist in which they appear. This resulted in the following hypothesis: “if the zeitgeist in which concepts are developed differs from the one in which these are implemented, difficulties for implementation could arise”.

The evolution Integrated Coastal Zone Management underwent, and which followed a similar pattern as international development agenda’s, introduced the concept of sustainable development. A systematic review into the concept of sustainable development and sustainability revealed a lack of consensus on the interpretations and conceptualisations. Furthermore, the questionable merit of the measurability of these concepts brought forth the need for in-depth analysis of what these concepts entail and how they are interpreted within Integrated Coastal Zone Management in Vietnam. The reason for this need is bi-fold; on the one hand better understanding of the concept is required for a conceptual consensus and on the other hand a methodological need for a frame of reference is necessary for further research purposes. The systematic review revealed that firstly a differentiation exists between sustainability and sustainable development and that the use of these interchangeably confuses both research and management. Furthermore, a highly ecological perspective and an under-representation of all associated disciplines were identified.

The first empirical data gathered made use of the same methodological rigour as the initial research conducted in 2010, namely semi structured interviews analysed via coding analysis. This choice is made to allow for comparability over time in the form of a longitudinal study. Two different research areas were chosen for this
PhD dissertation, differing from the region included in the preliminary research. The choice for comparability limited the stakeholder inclusion criteria and therefore additional focus groups were conducted to include local resource users. For the purpose of comparing in the longitudinal study these were however not included. The study revealed that a shift in power occurred, resulting from the further implementation of Vietnam’s decentralisation policy. Concerning the differentiation between theory and practice, the influence of power became more apparent subsequent the shift in power. Specifically, this created the additional insight that the relationship between power and practice is more apparent than the relationship between power and theory.

Furthermore, in 2010 a combinatory top-down – bottom-up participatory approach was presented as an answer to the prevailing top-down governance in Vietnam. Evolution over time however revealed that in practice a zig-zag approach was implemented. The main differentiation lies in the notion of ownership. In the zig-zag approach ownership remains with non-governmental management bodies or universities as a result of the need for government independence and the need for more efficient governance while at the same time respecting the traditional hierarchical governance structure.

The qualitative research provided the first insight that social and cultural characteristics influence the decision making processes. To further examine this influence as a possible explanatory factor, questionnaires were conducted. Via the use of Odds ratios, estimations were made on the probability of decision making processes in everyday village life influencing decision making processes in management approaches. The questionnaire revealed that both the participation rate and the manner in which decisions are made are influenced by the context of the communities. A clear expression of this could be found in the existence of a social organisation according to ‘Van’; ‘Van’ being a cultural legacy based on trust and respect and expressed in an organisation according to for example kinship. In both research areas these ‘Van’ are specified as Van Chai; organised according to the main livelihood activity, specifically according to the predominant fishing gear used. The influence of these Van Chai expresses that the manner in which decisions are made in everyday village life, and the presence or absence of these Van Chai influences the manner in which decisions are made in the management process.

In order to grasp the interdisciplinary or even transdisciplinary nature of this dissertation and of Integrated Coastal Zone Management, a realist review was conducted. This review provided a methodological opportunity to bridge various methodological approaches and include the context in which the research itself is framed. The review is based on context specific research experiences, the theory versus practice debate, participation and knowledge sharing conceptualisation and practices, and the sustainability – sustainable development context. Analysis resulted in the emergence of four underlying notions which could possibly serve, in case further research is conducted, as a guiding mechanism for Integrated Coastal Zone Management with a strong sustainability dimension. The four notions are an expression of development cooperation, social-ecological urgencies and time-perceptions on sustainability. The four notions being ‘willingness’, ‘capitals’, ‘pragmatism’ and ‘desirability’. ‘Willingness’ is expressed on the one hand as willingness for interdisciplinarity and on the other hand as willingness for participation and knowledge sharing. ‘Capitals’ refers to a shift from a needs-based approach that is inherently problem oriented to a capitals-based approach that builds from the existing
social-ecological system. ‘Pragmatism’ places itself in the time-sensitive nature of environmental management wherein social and ecological urgencies trump the desired social change processes and the gaps in existing knowledge, understanding and practices. ‘Desirability’, lastly, relates to the sustainability dimension in which the question needs to be asked which long-term and short-term interventions, if any, are desired.

2. Research framework

2.1. Vietnam

This dissertation is framed within the wider development cooperation agenda of the Flemish University Council, specifically University Development Cooperation (VLIR-UOS). The Socialist Republic of Vietnam is currently one of twenty partner countries of VLIR-UOS. Within the VLIR-UOS framework for Vietnam “inter- and transdisciplinary approaches, which explicitly include attention to social and human dimensions of facilitating change in areas of development that are otherwise dependent on scientific and technological expertise, are to be favoured” (Vissers and Lap, 2011, p.XV). It is within this framework and through the support of VLIR-UOS (VLADOC-scholarships) that this dissertation is written.

2.2. Coastal and Island communities in Vietnam

Regional differentiation – a brief history

Determining the origin of regional differentiation in Vietnam is problematized by the distortion of historiography by American neo-colonialists and party-sanctioned Vietnamese historians (Nguyen, 1999). The current overall consensus is that the onset for regional differentiation in Vietnam can be found in the 16th century struggle between two families, Trịnh and Nguyễn, respectively resulting in a North-South division (Ramsay, 2008). Pre-colonial Vietnam’s history is deemed to conclude with a differentiation in three regions: Tonkin, Annam and Cochinchina organised around the traditional centres of power in Vietnam, respectively Hà Nội, Huế and Sài Gòn (Tonnesson, 2011). Colonisation of Indochina started in the 16th century with the introduction of the French East India Company. The French gradually increased their range and power by taking part in wars between rival Vietnamese fractions and by 1925 the French ruled a region of about 30.000.000 encompassing Laos, North and South Vietnam and Cambodia (Ladenburg, 2007). In 1930, Ho Chi Minh founded the Indochina Communist Party; the Party’s guerrilla force, Viet Minh, put an end to the French reign in 1954, splitting the country into North and South. In 1956, the South Vietnamese president Ngo Dinh Diem starts a campaign against the Communist North after which the American support to the South increases, resulting in the United States involvement in the war after the Gulf of Tonkin incident in 1964 (Tonnesson, 2011). The North Vietnamese guerrilla, Viet Cong, and the North Vietnamese army start the Tet Offensive inaugurating the end of the Vietnam-American War. After the death of Ho Chi Minh in 1969 and the growing American domestic public opposition to the war, the American President Nixon begins the pull-out of US ground troops. The war comes to a close in 1975, two years after the official ceasefire agreement in Paris with the surrender by the South Vietnamese President Duong Van Minh. In 1976 the Socialist Republic of Vietnam is proclaimed. The post-reunification period is distinguished by a collectivisation period and the Đổi Mới era that started in the
1980s. Chính sách Đổi Mới entails an economic reform in which natural resources are considered a functional resource to achieve the goals of market economy.

**Coastal Central Vietnam**

The long history of the Vietnam nation and the resulting regional differentiation, nowadays finds its expression in all realms of the Vietnamese society. A Vietnamese proverb ‘Ăn Bắc, mặc Nam’ (eating as in the North, clothing as in the South) expresses this differentiation in everyday life. Currently Vietnam is divided into 3 regions; North, Central and South. Central Vietnam, Miền Trung is divided into 2 sub regions: North Central Coast, Bắc Trung Bộ, and South Central Coast, Nam Trung Bộ. The administrative organisation of the region encompasses six provinces in the North Central Coast; Thanh Hóa, Nghệ An, Hà Tĩnh, Quảng Bình, Quảng Trị and Thừa Thiên Huế, and eight provinces/municipalities in the South Central Coast; Đà Nẵng, Quảng Nam, Quảng Ngãi, Bình Định, Phú Yên, Khánh Hòa, Ninh Thuận and Bình Thuận. The division of Vietnam in various regions does not fall under the official administrative boundary policy of Vietnam. Various regions are incorporated in the Vietnamese governance structure dependent on the purpose of the division such as Economic Zones as set by the Ministry of Trade and Foreign Affairs. Officially Vietnam counts 28 coastal provinces under the Central Government.

**Fishing communities**

Fishery in Vietnam is characterised by small scale, multi species, multi-gear fishery utilizing traditional fishing techniques (Long, 2003). Fishing communities know a long tradition of stakeholders’ organisation based on mutual assistance (i.e. Van Chai) (Ruddle, 1998; Ho, 2015). The term ‘Van’ in Vietnamese means one village, or group of villages (Ruddle, 1998) or the organisation of persons according to their professions (Thong and Thieu, 2008). The term ‘Chai’ means “gear used by small-scale and artisanal fishermen” (Thong and Thieu, 2008, pp.1). In the central region of Vietnam a tradition of village erected shrines serve as a focal point for local fishery organisation; rules are transmitted orally through the generations (Ruddle, 1998). The Vietnamese proverb: ‘Phép vua thua lệ làng’, translated as ‘the Kings’ reign stops at the village gate’ lies at the basis of these traditional community based management systems (Nguyen and Ruddle, 2010). These traditional Van Chai were however subject to change consequently the turbulent Vietnamese history and the recent Chính sách Đổi Mới (Ruddle, 1998). ‘Van’ know various forms in Vietnam and comprise off the following organisational structures: water body based, kinship, profession, age, authority (Thong and Thieu, 2008): either a combination, one or all of these form the members of a ‘Van’. ‘Van Chai’ included in this research refer to ‘Van’ organised as a combination of all.

**Thừa Thiên Huế, Quảng Nam and Khánh Hòa**

The determination of research areas is based on a combination of accessibility, ecosystem comparability and management approach. The North Central province of Thừa Thiên Huế is chosen based on preliminary interviews with governmental and non-governmental stakeholders in Integrated Coastal Zone Management in Vietnam. As the research framework is set to participation and knowledge sharing theories and practices, the
choice for Thừa Thiên Huế is made based on it being a pilot site for Integrated Coastal Zone Management in Vietnam (Thang et al., 2011). Specifically, the inclusion of a co-management approach, although not referred to as such, in the pilot project allows for an in depth insight in participatory and knowledge sharing approach in Vietnam. The pilot project in Thừa Thiên Huế worked complementary with the Integrated Management of Lagoon Activities (IMOLA) project (FAO, 2008). The previous introduction of foreign actors in Thừa Thiên Huế allowed for increased accessibility as foreign researchers had already created opportunities for cooperation and permission. The IMOLA project was developed and implemented subsequent the first bilateral project, the
Vietnam-Netherlands Integrated Coastal Zone Management (VNICZM) project. Up till now, Thừa Thiên Huế is considered a success-story and is one of the most researched areas in Vietnam concerning participation and knowledge sharing practices in Integrated Coastal Zone Management. Even though, the introduction in Vietnam for this dissertation is initially made in Thừa Thiên Huế, the choice was made for two new research areas. This choice is based on the excessive amount of research in Thừa Thiên Huế which has led to respondent exhaustion (Ho, 2016), on the existing and embedded participatory approach and the exclusivity of this embeddedness within the wider Vietnamese coastal zone. In order to allow for comparability, the choice is made to remain within the central coastal region to eliminate skewness based on regional differentiation. For comparability reasons, the choice for management approaches encompassing predominantly coral reef ecosystems is made. This ecosystem approach differs from a lagoon approach, however as no other lagoon areas exist in the central region of Vietnam, this bias in comparability is accepted. Furthermore, the choice is made based on the management approach itself. A community based bottom-up, NGO supported approach is chosen to make a comparison with a government embedded, community-led approach. Specifically, this resulted in the choice being made for the Locally Managed Marine Area (LMMA) in Khánh Hòa province, Văn Hưng commune. The LMMA comprises the management of Ran Trao (coral reef) and is organised with the support of the Centre for Marine life Conservation and Community Development (MCD) and the Mangroves For the Future (MFF) project (Hien, 2004). The second research area is located in Quảng Nam and consists of the Cù Lao Chàm Marine Protected Area (CLC-MPA) and the Hoi An – Cù Lao Chàm Biosphere Reserve (HA-CLC – BR). Both the CLC-MPA and the HA-CLC – BR comprise the management of Cù Lao Chàm, an archipelago located about 15 km of the coast (Trinh and Brown, 2008). The choice for these two regions increased the complexity of accessibility in Vietnam. The LMMA is located approximately 70 km from the nearest large city and is not accessible for foreign visitors. Therefore, special permission for each research stay was needed and overnight stays were not allowed. Permission for CLC-MPA was easier in the sense that it is a well-known tourism destination and foreign visitors are allowed to stay overnight. Research permission is however complex due to the government regulations resulting from a military presence on Cù Lao Chàm.
2.3. Methodological framework

![Methodological framework diagram]

Figure 2 Methodological framework

2.4. Structure of dissertation

The dissertation is organised in seven chapters, following the chronology of insights and research phases. The introduction chapter (Chapter 1) comprises the research framework and provides a concise insight in the social, cultural, economic and ecological characteristics of Vietnam and in specific the three research areas.

Chapter 2 entails the rational of the dissertation based on preliminary research on participatory and knowledge sharing approaches to Integrated Coastal Zone Management in Vietnam. This preliminary research is conducted using qualitative methodology and analysis tools. Participation and knowledge sharing practices in Integrated Coastal Zone Management have been adopted in Vietnam since several decades. Various success-stories have been created based on pilot studies. Structural embedding of these approaches and of Integrated Coastal Zone Management itself is however lacking. Participation and knowledge sharing, or co-management as it is referred to by stakeholders, is considered a tool to achieve the various goals of Integrated Coastal Zone Management programmes. The preliminary research reveals that a gap exists in the alignment of theory and practice. The understanding that stakeholder participation is linked to notions as power, change and willingness is limited. Research on participation and knowledge sharing is limited to research with the aim of methodological development and managerial insights. Research into the underlying process that steer or influence participation and knowledge sharing and thereby the associated methodologies and practices is however almost non-existent. The gap between theory and practice is identified as a gap between ‘Western’ developed theories and practices, and the implementation of these in the Vietnamese context. Chapter 2 thereby provides the hypothesis on which this dissertation is based: “Do participation and knowledge sharing
approaches in Integrated Coastal Zone Management need to be “translated” from the context in which they are developed to the context in which they are applied?’

Chapter 3 is divided in two sections. The first section provides a concise insight in how participation and knowledge sharing are interpreted within environmental management in general and Integrated Coastal Zone Management in specific. A literature review on these concepts revealed that participation and knowledge sharing within environmental management is most often linked to the concept of social learning. The inclusion of social learning in the conceptualisation of Integrated Coastal Zone Management and the increase in implementation experience resulted in the creation of the concept co-management. A decision making approach that is considered to move beyond participation and knowledge sharing as tools for management. Co-management itself is seen as an approach that allows the inclusion of stakeholders in all levels of decision making both in the development and the implementation phase. The second section comprises a literature review into the origin of participation that is illustrated with examples from the qualitative research (chapter 2) to explicate the Vietnamese context. The literature review revealed that the concept of participation is subject to the zeitgeist in which it is developed and the zeitgeist in which it is applied. This resulted in the understanding that participatory approaches cannot merely be copied but need to be translated to the context in which they are applied.

Chapter 4 resulted from the understanding that participation and knowledge sharing approaches need to be translated and not copied. This understanding revealed the complexity of providing empirical justification. This complexity exists not only in the provision of empirical justification but also in the justification of a methodological approach. In order to address this complexity a systematic review is conducted to reveal the current understanding of the complexity of context, the interdisciplinary influence on the conceptualisation and the methodological approach. In order to comprehend the complexity of participation and knowledge sharing within contextuising Integrated Coastal Zone Management, the notion of sustainability is introduced. The introduction of this notion is based on the international agenda of environmental management being placed on sustainable development. The systematic review revealed on the one hand that a pragmatic approach is needed as no consensus exists on the notion of ‘sustainability’. The ecological and social urgency of the current global reality results in the pragmatic approach of ‘sustainable development’. Sustainable development within Integrated Coastal Zone Management is interpreted and implemented based on Western insights and international development agendas. This insight confirms and increases the complexity of contextualising Integrated Coastal Zone Management. From an interdisciplinary perspective it is notable that research in Integrated Coastal Zone Management is conducted mainly from an ecological perspective. Specifically, interdisciplinary research in Integrated Coastal Zone Management in Vietnam starts from global or local environmental issues, has a strong social and economic goal and knows a combination of economic, social or ecological methodologies. This predominantly ecological perspective has resulted in a gap in research on the social and cultural characteristics of a specific context on both the conceptualisations and practices of participation and knowledge sharing. A lack of interdisciplinary management approaches and scientific research has resulted in an increased fragmentation both in science and in management.
Chapter 5 consists of a longitudinal study designed to identify underlying societal patterns that influence changes in understanding, development and implementation of participation and knowledge sharing approaches in Integrated Coastal Zone Management in Vietnam. Due to the short time frame of the longitudinal study, limited changes can be noted. The study mainly confirms the insights from the initial qualitative research (chapter 1) concerning the influence of power, change and willingness. The influence of the Vietnamese decentralisation policy can however be noted as during this time period, the government embedded management programmes changed levels of government. This change in levels of government resulted in differences in levels of understanding and implementation and revealed that the influence of power is strictly distinguishable between the micro and the macro level, but when compared with the meso-level the influence of power, change and willingness differs. This insight was instrumental to provide empirical insight in the influence of context. Not only is there a need to translate from one zeitgeist or context to another, there is also a need to identify the contextual differences within a specific context.

Chapter 6 provides subsequent empirical insights in the contextual differentiations and the possibility of these differences to influence participation and knowledge sharing within Integrated Coastal Zone Management in Vietnam. Quantitative research reveals that the manner in which communities organise their decision making process influences the manner in which decision making processes are organised within a management framework. Specifically, the organisation of decision making processes within communities according to participatory or non-participatory processes increases or decreases the odds of these same or different processes to occur within the frame of Integrated Coastal Zone Management. Chapter 6 does not explicate nor provide insight in which process is deemed sustainable or appropriate. It does however provide insight in the influence of context on decision making processes. This insight is highlighted by notable differentiations between the research areas and at various levels. Furthermore, this insight confirms the insights from chapter 5. Namely, contextual differences do not only exist within specific Integrated Coastal Zone Management contexts but these differences also influence participation and knowledge sharing approaches in different manners.

Chapter 7 is considered the interdisciplinary approach encompassing the complexity of methodology, conceptualisation and contextualisation of Integrated Coastal Zone Management. The chapter aims to provide insight in the methodological complexity of conducted interdisciplinary research. Based on the fairly novel approach of realist review and by the use of narrative synthesis, analysis is made of the various methodologies applied in their totality and interconnectedness. Furthermore, the complexity of contextualisation is explicated both as a research subject and as a research framework. The interdisciplinarity, zeitgeist and ecological urgency result in the need for a pragmatic approach for sustainable integrated management of coastal zones. In order to adhere to this pragmatism a conceptualisation of the complexity of contextualising Integrated Coastal Zone Management is created. The conceptualisation is based on the notions, ideologies or paradigms of desirability, willingness, capitals and pragmatism. Each of these notions entails practical and theoretical perspectives, explicated from a managerial and academic viewpoint.
3. Theoretical framework

The introduction chapter of the dissertation provides an overview of the research and theoretical framework and the research choices that were made. The introduction section is structured following the chronology by which the insights were obtained and the choices were made.

The dissertation titled ‘Contextualising Integrated Coastal Zone Management: the nature of social-ecological systems’ initiated from the hypothesis that “participation and knowledge sharing are prerequisites for the sustainable integrated management of coastal zones”. This hypothesis entails a notion that strives to localise development cooperation in a social-ecological setting in which stakeholders are given ownership. Initial contemplations on this hypothesis brought forth challenges on various levels:

- The discourse of (environmental) management
- The influence of Zeitgeists
- The complexity of the social-ecological dynamics
- Time sensitivities
- The science-management divide
- The discourse of interdisciplinarity
- The oxymoron sustainability
- Development cooperation

It was important to first contemplate the interrelationship of the aforementioned challenges. Using the framework of this dissertation as a starting point; the first realisation is that social-ecological challenges within development cooperation are subject to the discourse of management. This implies that both nature and people are considered manageable. Furthermore, a necessity for this management is claimed. Very little questions are raised concerning these assumptions. The same is true for the concepts considered necessary to achieve this management, case in point: participation and knowledge sharing. Participation and knowledge sharing are highly subject to the zeitgeist in which they exist, making them subject to change and interpretation. They are contestable notions, subject to scientific and societal critique. The framing of this research on the one hand in development cooperation and on the other hand in environmental management possesses the bias for a need for interdisciplinarity: a notion, although highly queried by management, highly deemed an illusion in science. Subsequently, the concern of the science-management divide is raised. Additionally, the oxymoron of sustainability is introduced.

Initially this research aimed to provide insight in the question how? How does one link theories to practice? How does one translate theories and practices from one region to another? Asking these questions, following scientifically rigorous research methodologies resulted in a realisation that this is perhaps not the correct question to ask. Instead of asking the question how, insight was gained that in order to determine how, one needs to ask firstly whether Integrated Coastal Zone Management, participation, knowledge sharing, sustainability and/or sustainable development, and interdisciplinarity are desirable, whether there is pragmatism for this, whether there are capitals for this, and finally whether there is willingness. These four
questions are evidently intertwined. The realisation that these four questions are deemed essential leads to the questioning of existing theories, paradigms and ideologies. This questioning lies at the basis of either denying or accepting the hypothesis that “participation and knowledge sharing are prerequisites for the sustainable integrated management of coastal zones”. Subsequently, in order to question these discourses and theories; to answer the question of desirability, pragmatism, capitals and willingness; and in order to accept or deny the hypothesis one needs to determine how. This understanding makes the research full circle, with the significant and essential difference that the question ‘how’ is now one of science, rather than one of management. This indicates that in order to conduct further research in management, research first needs to be conducted on science itself. How does one research whether discourses or theories are just, specifically when one deals with natural and human realities? The main reasoning as to why the shift in research occurred is because when researching “translatability”, “translatability” of research itself was questioned, whether between science-management, within science, between theory and practice and between and within zeitgeist and contexts.

3.1. Interdisciplinarity

The theoretical framework of this dissertation is framed within the major theoretical construct of interdisciplinarity. A taxonomy of interdisciplinarity identifies three terms; multidisciplinarity, interdisciplinarity and transdisciplinarity (Frodeman, Klein and Mitcham, 2010). The typology is based on the degree of disciplinary interaction wherein “multidisciplinarity is defined as an approach that juxtaposes disciplines” (Frodeman, Klein and Mitcham, 2010, p. 17). Multidisciplinarity differs from interdisciplinarity in that sense that it stays true to the boundaries of the disciplines, whereas interdisciplinarity “analyses, synthesises and harmonises links between disciplines into a coordinated and coherent whole” (Alvargonzalez, 2011, p. 388). The first typology of interdisciplinarity dates back to Leo Apostel (Apostel et al. 1972) and has been studied extensively ever since (f.e. Klein, 1996, Choi and Pak, 2006) (Alvargonzales, 2011). Frodeman, Klein and Mitcham (2010) identify five different ‘types’ of interdisciplinarity, mostly based on the degree of interaction: narrow versus broad or wide, methodological versus theoretical, bridge building versus restructuring, instrumental versus critical, and endogenous versus exogenous.

In the following paragraphs an attempt is made to frame the dissertation within these five ‘types’. It is however important to note that this dissertation does not refrain itself from incorporating other views on interdisciplinarity that might contradict or complement this typology. The placement of the dissertation within this typology is merely used to provide a conceptual construct; the placement does not result in an adhering to the boundaries of these typologies, but transcends them. In this sense, this dissertation adheres more to the typology of transdisciplinarity then it does to interdisciplinarity.

Narrow versus broad or wide

This dissertation places itself in both, thereby rejecting the ‘versus’ aspect of the typology. Stemming from a human ecological approach, this dissertation adheres to the broad or wide typology. Broad or wide interaction occurs between disciplines that do not share, or only limited, “compatible methods, paradigms, and
epistemologies, such as sciences and humanities” (Frodeman, Klein and Mitcham, 2010, p. 18). On the other hand, this dissertation within the social sciences, adheres to narrow interaction as commonly occurs between disciplines such as education and human ecology.

This dissertation transcends the narrow versus broad or wide interaction in that sense that it combines a broad or wide interaction within a narrow interaction, i.e. humanities and sciences (i.e. human ecology) within education and human ecology. Specifically this explicates itself in research on participation and knowledge sharing, specific to (but not limited to) education and human ecology in an interdisciplinary framework specific to humanities and sciences, namely environmental management, specifically integrated coastal zone management. Rejecting the ‘versus’ aspect of the typology is a first expression of the transdisciplinary nature of this dissertation.

**Methodological versus theoretical**

This dissertation finds itself both in the methodological and the theoretical interaction frame. According to Frodeman, Klein and Mitcham (2010) a methodological interaction entails borrowing methods or concepts from other disciplines to apply or test a hypothesis in another discipline. This dissertation applies for example statistical analysis most commonly used in sciences, i.e. odds ratios, to explain and present results acceptable outside the social sciences. Whether or not this relationship is auxiliary or supplementary, respectively achieving a significant change in practice or developing an enduring dependence cannot be determined at this point. Until now, this borrowing of methods is applied in ‘interdisciplinary’ sciences such as human ecology; it is however neither auxiliary nor supplementary in the social sciences or the sciences. Within the humanities and the social sciences in specific this methodological interaction knows a historical evolution (Frodeman, Klein and Mitcham, 2010), within the sciences and between the humanities and the sciences, this interaction is however not straightforward.

The theoretical interaction results in “conceptual frameworks for analysis of particular problems, integration of propositions across disciplines, and new synthesis based on continuities between models and analogies” (Frodeman, Klein and Mitcham, 2010, p. 20). This dissertation made a first, although limitedly, attempt to manoeuvre within the theoretical interpretation. By conducting both a systematic review and a realist review, a conceptual framework for the analysis of the integration of the dimensions of sustainability, both in scale and time, within a real-world context is developed. The synthesis within the realist review and systematic review is based on common models and analogies concerning social-ecological systems. The reasons for the attempt to manoeuvre within the theoretical interaction are the results of the systematic review. A clear bias towards the sciences overpowers theoretical constructs from the humanities and social sciences, thereby skewing interpretations given to certain constructs and undermining the possibility for interdisciplinarity.

**Bridge building versus restructuring**

Bridge building and restructuring are both expressions of motivations for interdisciplinarity. This dissertation is both and neither. No clear motivation for interdisciplinarity for this dissertation was made based on the
division between bridge building and restructuring. The outcome of the dissertation however reflects both. On
the one hand an attempt is made of build bridges between disciplines such as social sciences and sciences; this
is expressed by the methodological interaction (see 2.1.2 Methodological versus theoretical). On the other
hand a restructuring is attempted by the development of a conceptual framework based on a transdisciplinary
realist review (see 2.1.5 Endogenous versus exogenous).

*Instrumental versus critical*

This dissertation adheres to both instrumental and critical interactions, as is often the case for environmental
challenges (Frodeman, Klein and Mitcham, 2010). This dissertation incorporates methodologies and
conceptualisations designed for both problem solving (i.e. instrumental) and the questioning of dominant
structures of knowledge (i.e. critical) (Frodeman, Klein and Mitcham, 2010). Specifically, instrumental
interdisciplinarity is expressed by the framing of the dissertation within environmental management (i.e.
Integrated Coastal Zone Management). A clear example of this is the identification of the influence of Van Chai
on participatory processes that entails managerial adaptation to the context in which efforts are applied.

Critical interdisciplinarity is found throughout the dissertation and reflects itself as the questioning of the merit
of conceptualisations such as sustainability, sustainable development and participation. The dissertation in this
sense does not provide clear answers or solution to environmental challenges but questions the underlying
philosophies. For example, participation in itself is questioned for its merit and is not accepted as a clear cut
solution, but criticised for its zeitgeist depended interpretation. The same is true for sustainable development
and sustainability. Both are widely accepted notions; within this dissertation the merit of both their underlying
philosophies and measurability is questioned.

*Endogenous versus exogenous*

In general exogenous interdisciplinarity has gained priority over endogenous interdisciplinarity as determined
by the OECD in 1982 (Frodeman, Klein and Mitcham, 2010). Exogenous interdisciplinarity stems from “real
problems of the community’ and the demand that universities perform their pragmatic social mission”
(Frodeman, Klein and Mitcham, 2010, p. 27), whereas endogenous interdisciplinarity originates within science
as an expression of the internal development of knowledge (Klein, 1996). This dissertation adheres to this shift
from endo- to exogenous interdisciplinary and finds its interdisciplinarity stemming from real-world problems.
Subsequent to this shift the idea of transdisciplinarity occurred. Transdisciplinarity “denoted a common system
of axioms that transcends the narrow scope of disciplinary worldviews through an overarching synthesis”
(Repko, Newell and Szostak, 2012, p. 286). The realist review conducted in this dissertation is an expression of
this crossing of disciplinary boundaries by providing a new method of synthesis for complex policy
interventions (Pawson et al. 2005).

The theoretical construct of interdisciplinarity for this dissertation results in an unwillingness to provide clear-
cut definitions or descriptions of the dominants concepts. Therefore, the theoretical framework provides
merely an overview of the most accepted interpretations to the various concepts rather than the proposed
interpretations. This dissertation did not attempt to provide more accurate, or more aligned with the real-world interpretations, but rather the identification of real-world questions regarding these concepts. The proposed real-world questions and the methodologies behind the identification of these questions are presented in the ‘structure of the dissertation’ (see p. 8)

3.2. Participation and knowledge sharing in Integrated Coastal Zone Management

Participation and knowledge sharing in environmental management are conceptualised as stakeholder participation (Reed, 2008). Stakeholder participation addresses the interaction between knowledge systems, different value-positions and different institutional arrangements (Varjopuro et al., 2008). Research on stakeholder participation comprises of research from a specific stakeholder’s perspective (e.g. Hill et al., 2012), a management perspective (e.g. Disterheft, 2012), a governance perspective (e.g. Newig and Koontz, 2014), a value perspective (e.g. Redpath et al, 2012), or a knowledge sharing perspective (e.g. Tschirhart et al. 2016). This dissertation aims to address the various perspectives for their common ground and differences; from an interdisciplinary, holistic perspective. Stakeholder participation is researched in its totality, adhering to its complexity.

3.3. The introduction of participation in environmental management

Participation within the research framework of this dissertation is interpreted neither as a tool nor as a goal. It is considered an inherent aspect of the sustainable integrated management of coastal zones. The most commonly used model for participation is Arnstein’s Ladder of Citizen participation (1969). Since the development of this ladder, various critiques have emerged. Firstly, the ladder of citizen participation is deemed appropriate for developed countries, however not for the developing world (Choguill, 1996). People in the developing want need more than merely power; they require on the one hand empowerment to participate in decision making processes and on the other hand they rely on the government for the provision of services (Choguill, 1996). A government that is perhaps not willing or able to provide these services; resulting in public participation based on the willingness to aid in the provision of these services (Choguill, 1996)It has long been suggested that perhaps it is time to jump of the ladder (Collins and Ison, 2006). An alternative to Arnstein’s ladder of participation is the wheel of participation by Davidson (1998). This alternative is however still considered restraining and incapable of addressing complexity. Participation has evolved from a construct of social movement in the 1960’s and early 1970’s in an era of political activism (Beck and Jenning, 1979). Participation soon became a dispersedly used semantic losing its epistemological and conceptual meaning (Pateman, 1970; Collins and Ison, 2006). From the 1980’s onwards participation has been placed in relation with sustainability (Gaventa and Valderrame, 1999) and since the 1990’s with environmental sciences and management (Irvin and Stansbury, 2004; Nelson and Wright, 1995; Beierle, 1999). This evolution towards environmental sciences and sustainability initiated the introduction of stakeholder participation implying a politically constructive participation (Berchin et al., 2002). According to Reed (2008) developments in participation have taken place in parallel geographical and disciplinary contexts. Participation however, strongly depends on the zeitgeist in which it is developed (Abelshausen, 2014), specifically when placed in
relation to social capital (Uphoff, 2000). The creation of politically constructive participation within environmental science and management resulted in a theoretical basis that distinguishes between a normative and pragmatic approach to participation (Reed, 2008). Normative participation is founded upon democratic ideals of freedom and responsibility, but is often critiqued for its ambiguity (Olivo, 1998; Moynihan, 2002). A more pragmatic or instrumental approach was deemed essential resulting in a shift in focus on methodologies rather than on conceptualisations (Abelshausen, 2014).

3.4. A stakeholder's stake in Integrated Coastal Zone Management

No consensus exists on the question of who holds a stake in Integrated Coastal Zone Management due to a difference in interpretation of what a ‘stake’ entails (Reed et al., 2009). Various attempts have been made to determine who or what a stakeholder exactly is, and to develop stakeholder classification (Grimble and Wellard, 1994). The most frequently referenced authors are Friedman and Miles (2006) who refer for the definition of a stakeholder to 45 other existing definitions thereby emphasizing the complexity. From an environmental management perspective stakeholders are identified through stakeholder analysis. Stakeholder analysis is accepted in managerial contexts as the first step in every environmental management approach, programme or project, but often contested for its academic and scientific rigour (Lienert, Schnetzer and Ingold, 2013). And it is for this reason that this dissertation did not attempt to conduct stakeholder analysis but relies on the managerial classification of the included management approaches (See Thùa Thiên Huế, Quảng Nam and Khánh Hòa).

3.5. Integrated Coastal Zone Management in Vietnam

In order to frame stakeholder participation in Integrated Coastal Zone Management it is essential to determine what this management approach encompasses. For this dissertation the choice is made to adhere to the conceptualisation of Integrated Coastal Zone Management as it is accepted in Vietnam.

A concise overview of the origin, evolution and institutionalisation of Integrated Coastal Zone Management explicates this choice. Besides the inherent complexity of Integrated Coastal Zone Management, additional complexity is created or has evolved from the numerous interlinked and interchangeably used or cited approaches (e.g. Coastal and Area Management, Coastal Zone Management, Integrated Coastal Zone Management, Integrated Area Management etcetera). These various approaches show great similarities and differentiation exists mainly based on the social-ecological system’s specificities within a specific geographical scope. Furthermore, evolution can be noted from single management approaches to integrated approaches (Steijn et al. 2012). Usage and geographical scope are often dependent on the context in which they are used or from which they originate. For example, the United States initiated the institutionalisation of coastal management by the development and implementation of the 1972 Coastal Zone Management Act, although questioned for its intrinsic merit (Zille, 1994). In Europe, coastal zone management knows a different history as member states each adopted and developed management approaches as deemed appropriate for their country (Van der Meulen and de Haes, 1996). The European Union initiated the institutionalisation by the
1997-1999 EU Demonstration programme on integrated management in coastal zones (Shipman and Stojanovic, 2007). This dissertation adheres to the terms Integrated Coastal Zone Management and Integrated Coastal Management as these are accepted and recognised terms in Vietnam (Hoi and Giao, 2015). Furthermore, Integrated Coastal Zone Management in Vietnam is deemed the latest paradigm in managing coastal areas (Thanh, 2010).

In Vietnam, different stakeholder groups adhere to different definitions of Integrated Coastal Zone Management (Abelshausen, 2015). High level government officials, NGO’s, International agencies, academics and governments adhere to the definition as set by the United Nations (Abelshausen, 2015): “The marine environment - including the oceans and all seas and adjacent coastal areas - forms an integrated whole that is an essential component of the global life-support system and a positive asset that presents opportunities for sustainable development. International law, as reflected in the provisions of the United Nations Convention on the Law of the Sea 1/, 2/ referred to in this chapter of Agenda 21, sets forth rights and obligations of States and provides the international basis upon which to pursue the protection and sustainable development of the marine and coastal environment and its resources. This requires new approaches to marine and coastal area management and development, at the national, subregional, regional and global levels, approaches that are integrated in content and are precautionary and anticipatory in ambit, as reflected in the following programme areas: Integrated management and sustainable development of coastal areas, including exclusive economic zones; Marine environmental protection; Sustainable use and conservation of marine living resources of the high seas; Sustainable use and conservation of marine living resources under national jurisdiction; Addressing critical uncertainties for the management of the marine environment and climate change; Strengthening international, including regional, cooperation and coordination; Sustainable development of small islands” (United Nations, 1992; 17.1). Stakeholders at lower levels, i.e. local community members, local governments, local NGO’s have a different understanding of what ICZM is: “ICZM is a cross or multi sector management approach, whereas co-management (bi-directional knowledge sharing and participation) is just the relationship between local people, the government and management” (Stakeholder quote; Abelshausen, 2015).

3.6. Knowledge sharing as interaction within stakeholder participation

Knowledge sharing knows a long tradition in environmental management and has been brought in relation with such terms as knowledge democracy (In’t veld, 2010) and knowledge systems (Cornell et al., 2013; Hegger et al., 2012). These are considered key to providing insights in linking knowledge with actions. These concepts are however viewed from a science and policy perspective, lacking in an integrated approach between all knowledge types existing in Integrated Coastal Zone Management (Bruckmeier, 2005). Although the aforementioned concepts are inclusive of these knowledge types, the starting point influences the integrated nature of knowledge sharing. Within the frame of social-ecological systems a need has arisen for a knowledge-based strategy to address complex problems (Gleaser et al., 2009). Knowledge sharing is deemed essential for sustainability, but knowledge sharing also implies 'not sharing knowledge'. We do not argue with the value of the different kinds of knowledge, we do however question whether all knowledge can and should be shared in
all instances. This dissertation therefore adheres to knowledge sharing as inherent to stakeholder participation as it allows for an integrated approach to various knowledge types (Varjopuro et al., 2008). This approach allows for the inclusion of not only explicit but also tacit knowledge types, specifically concerning local ecological knowledge.

3.7. Glossary of terms

**Sustainable development**

The most commonly referenced source for sustainable development is the Brundtland report (WCED, 1987). The Brundtland report defines sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts: the concept of ‘needs’, in particular the essential needs of the world’s poor, to which overriding priority should be given; and the idea of limitations imposed by the state of technology and social organization on the environment’s ability to meet present and future needs” (WCED, 1987, Chapter 2).

**Sustainability**

Sustainability is defined as “the ability of a human, natural or mixed system to resist or adapt endogenous or exogenous change indefinitely” (Sartori, Latronico and Campos 2014, p. 1). Sustainability is often defined according to specific classifications; ecological sustainability, economic sustainability, social sustainability (i.e. the triple bottom line); long or short term; weak or strong (e.g. Ayers, 2008). Sustainability is widely researched to explain and understand sustainability as a process or an end-goal; it is widely used term, however thus far very little explained (Sartori, Latronico and Campos, 2014).

**Social-ecological systems**

Ostrom (2009, p. 419) defines social-ecological systems (SESS) as systems that are “composed of multiple subsystems and internal variables within these subsystems at multiple levels analogous to organisms composed of organs, organs of tissues, tissues of cells, cells of proteins etc. In a complex SES, subsystems such as a resource system (e.g. coastal fishery), resource units (lobsters), users (fishers), and governance systems (organisations and rules that govern fishing on that coast) are relatively separable but interact to produce outcomes at the SES level, which in turn feed back to affect these subsystems and their components, as well as other larger or smaller SESS”.

**Zeitgeist**

Zeitgeist as understood by Hegel in his ‘Phenomenology of Spirit’ “denotes something like ‘the spirit of the time’ or ‘the spirit of age’” (Klikauer, 2016, p 25). “‘Der Geist einer Zeit’ gives a unique stamp to each period and people, a common character pervading their state, laws, art, religion, philosophy etc.” (Ross, 1969, p. 257). Zeitgeist means that one is aware of one’s time but reflects critically on it in order not be asphyxiated by the spirit of that particular time and historical period (Klikauer, 2016, p.25).
References


Brechin, Steven R.; Wilshusen, Peter R.; Fortwangler, Crystal L.; West, Patrick C. 2002. Beyond the square wheel: towards a more comprehensive understanding of biodiversity conservation as social and political process. Society and natural resources, 15, pp. 41-64.


Cornell, Sarah; Berkhout, Frans; Tuinstra, Willemijn; Tabara, David J.; Jäger, Jill; Chabay, Ilan; de wit, Bert; Langlais, Richard; Mills, David; Moll, Pter, Otto, Ilona M.; Petersen, Arthur; Pohl, Christian; van Kerkhoff, Lorrae. 2013. Opening up knowledge systems for better responses to global environmental change. Environmental Science & Policy, 28, pp. 60-70.


Steijn, Rob; Czerfiak, Patrycja; Volckaert, Annemie; Ferreira, Maria; Devilee, Erik; Huizer, Tanya; ter Hofstede, Remment. 2012. Integrated Coastal Zone Management: Oorcoast, outcomes and lessons. European Union: p. 36.


Tschirhart, Céline; Mistry, Jayalaxshmi; Berardi, Andrea; Bignante, Elisa; Simpson, Matthew; Haynes, Lakeram; Benjamin, Ryan; Albert, Grace; Xavier, Rebecca; Robertson, Bernie; Davis, Odacy; Verwer, Caspar; de Ville, Géraud; Jafferally, Deirdre. 2016. Learning from one another: evaluating the impact of horizontal knowledge exchange for environmental management and governance. Ecology and Society 21 (2): p. 41.


Chapter 2 Participatory Integrated Coastal Zone Management in Vietnam: Theory versus practice – Case study; Thừa Thiên Huế

Abstract

Sustainable management processes have undergone a shift from a top-down approach to a bottom-up approach allowing for a more apprehensive inclusion of stakeholders. In traditional hierarchical societies a combination is considered more desirable which is described as a participatory approach that allows for bi-directional knowledge sharing. The question is whether this theoretical approach is viable in practice, taking into account different social, political and cultural influences? Qualitative research was conducted using coding analysis which showed that in practice a great reluctance for change affects the implementation of ICZM. This reluctance is directly related to the level of power and the level to which stakeholders are embedded in top-down traditions. Two contradicting results emerged. On the one hand theoretical understanding is the highest when reluctance for change is the highest and vice versa. On the other hand a decrease in power results in an increase of the sustainability of the implementation of participatory ICZM. In the Vietnamese context the tradition of power results in a platform which is both formal and non-formal. The research concludes that a non-formal platform is needed to create social capital, whereas a formal platform will limit the risk for arbitrariness and allow for institutionalisation.

Key words: integrated coastal zone management, bi-directional knowledge sharing, participatory resource management, social learning, change management

1. Introduction

Integrated Coastal Zone Management (ICZM) is defined as the dynamic process for the sustainable management and use of coastal zones (Douvere, 2008) and their impacts on both marine and land parts (European Union, 2009). As defined by Cicin-Sain (1993, pp. 29), ‘ICZM is a process that recognises the distinctive character of the coastal zone – itself a valuable resource – for current and future generations’. ICZM in specific and Water Resource Management in general have undergone a shift from a top-down approach towards a more participatory approach (Pahl-Wostl et al., 2008). This new approach aims to include stakeholders as co-designers and co-decision makers. Moreover, it has allowed ICZM to move from a one-directional management approach to an approach which not only allows for bi-directional knowledge sharing (Roux et al., 2006; Soncini-Sessa et al., 2007) but which demands co-management. It is the hypothesis of this research that participation can no longer be defined as merely a methodology. Instead, there has to be awareness that ICZM is not sustainable without the practices of participation and bi-directional knowledge sharing. In order to determine whether this awareness is feasible and desirable in ICZM in Vietnam, this research collected, in the initial phase, data on which ICZM programmes and policies currently exist in Vietnam, which existed in the past and which are likely to exist in the future. Furthermore, the research provided data on participatory resource management (PRM) as an ICZM methodology. PRM is in Vietnam best understood as the concept of co-management. Co-management is defined as the sharing of power and responsibilities between governmental stakeholders and local resource users in a management process in which such partnerships can come about (Berkes, 2008). Berkes (2008) describes co-management as a knowledge partnership. PRM as a methodology was brought into relation with the designers of policies and programmes and its end-users. Each programme and policy was assessed both in its development and implementation phase allowing for further insight in the reasoning behind a use or lack of use of PRM in ICZM. The collection of data on PRM is divided in PRM and bi-directional knowledge sharing; this division is however not absolute as PRM aspires bi-directional knowledge sharing. This article will illustrate that in order to achieve sustainable management; participation and bi-directional knowledge sharing are as intrinsic to ICZM as is the coast.

2. Materials and methods: qualitative research

2.1. Data collection

The findings presented in this paper are based on a 2 year inductive qualitative research conducted in the context of the Socialist Republic of Vietnam. The geographical scope was placed on the province of Thừa Thiên Huế (TTH). Data was collected via semi-structured interviews. These interviews were conducted in Vietnamese with the aid of a translator. Interviewees were identified via literature review and where contacted with the aid of the Integrated Management of Lagoon Activities (IMOLA) programme.

2.2. Participants

In order to assess ICZM programmes and policies 14 different stakeholders were interviewed [Table 1]. The stakeholders consist of national and local government institutions, mass organisations, research institutes and
universities, and representatives of ICZM programmes. The Ministry of Natural Resources and Environment (MONRE) was included in the research as they are the government institution directly responsible for the development of ICZM in Vietnam. The Vietnam Administration of Seas and Islands is a national agency residing under MONRE that is responsible for sea use management and marine spatial planning (Intergovernmental Oceanographic Commission, 2009). On a local level, government institutions directly involved in the development and implementation of ICZM programmes and policies were identified and interviewed as such. The Provincial People’s Committee is the institution responsible for issuing guidelines defining the implementation of national decisions (Clement and Amezaga, 2009) in TTH. Concerning ICZM these guidelines are executed by the provincial departments; the department of natural resources and environment (DONRE) and the department of agriculture and rural development (DARD). In TTH two sub-departments are additionally responsible for ICZM; the sub-department of flood control (Sub-DFC) and the sub-department of capture fisheries and fisheries resource protection (Sub-decarif). These departments and sub-departments apply the provincial policies and control the implementation which is delegated to different district authorities (Clement and Amezaga, 2009). For this research the division of agriculture and rural development of the district Phu Loc was included as they are directly involved in the development and management of fishery associations in TTH. Additionally, representatives of former and existing ICZM programmes which had either a national scope with a pilot study in TTH or a provincial scope were interviewed. These programmes include the Vietnam Netherlands Integrated Coastal Zone Management programme (WL Delft Hydraulics, 2005); a cooperation between the Dutch government and the Vietnam government with the aim of creating a national strategy towards ICZM. Furthermore, the Netherlands Climate Assistance Programme (NCAP et al., 2008) was included in the research. This programme came into existence after the completion of VNICZM and shifted its focus towards climate change. The Integrated Management of Lagoon Activities programme (Sarti, 2012), although more limited in geographical scope, had one of the first participatory approaches in TTH. The Common Pool Resource Management (Tuyen, 2012) programme by Hue University was included as it is a pilot in participatory research in TTH. Both Nordic Assistance to Vietnam (NAV, 2011) and the Fishery Sector Support Programme (MOF and MFA, 2005) were included as they both applied a participatory approach even if the scope of these projects is not entirely comparable to that of ICZM.

2.3. Instrument

Generative questions were developed for the purpose of semi-structured interviews. These questions were developed to aid but not to limit the research (Trochim, 2011). They provided insight in the function of the interviewee in his/her organisation/institute and the position this organisation/institute occupies in ICZM. Furthermore, insight was gained into whether PRM and bi-directional knowledge sharing are considered as important aspects of ICZM. Detailed information was obtained on the view of the specific organisation/institute and their view on other stakeholders. Open questions provided in-depth understanding of the challenges and needs concerning participatory ICZM in the future.
### Table 1 Stakeholder scope in integrated coastal zone management in Thừa Thiên-Huế

#### Sector: National government institute
- **Name**: Ministry Of Natural Resources and Environment (MONRE), Vietnam Administration of Seas and Islands (VASI)
  - **Responsibilities**: Policy development on ICZM, sea use management and marine spatial planning (IOC, 2009)
  - **Function**: Deputy Administrator
  - **Gender**: M

#### Sector: Local government institutes
- **Name**: Department of Natural Resources and Environment (DONRE)
  - **Responsibilities**: Implementation of national decisions
  - **Function**: Director of Environmental Protection Branch
  - **Gender**: M

#### Sector: Research institute
- **Name**: Institute of Marine Environment and Resources (IMER)
  - **Responsibilities**: Research on ICZM in different areas in Vietnam
  - **Function**: Director
  - **Gender**: M

#### Sector: ICZM programmes
- **Name**: Vietnam Netherlands Integrated Coastal Zone Management (VNICZM)
  - **Responsibilities**: Cooperation between Dutch and Vietnam government on national ICZM strategy development (WL Delft Hydraulics, 2005)
  - **Function**: Coordinator of VNICZM
  - **Gender**: M

  - **Name**: Netherlands Climate Assistance Programme (NCAP)
    - **Responsibilities**: Follow-up VNICZM with focus shift towards climate change (NCAP et al., 2008)
    - **Function**: Project Coordinator/ National expert in TTH/ National expert
    - **Gender**: M

#### Sector: Local government institutes
- **Name**: Provincial People’s Committee (PPC)
  - **Responsibilities**: Guideline development on implementation of national decisions (Clement and Amezaga, 2009)
  - **Function**: Deputy Head of Economic Division
  - **Gender**: M

  - **Name**: Department of Agriculture and Rural Development (DARD), Provincial Project Management Unit of Fishery Sector Programme Support (FSPS) II, Danish International Development Agency (DANIDA)
    - **Responsibilities**: Implementation of national decisions, participatory pilot case (MOF and MFA, 2005)
    - **Function**: Vice Director of FSPS II
    - **Gender**: M

  - **Name**: Division of Agriculture and Rural Development (DARD)
    - **Responsibilities**: Development and management of fishery associations
    - **Function**: Head of Division of Agriculture and Rural Development (Phu Loc)
    - **Gender**: M

  - **Name**: Sub-department of Flood Control (Sub-DFC)
    - ** Responsibilities**: Apply provincial policies and control implementation by district authorities (Clement and Amezaga, 2009)
    - **Function**: Head of Flood Control Sub-department
    - **Gender**: M

  - **Name**: Sub-department of Capture Fisheries and Fisheries Resources Protection (Sub-decarif)
    - **Responsibilities**: Apply provincial policies and control implementation by district authorities (Clement and Amezaga, 2009)
    - **Function**: Head of Sub-department of Capture Fisheries and Fisheries
    - **Gender**: M
Data analysis

Coding as an inductive approach was used in this research to allow for the emergence of frequent, dominant or significant themes (Thomas, 2006). Coding is a method of analysing qualitative data (Lofland et al., 2005; Miles and Huberman, 1994; Taylor and Bogdan, 1998) with the aim of managing and organizing qualitative data and allowing for the identification of relationships between theories and case-by-case comparisons (Gibbs, 2007).

Initially, identification was made of upper level categories (i.e. labels) based on the research objectives. Lower level labels were derived from multiple analyses of the raw data. The coding structure which resulted from this initial analysis (Abelshausen, 2010) was created in chronological order which is in correspondence with the research objectives. Figure 3 provides an overview of the final qualitative coding analysis structure. The process which led to this final coding analysis structure consisted of three intermediate steps. Each step results in an intermediate coding analysis structure; non-PRM in the development and implementation stage [Appendix A] and PRM in the development and implementation stage [Appendix B].

Figure 3 Qualitative labelling analysis structure: ICZM in Vietnam includes both participatory and non-participatory resource management.

<table>
<thead>
<tr>
<th>University</th>
<th>ICZM programmes</th>
<th>Resource Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hue University of Agriculture and Forestry (HUAF), Common Pool Resource Management (CPRM)</td>
<td>Nordic Assistance to Vietnam (NAV)</td>
<td>Dean of Faculty of Extension and Rural Development</td>
</tr>
<tr>
<td>Integrated Management of Lagoon Activities (IMOLA)</td>
<td>Pilot in participatory approach in TTH (Tuyen, 2012)</td>
<td>Development Project Manager</td>
</tr>
<tr>
<td>Women Union (WU)</td>
<td>Pilot in participatory approach (NAV, 2011)</td>
<td>Chief Technical Advisor/Coordinator</td>
</tr>
<tr>
<td></td>
<td>Participatory approach pilot in ICZM in TTH (Sarti, 2012)</td>
<td>Vice Director</td>
</tr>
<tr>
<td></td>
<td>Mass organisation</td>
<td>1</td>
</tr>
</tbody>
</table>

1. Dean of Faculty of Extension and Rural Development
2. Chief Technical Advisor/Coordinator
3. Vice Director

N-PRM Implementation stakeholders
N-PRM Development stakeholders
N-PRM Implementation Sustainability Assessment
N-PRM Development Participatory Rural Appraisal
N-PRM Implementation non-structural measures
N-PRM Implementation structural measures
N-PRM Techniques
N-PRM Knowledge sharing
Non-Participatory Resource Management
Participatory Resource Management
ICZM

28
Overlap between the definitions of the different labels identified in the intermediate structures led to the understanding that PRM and bi-directional knowledge sharing are not merely two separate ICZM methodologies, but approaches which are intrinsically linked to ICZM. For example, a knowledge sharing effort (e.g. activities, policy goals) can be both bi-directional and one-directional, depending on the stakeholders who interpret the efforts. The coding memoranda provide in-depth descriptions of both the definition of the labels and the possible overlap. A concluding comparison between the final coding structure [Figure 3] and the initial coding structure (Abelshausen, 2010) was imperative for the understanding that bi-directional knowledge sharing efforts and PRM initiatives are stakeholder dependent and are interlinked.

4. Results: Integrated Coastal Zone Management in Vietnam

4.1. Definition and understanding of ICZM

In Vietnam Integrated Coastal Zone Management is interpreted differently by different stakeholders. The impact of this difference in interpretation has a profound impact on the sustainable implementation of ICZM programmes and policies. In Vietnam, a contradiction between theory and practice emerges as this interpretation is linked to the level of power of stakeholders [Table 1].

In literature, Integrated Coastal Zone Management as a management approach was first defined by United Nations Conference on Environment and Development (UNCED) in 1992 (UN, 1992). The concept of ICZM exists however for much longer, with the first political approach to ICZM dating from 1972 (Vallega, 1999). Upper level stakeholders of ICZM in Vietnam (i.e. federal government officials) [Table 1] follow the definition by United Nations (1992) in theory and their understanding of the link between ICZM and PRM is profound. Stakeholders indicate that at a lower level (i.e. provincial and district) [Table 1] ICZM is interpreted differently from literature and is limited to a (economic) sector approach excluding individual stakeholders such as natural resource users. “ICZM is a cross or multi sector management approach, whereas co-management (bi-directional knowledge sharing and participation) is just the relationship between local people, the government and management” (Stakeholder quote, 2010). Lower level stakeholders [Table 1] state that at this level the importance of PRM is recognised, the link with ICZM is however lacking.

The contradiction is even more present when ICZM programmes and policies are implemented in practice. As it is expressed by stakeholders, in practice due to a long tradition of top-down governance in Vietnam, the reluctance to include all stakeholders is great with upper level stakeholders [Table 1]. This reluctance is contradictory to the profound understanding upper level stakeholders [Table 1] have of PRM and its importance in ICZM. Lower level stakeholders [Table 1], on the other hand, lack a theoretical understanding of the concept of ICZM; implementation at this level however reflects the opposite. At grass root level (i.e. lower level stakeholders [Table 1] the inclusion of all stakeholders is achieved via the creation of fishery associations. These associations form a management structure through which ICZM programmes and policies can be implemented. It needs to be recognised however that stakeholders who partake in these associations do not consider themselves as working within ICZM. “Fishery associations are a part of co-management, therefore I see no relation to ICZM as co-management and ICZM are two different approaches.” (Stakeholder quote, 2010)
Additionally, a small difference in geographical scope (lagoon versus coast) has led to a difference in interpretation of ICZM. The existence of programmes such as Integrated Management of Lagoon Activities (IMOLA), Vietnam Netherlands Integrated Coastal Zone Management and the existence of structures such as fishery associations has led to fragmentation. On the one hand, this fragmentation has allowed for the inclusion of a large number of stakeholders. On the other hand, this hinders a unified approach which is needed to generate sustainability in programmes and projects.

4.2. Definition and understanding of participatory and non-participatory resource management.

The associated memoranda to the labels PRM and non-PRM clearly define the reasoning given by stakeholders to distinguish between activities which allow for the introduction of all stakeholders in the decision making process and activities which follow the traditional line of power.

PRM is described by stakeholders as a combination of a bottom-up and top-down approach. The realisation exists that both these approaches need to be introduced as the tradition of top-down and the new approach of bottom-up empowerment, are both present in the Vietnamese society. “The best option is to combine; to have the top-down approach for providing background and framework and the local community fit in their comments and feedback and develop the plan.” (Stakeholder quote, 2010) Therefore stakeholders argue that a gradual change from top-down to a combination will allow for a more effective and realistic approach taking into account the traditional values of the Vietnamese society.

The determination of the label non-PRM is linked to the notion of bi-directional knowledge sharing. Stakeholders perceive activities as non-PRM when stakeholders are involved but are not considered as partners and do not act as co-managers. Non-PRM is however never applied in the strict sense and ambiguity exists. For example even if techniques are used to improve bi-directional knowledge sharing, the outcome may not express this knowledge sharing and may result in a hidden form of top-down governance.

4.3. Change management and social learning

A participatory management approach which allows for bi-directional knowledge sharing implies social learning (Pahl-Wostl et al., 2008) which in the Vietnamese society is received with reluctance as expressed by several stakeholders. In order for the Vietnamese society to evolve from a tradition in which the government is the sole decision making authority into an approach that introduces a large number of stakeholders, change is needed (Pahl-Wostl et al., 2009). Change in essence is a slow process as the evolution towards a new behavioural pattern requires extensive adaptation which for some stakeholders is more time consuming than others. In Vietnam, change differs in relation to the level of power that is given to the different stakeholders. Natural resource users, who are at the bottom of the Vietnamese power scale, are for example less reluctant to change than national government officials.
**Change management**

PRM is introduced in Vietnamese ICZM programmes both on a national and a provincial level. However, even if PRM is present in these programmes in theory, on a practical level the implementation is not complete. The Vietnamese tradition of top-down governance prevents lower level governments [Table 1] to adapt programmes according to the needs of local stakeholders including the introduction of a more participatory approach. However, these lower level governments challenge the upper level government by gradually presenting them with success stories in which they have included a participatory approach. The experience they possess with local stakeholders has provided them with the necessary insight in the win-win situation that can be created by the use of PRM. Via a slow process, due to the sensitive nature of challenging existing governmental power structures, they present their insight and attempt to change the current balance of power. Fishery associations are a clear example of such a success story. These associations allow for collaboration between all stakeholders and are a sustainable manner in which policies from upper level governments can be implemented. This process of reversal of power is however not without its difficulties. On a national level the shift towards a more participatory approach is considered inevitable and necessary, the reluctance is however greater than this understanding and the reality of the situation is not yet recognised.

**Change as a slow evolving process**

Governmental stakeholders [Table 1] experience change in a different manner than other ICZM stakeholders. When comparing the different stages of change identified from the empirical research with theories presented by Fry and Killing (2000) it can be stated that on a national level little progress has been made especially on an implementation level. In the Vietnamese society governmental stakeholders [Table 1] have always been in a phase of contentment (Fry and Killing, 2000) in which they are confident and comfortable (Fry and Killing, 2000). Currently however, they are undergoing a shift towards a phase of denial where they are afraid of change and try to hold on to the past (Fry and Killing, 2000) as they are reluctant to shift from a top-down approach to a participatory approach. Some government institutions, mainly at the lower level [Table 1], have already entered the phase of renewal where they still experience fear but are willing to change (Fry and Killing, 2000).

It is recognised by all governmental stakeholders [Table 1] in Vietnam that time is an important factor in the introduction of PRM in ICZM. However successes have been made and steadily the shift towards participatory ICZM is become visible and positive attitudes indicate that this will continue to happen. The time consuming nature of change however leads to a lack of financial resources and knowledge. Because PRM is not yet fully recognised as an intrinsic part of ICZM, funds and opportunities to improve expertise and technical capacity is limited. This indicates that even if PRM is recognised as an intrinsic part of ICZM in the near future, the process will still be slow as capacity needs to be build on an institutional level. Mass Organisations, NGO’s and ICZM programmes, both national and international, are speeding up this process. Most of the stakeholders apply some form of PRM in their approach. The successes achieved by these stakeholders give a good idea of how PRM can influence ICZM. The partnership between these organisations and governmental stakeholders
[Table 1] allows both partners to benefit from each other’s experiences. This partnership in itself is considered as PRM and is the first real expression of PRM in ICZM in Vietnam. Furthermore, this partnership is recognised as a constructive activity that can be implemented only if the phase of confusion is reached where the realisation of the need for change can be achieved (Fry and Killing, 2000). The realisation of a win-win situation is an essential aspect in the shift towards PRM.

**Organisational stakeholders versus natural resource users**

The process of change becomes even more complicated when natural resource users are introduced. Both governmental stakeholders as organisations struggle with the inclusion of natural resource users as stakeholders in ICZM. Governmental stakeholders do not accept natural recourse users as equal partners even when they recognise that PRM with natural recourse users is necessary. This reluctance is linked to the phase of denial (Fry and Killing, 2000). Governmental stakeholders are unwilling to share knowledge in a bi-directional manner as the knowledge natural recourse users posses is not considered valuable. “For macro policy development, local people have a lack of information and they do not have enough expertise which makes it is very difficult to involve them.” (Stakeholder quote, 2010) Knowledge possessed by natural resource users is tacit knowledge; based on experience and only verbally shared (Roux et al., 2006). Those governmental stakeholders that have reached the phase of confusion (Fry and Killing, 2000) have recognised the importance of this tacit knowledge and have made attempts to include this knowledge in ICZM. These attempts have however a very limited reach and have not allowed for a structural change.

Organisational stakeholders also struggle with the inclusion of natural resource users. Their attempts to include natural resource users have however realised more structural changes than the attempts made by governmental stakeholders. Organisational stakeholders have reached the renewal phase (Fry and Killing, 2000) and are attempting to realise change. The limited realisation of change by organisational stakeholders is due to a lack of capacity in contrast to the unwillingness for change by governmental stakeholders. Fishery associations are a clear example of the attempts being made. The inclusion of governmental stakeholders as partners in these associations provides them with the opportunity to evolve into the phase of renewal (Fry and Killing, 2000).

Even though this contrast exists, both governmental stakeholders and organisational stakeholders apply a top-down approach when developing ICZM programmes and policies. The difference lies in the reasoning behind it. Whereas governmental stakeholders are unwilling to change, organisational stakeholders are unable to change. So even if governmental stakeholders evolve to the phase of renewal (Fry and Killing, 2000) they will also be unable to change. This inability for change lies in the lack of a structure which allows for bi-directional knowledge sharing in participatory ICZM.

**Social learning and the need for structure**

The need for structure is based on the idea that in order to achieve bi-directional knowledge sharing through PRM in ICZM all stakeholders must be brought together. For these stakeholders to interact with one another a
platform needs to exist that allows for bi-directional knowledge sharing. This discussion is framed in the notion of social learning. As described by Pahl-Wostl et al. (2007) the need for social learning stems from the idea that a management approach which includes multi-stakeholders needs to be created as one practical group of stakeholders can no longer learn on behalf of all other stakeholders. Social learning is essential to build up the experience needed to cope with uncertainty and change (Pahl-Wostl et al., 2007). The understanding that different stakeholders are in different phases of achieving change allows for the linkage with social learning.

**Interdependence of the government structure**

Different stakeholders deal with change in different manners and the time-frame for these stakeholders can differ greatly. When this realisation is linked to the concept of social learning, it can be explained why lower level governments and grass root stakeholders are more advanced in the realisation of change than upper-level governments [Table 1]. This realisation is essential to understand why bi-directional knowledge sharing is not fully achieved and PRM is not yet implemented throughout ICZM. Pahl-Wostl et al. (2007) describe the social learning process as a multi-scale process. This process is influenced by the government structure in which it is imbedded. Social learning occurs at two or three levels. Level one entails a short to medium time-scale collaborating between stakeholders. Level two works on a medium to long term scale at the level of change in actor networks. And the final level refers to a long term change in government structures (formal and informal institutions, cultural values, norms and paradigms). Level two and three are very closely linked and a distinction between the two is not always necessary (Pahl-Wostl et al., 2007).

4.4. Change management, social learning and the importance of experience

The link between the levels of change and social learning is very apparent in Vietnam. The first level of social learning is realised in a short time span and is achieved by the existence of collaboration. Lower level stakeholders [Table 1] accept the importance of PRM more easily as they have practical experience with co-management. These stakeholders have had to collaborate in order to achieve common goals and have realised their interdependence (win-win). In TTH, the fishery associations are an example of a grass root structure which allows for bi-directional knowledge sharing, although not yet to its full potential. These experiences and realisations are not achieved by the upper-level governments [Table 1] as their experience with the inclusion of all stakeholders as co-decision makers is limited. In order to achieve the second and third level of social learning stakeholders need to move through the process of change and not submit to reluctance.

4.5. Social learning and bi-directional knowledge sharing

The link between social learning and change is not the only factor that influences the level of social learning. The type of knowledge which needs to be shared and from which one has to learn is an important factor. For example, the reluctance towards bi-directional knowledge sharing was very apparent when dealing with natural resource users as they possess tacit (more implicit) knowledge. The inclusion of the tacit and explicit dimension of knowledge in the discussion on bi-directional knowledge sharing is essential as both types of knowledge acquire a different strategy. Explicit knowledge can be expressed by words, text and diagrams and is
more easily shared whereas tacit knowledge consists of expertise, insights and intuition and cannot be explicated as directly (Bapuji and Crossan, 2007). Tacit knowledge cannot be easily required and it poses great challenges when sharing it between stakeholders. The difference between these knowledge types indicates that a model needs to be created which allows for the sharing of both tacit and explicit knowledge. Tacit knowledge is believed to best shared via common practice (Pahl-Wostl et al., 2007) whereas explicit knowledge is very easily shared in a direct manner (Bapuji and Crossan, 2007). As social learning is a process in which different stakeholders are allowed to learn from each others’ tacit and explicit knowledge, a structure which allows the sharing of both these dimensions is necessary.

4.6. A need for structure and defragmentation

A history of corruption and the associated political structure in Vietnam have however not created the opportunity for the existence of structure in which this social learning can be framed and in which change can follow its natural, time-consuming course. This need for structure is clearly presented by the different stakeholders and the lack of this structure is perceived as the greatest challenge. The creation of this structure is difficult and requires more than a national strategy. Additionally, the need for structure is challenged by financial processes. ICZM programmes are funded primarily on an international basis even if responsibility lies with the national government. Funds whether from NGO’s, international bodies such as the United Nations or governments are conditional and short term goals are often set. This results in a fragmented situation in which different projects receiving different funds need to fulfil their separate goals which often overlap and become redundant. Beside the overlap in goals, the plurality of ICZM programmes in a country such as Vietnam which is heavily supported by NGO’s and foreign governments increases this fragmentation. Local stakeholders express that they have reached their limit concerning short term actions by NGO’s and foreign governments.

5. Discussion and conclusion

5.1. Practical and policy recommendations

Empirical research shows that in order for PRM and bi-directional knowledge sharing to become intrinsic parts of ICZM in Vietnam, change and social learning need to be achieved. The achievement of both change and social learning are linked to one and another and to the notion that a structure is needed on which bi-directional knowledge sharing and PRM can exist. The questions however remain how this structure needs to be organised, who the developers of this structure are and how to ensure a combination of both formal and non-formal learning and sharing of opportunities? In Vietnam, the rigid political structure does not allow for the creation of such a system as the top-down approach precludes the existence of co-decision making. In order to change this rigid structure a more non-hierarchical model of governing needs to be promoted in which different stakeholders can collaborate in the formulation and implementation of public policy (Pahl-Wostl et al., 2007).
5.2. Empowerment

A shift towards the development of such a structure is more easily achieved at grass root level due to strong interactions and dynamics within a cohesive social environment. Therefore this shift should start with empowerment at this level. Empowerment here indicates the creation of conditions for a self-bonding and self-awareness process. This process needs to be able to act as a consensus and goals should be group oriented. Stakeholders at local level should possess the skills needed to manage their own process and be able to provide explanation, argumentation and follow-up to each other (articulation & bonding) and to other stakeholders (bridging). Specifically this would include informative analysing skills, collective research training, consensus workshop meetings and reporting and lobbying. On a higher level governments need to be empowered in order to create a form of collaborative governance. This change management approach should include raising awareness and urgency for integral policy formulation and participatory decision making, changing mentality and behavioural patterns, and incentives for participatory practices.

Specifically, the challenge created concerning a difference in interpretation of the concept of ICZM as a result of a lack of bi-directional knowledge sharing needs to be addressed. Currently, it is recognised by all stakeholders that ICZM needs to be adapted to the country’s specific social, environmental, economical and political needs, as well as its cultural and institutional characteristics. If bi-directional knowledge sharing is not achieved then this adaptation will not be possible as a difference in interpretation will still exists and fragmentation will not be resolved. If the knowledge capacity of all stakeholders is improved by bi-directional knowledge sharing then it will become more intrinsic to ICZM and more easily implemented. This process of bi-directional knowledge sharing to become more intrinsic to ICZM will allow for the potential for more efficiency, more effectiveness, a higher impact and a better relevance of ICZM, i.e. sustainable ICZM.

5.3. Formal and non-formal structure

The structural context of a country can have a significant influence on the participatory process (Pahl-Wostl et al., 2007). Therefore it is important that when the structure is developed it is placed in the context of Vietnam. When the structure for ICZM is merely formal, than the possibility exists that it will become as rigid as the current Vietnamese structure. Non-formal platforms however also do not provide a conclusive answer. A non-formal platform implies the absence of formalised rules for planning, implementation and strategy (Pahl-Wostl et al., 2007). This may lead to a lack of accountability and may create situations of arbitrariness which makes it more difficult to change power relationships and rigid structures (Pahl-Wostl et al., 2007). Therefore it is argued that a platform needs to be informal in order to create social capital, but it also needs to be framed in (at least) a modest level of assuring the milestones, appointing responsibility, spreading the learning results, formulating and sticking to the objectives, in other words: institutionalisation (Pahl-Wostl et al., 2007).
5.4. Tacit and explicit knowledge sharing

Concerning tacit and explicit knowledge it is important to realise that when tacit knowledge is being shared, a system of communication and exercise needs to be present. Therefore, it is recommended that further research on how tacit knowledge can be shared needs to be conducted. Furthermore, a clear definition of the different knowledge types in relation to tacit and explicit dimensions is essential. This definition will allow for a more in-depth understanding of the challenges and successes of knowledge sharing. However, it needs to be realised that even if a general consensus exists, a division between tacit and explicit knowledge is a reality. Contradicting arguments however also have valid points. For example, Pahl-Wostl et al. (2007) indicate that all knowledge is both tacit and explicit and should not be devised as such. This reasoning does not exclude that further research will create insight into how knowledge sharing of both dimensions can be improved. For this reason, this division should not be considered as crucial as it might limit further insights. Furthermore, it is essential that this additional research is not limited to ICZM as knowledge sharing difficulties occur in all management approaches. Therefore insight from other disciplines such as organisational management, change management and social psychology can contain very valuable information. The assessment of knowledge sharing in all these different approaches would be very valuable for knowledge sharing in ICZM. Limiting this research to knowledge sharing in ICZM would even be counterproductive as different management bodies from other sectors are stakeholders in ICZM. Their specific views on tacit knowledge sharing will form an essential portion of the research.

5.5. Linking bi-directional knowledge sharing and participatory resource management

Bi-directional knowledge sharing and participatory resource management in ICZM are closely linked to the concepts of social learning and change. The linkage of bi-directional knowledge sharing and PRM indicated that PRM is only effective if knowledge is shared in a bi-directional manner. When additional research focuses solely on social learning and change management than this realisation might be diminished. Concerning bi-directional knowledge sharing, the recommendation is made that as the shift towards PRM is made, bi-directional knowledge sharing is included into this process. More research needs to be done on the important of this bi-directional knowledge sharing in this process so that a shift towards a more participatory approach can be made.

5.6. Decrease fragmentation

Furthermore, it is recommended that institutions and organisations tackle the problem of fragmentation. Fragmentation needs to be addressed both on a national and on an international level. International organisations and foreign governments need to allow Vietnam to develop a long-term strategy which allows for change and social learning. Short term goals and conditional financing need to be diminished. Foreign expertise and financing need to be provided in such a manner that bi-directional knowledge sharing can be achieved in the initial development of a programme or policy. The current structure of foreign financing does not allow for this bi-directional knowledge sharing and therefore works counterproductive. Furthermore, different initiatives need to be better aligned. The Vietnamese government needs to create a country strategy or needs to improve
its donor consultation. Although all these initiatives have their impact, sustainability can however not be achieved if a unified ICZM strategy is not created. The IMOLA project for example created the existence of the fishery association and has therefore been highly valuable to ICZM in TTH. The Vietnamese government and international institutions and organisations however have to be aware of the existence of these impacts and need to prevent repetition and redundancy.

6. Limitations and future research

This research attempted to gain insight into whether PRM is used in ICZM as merely a methodology or whether it is considered as an intrinsic aspect of ICZM. PRM in relation to ICZM is seen as a methodology which includes stakeholders; the manner in which these stakeholders are included however differs. Therefore, different types of participation were examined according to their suitability and desirability in the frame of the Vietnamese context. Research into which type(s) of participation is (are) desirable in a changing but still traditional society as Vietnam, is limited. Therefore it is advisable to conduct further research into which types of participation are suitable for a policy approach as ICZM in relation to a country’s specific cultural, social, economical and political characteristics.

Moreover, bi-directional knowledge sharing in ICZM programmes and policies is also not elaborately researched. Roux et al. (2006) has provided insight in this subject however the focus is placed on bridging the gap between science and management. Research into the effects of bi-directional knowledge on the sustainability of ICZM programmes and policies is practically non-existing. Research into bi-directional knowledge sharing in ICZM would provide further insight in the understanding of the value of different knowledge types specific to the stakeholders. Furthermore, research into bi-directional knowledge sharing might frame research into stakeholder specific participation. Participation in ICZM is often researched in frame of one stakeholder group (e.g. public participation). Research on participation of all stakeholders at the same time is limited. Research into bi-directional knowledge sharing might provide an answer to this gap, as it allows for the possibility to insert all stakeholders in one research project.

The link between bi-directional knowledge sharing and participatory resource management is still unclear. In this research it was concluded that participation in its most extreme type of co-design and co-decision making requires bi-directional knowledge sharing. Stakeholders clearly expressed that participation of all stakeholders is essential. And thereby it was concluded that bi-directional knowledge sharing of all knowledge types (i.e. tacit and explicit) possessed by the stakeholders is essential.

Furthermore, this research was limited in time which led to a restriction of the research scope, specifically in relation to the inclusion of all stakeholder groups in ICZM in TTH. For example land-based farmers who are represented by the Farmers Union in TTH. Their exclusion was due to time restrictions, but also to a lack of understanding of ICZM. The Farmers Union of TTH did not consider themselves as stakeholders in ICZM. This exclusion was partially addressed by including the Ministry of Agriculture and Rural Development. However, this led to the exclusion of the implementation of ICZM policies and programmes concerning farmers.
7. Conclusion

The research in TTH has shown that in order to achieve sustainable ICZM, knowledge sharing via a participatory approach needs be recognised in its intrinsic nature. A country like Vietnam with a strong top-down tradition poses great challenges towards achieving a sustainable management approach. However, the potential for change is clearly present and the process of social learning is already on its way. Social learning and change need to be given the time needed in order for the Vietnamese society to evolve into a society in which ICZM can be framed. This new approach needs to respect the social, cultural, economical and political values of the Vietnamese society and at the same time allow for enough flexibility that both these societal values and the goals of ICZM can be achieved.

8. Acknowledgements

The authors would like to thank all participants in this research for their cooperation and openness. Additionally we would like to thank the IMOLA project and Mr. Tran Dinh Lan of the Institute of Marine Environment and Resources in Vietnam for their technical support. Thanks also go to Prof. Dr. Karl Bruckmeier of the University of Gothenburg, School of global studies for his guidance throughout the research.
References

Abelshausen, Bieke. 2010. Qualitative coding analysis figure. Unpublished results


Netherlands Climate Assistance Programme (NCAP), Ministry of Natural Resources and Environment (MONRE) and Ministry of foreign affairs of the Netherlands (MFAN). 2008. Climate Change Impacts in Huong River Basin and Adaptation in its Coastal District Phu Vang, Thừa Thiên Huế province FINAL REPORT. Hanoi: IMHR and NCAP.


Pahl-Wostl, Claudia; Craps, Marc; Dewulf, Art; Mostert, Erik; Tabara, David; Taillieu, Tharsi. 2007. Social Learning and Water Resource Management. Ecology and Society; 12: 2; 5.


Appendices

Appendix A

Non-participatory Resource Management

Development

Knowledge sharing

Participatory Resource Assessment

Universities

Government Institutions

Stakeholders

Non-constructive measures

Participatory Resource Assessment

Sustainability Assessment

Universities

Government Institutions

Natural Resource Users

NGO’s

ICZM Managers

Mass Organisations

Environmental Education

Non-constructive measures

Natural Disaster Management

Natural Resource Management

Awareness Raising

Capacity building

Goals

Meetings

Workshops

Conferences

Public hearing

Meetings

Leaflets

Documents

Training course
Participatory Resource Management

Development

Stakeholders

knowledge sharing

Participatory Resource Assessment
Community Consultation

Universities
Government Institutions
Natural resource users
NGO’s
ICZM Managers
Mass Organisations
Community Associations

Meetings
Workshops
Surveys

Environmental Education

Participatory Resource Assessment
Sustainability Assessment

Needs Assessment
Capacity Building

Universities
Government Institutions
Natural Resource Users
NGO’s
ICZM Managers
Mass Organisations
Community Associations

Meetings
Workshop
Conferences
Public Announcements
Training courses
clean-up events

Goals

Non-constructive measures
Natural Disaster Management
Natural Resource Management
Awareness Raising
Capacity building

Appendix B
Chapter 3 Participation and knowledge sharing

Stakeholder participation and knowledge sharing in Integrated Coastal Zone Management in Vietnam

Abstract

Literature on knowledge sharing, participation and social learning argues that a lack of consensus on the definitions and interpretations of these terminologies is created by the complexity of natural resource management. This lack of consensus has led to a wide variety of interpretations, definitions and reviews of existing terminology. This variety is researched for this article and placed in relation to results from an empirical research on knowledge sharing and participation in Integrated Coastal Zone Management in Vietnam.

Keywords: Stakeholder Participation, Knowledge Sharing, Social Learning, Natural Resource Management

1. Introduction

Knowledge sharing and participation in integrated coastal zone management (ICZM) and natural resource management (NRM) do not only require participating in a process, but also understanding the physical environment (Berkes, 2009). This type of knowledge sharing and thereby knowledge generation are essential to NRM and therefore require a specific form of participation. Herein, stakeholders do not only act as co-decision makers but are empowered and have the capabilities to create ecological and management knowledge and skills. This article aims to provide insight in this complexity of NRM and the discussion that exists on social learning, participation and knowledge sharing. Social learning has been introduced in NRM since a few decades. The definitions of social learning differ greatly; both in relation to the interpretation of the terminology as to the usefulness of the concept in practice. This article will not provide an answer to the questions posed in literature but aims to contribute to the discussion by providing empirical evidence.

2. Methods

Literature review was conducted to identify theories, conceptualisations and operationalisations on participation and knowledge sharing. These concepts were researched in the context of ICZM in specific and NRM as an umbrella concept. No exclusion criteria were used based on date of publication. Only articles that are related to environmental management or social-ecological systems were included. Additionally, the concepts of social learning and change were researched: this inclusion criterion is based on the results of the empirical research. Articles researched focus on NRM, co-management, knowledge sharing, social learning, stakeholder participation, and sustainability science.

The literature review is placed in relation with empirical research conducted in Vietnam in 2010. This research was conducted in Thừa Thiên Huế and consisted of interviews with 14 key stakeholders of ICZM. These interviewees consisted of stakeholders from national and local government institutions, mass organisations, research institutes and universities, and representatives of ICZM programmes. Analysis of the interviews was done by the use of coding analysis. The literature review is supported by the findings of the empirical research and used as empirical evidence.

3. Results

When knowledge sharing (knowledge generation), (stakeholder) participation and social learning are researched, authors agree that the complexity of NRM processes (Berkes 2009; Pahl-Wostl, Mostert & Tabara, 2008; Johnson et al., 2012; Reed, 2008; Rodela, 2011; von Kroff, 2012), creates a lack of consensus on the definition and interpretation of the terminology (Berkes, 2009; Reed et al., 2010; Rodela, 2011). In the following paragraphs we will provide an overview of the current understandings and trends that exist in literature.
3.1. Knowledge sharing

Sustainable ecosystem management depends strongly on the acquisition and use of integrated systems of knowledge (Roux et al., 2006). Many questions however remain on who the stakeholders in these knowledge systems are, which knowledge has to be incorporated and what the role of these stakeholders is? Roux et al. (2006) state that knowledge flows between science and management are important especially in times of change. Science is considered as the arena of “experts” and management is seen as the domain of “decision makers” (Roux et al., 2006). No specification is given to who these experts and decision makers are. This lack of specification is problematic in NRM as the concepts of stakeholder participation and co-management indicate that all stakeholders should be able to act as co-decision makers (Soncini-Sessa, Castelletti, & Weber, 2007). If all stakeholders are co-decision makers, then no differentiation exists between experts and decision makers. But even if this differentiation is not correct, or as it is the case of Roux et al. (2006) is not accurately defined then the problems of knowledge sharing still occur. Knowledge sharing in NRM requires a new definition and categorisation of stakeholders, one which allows for distinctions between knowledge types but which at the same time recognises their role as decision-makers.

Roux et al. (2006) recognises the problems that exist with the exclusion of end-user knowledge in knowledge sharing processes. They state that early and on-going interaction with end-users is the surest way to increase compatibility between innovations and resource management needs. Hereby, it is important to recognise the difference between explicit and tacit dimensions of knowledge (Roux et al., 2006). Explicit knowledge refers to organised or interpreted data which is endowed with relevance and purpose. Tacit knowledge on the other hand is a mix of experiences, values, contextual information and intuition. It is this knowledge that gives people their capacity for action (Roux et al. 2006; Matzler, 2008): it is highly personal and difficult to formalise, making it problematic to share (Bapuji and Crossan, 2007; Martzler, 2008; Roux et al., 2006). Our research agrees with these conceptualisations: we deducted that often tacit knowledge is considered as less important and too much of an effort to include. Stakeholders in Vietnam state: “Scientists and managers are not willing to listen to end-users. End-users are willing to share their knowledge but scientists and managers are not willing to put in the time and effort”.

3.2. Social learning as a process or outcome?

When the concept of knowledge sharing is researched social learning is often the concept identified in which this knowledge sharing occurs. Confusion however exists as to whether social learning is a process or an outcome of participatory processes.

Von Korff et al. (2012) subscribes to the definition of social learning by Muro and Jeffrey (2012); “social learning is a process of communicative actions where multiple actors collectively learn about and develop an understanding of each other’s interests, concerns and preferences through dialog and deliberation”. The question as to what extend this social learning can be translated into practices is still open. Furthermore, when participation is brought into relation with co-management (Berkes, 2009; Leys & Vanclay, 2011; Pahl-Wostl et al., 2007; von Korff et al., 2012) social learning is closely linked. The emphasis is placed on “collaboration and
the development of shared practices between different stakeholders to respond flexibly to unexpected developments and to include new insights and changing circumstances into management decisions” (von Korff et al., 2012). von Korff et al. (2012) interpret social learning as an outcome. This interpretation is not generally accepted in literature or by our empirical research. Johnson et al. (2012) state that social learning is both an outcome and an input (Berkes, 2009). Our research showed that social learning is not only an outcome but also an aspect of the ICZM process. Stakeholders do not only learn about and develop understanding of each other’s interest but also generate new knowledge based on this. This new knowledge leads to the development and implementation of ICZM policies and programmes. If social learning is only viewed as an outcome of a participatory process than stakeholders are not allowed to act as codesigners, co-producers or co-decision makers (see also Soncini-Sessa, Castelletti, & Weber, 2007).

3.3. Social learning from an individual, network or system perspective?

In order to answer the question as to whom the stakeholders are in knowledge sharing processes, it is necessary to define from which perspective knowledge is shared. According to Rodela (2011) participation and knowledge sharing in NRM are viewed from an individual-centric, network-centric and system-centric perspective. This division is supported by Pahl-Wostl et al. (2007); here the differentiation is made on the level of representation in multi-scale social learning processes. From an individual perspective social learning is a process embedded in past experience and/or observations of the other participants (Rodela, 2011) which occurs on the micro-level (Pahl-Wostl et al., 2007). Social learning is network-centric as actors are vast, interact over a long period of time and are included in relation to their specific interests (Rodela, 2011). This interpretation is supported by Reed et al., (2010). Reed et al. (2010) indicate that often little distinction is made between individual and wider social learning. Learning occurs in an individual; however it mostly occurs through social interaction with others (Reed et al., 2010). More than one person can therefore learn as an emergent property of the reinforcing interactions between people, through networks (Reed et al., 2010) on a meso-level (Pahl-Wostl et al., 2007). Our research confirms these interpretations. In Vietnam, social learning occurs on an individual level for example fishermen learn through experience and observation of each other. Furthermore, fishermen are also organized in fishery association in which they learn through social interaction with each other. The question we pose ourselves is whether this distinction in necessary; where does the individual end and the network begin?

Rodela (2011) also identifies social learning on a system-centric level. This indicates that social learning is a process involving system-wide advances in which interest is for change that moves the social-ecological system towards a more sustainable trajectory (Rodela, 2011; Johnson et al., 2012). This perspective was confirmed by our empirical research and by literature (Diedrich, Tintoré, & Navinéés, 2010; Lozoya, Sardá, & Jiménez, 2011; Balagué, 2008; Pahl-Wostl, Mostert, & Tabara, 2008). Our research indicates that social learning in ICZM occurs on all three levels simultaneously. This is supported by Berkes (2009) who states that although learning occurs at the level of the individual, it is too narrow to only focus on individual learning as we need to embrace the various learning processes that seem to operate in environmental management (Berkes, 2009). It is
recognized that individuals and organizations learn; learning in a wider social system however remains controversial (Berkes, 2009).

3.4. Social learning and participation

The concepts of participation and social learning are often not well defined and used in an incorrect manner. In order for social learning to take place in practice, better understanding of the differences between these two concepts is necessary.

Reed et al. (2010) identify key problems with the term of social learning as it is used in literature. Social learning as a concept is often confused with the conditions or methods necessary to facilitate social learning, such as stakeholder participation (Pahl-Wostl et al., 2007; Reed et al., 2010). Participatory processes stimulate and facilitate social learning, but it cannot be assumed that participation inevitably leads to social learning (Reed et al., 2010). Reed et al. (2010) state that without clarity on the definition of social learning it becomes difficult for practitioners to facilitate social learning in social-ecological systems.

Johnson et al. (2012) holds promise for sustainable management of complex social-ecological systems as researchers and managers seek to understand the mechanism behind effective participatory environmental management processes. However as von Korff et al. (2012) state, the question remains as to what extent social learning concepts and applications can be translated into practice in NRM processes.

3.5. Social learning, change and experience (the emergence of co-management)

In literature, little is found on the influence of change and experience on the process of social learning. Our research shows that social learning and participation are directly linked to change and experience. We discovered that the level to which such learning occurs is directly linked to the level of reluctance for change. Stakeholders in Vietnam indicate that stakeholders with a low level of power have more experience with social learning and participation and therefore have a low level of reluctance for change. It is at this level of power, that we see a change in mentality and ultimately in behaviour. Reluctance for change in stakeholders with a high level of power is directly related to the rigid and hierarchical political tradition of Vietnam. As it is stated by von Korff et al. (2012) participatory processes are influence by the context in which they are used; for example authoritarian and rigid regimes. Stakeholders that hold true to this tradition and have a high level of power do not subscribe to the inclusion of all stakeholders. Stakeholders state: “end-users in ICZM do not possess valuable knowledge and lack the capabilities to contribute.” Our research deduced that this reasoning is directly linked to their lack of experience with participation and knowledge sharing. Stakeholders who have had this experience have lost their reluctance; those who haven’t are not convinced of its value.

When the concepts of change and experience are linked to social learning the concept of co-management emerges. Three forms of management exist; co-management, adaptive management and adaptive co-management (Berkes, 2009). Co-management in NRM can be viewed as a form of power sharing. In Vietnam, as it is in most countries (Berkes, 2009), resource management falls under the jurisdiction of the central
government. There are however some opportunities for power sharing. In Vietnam, stakeholders with a low level of power often have a disadvantage when it comes to power sharing (Berkes, 2009). Our empirical research shows that these disadvantages are addressed by the slow introduction of ‘success-stories’ by the stakeholders with a low level of power. This is achieved by institutional and capacity building, and power sharing (Berkes, 2009).

4. Conclusion

For this article, we reviewed participation, change, knowledge sharing and social learning in the context of NRM; compared with an empirical research in ICZM. Hereby, we identified the complexity of social-ecological systems and the opportunities and challenges that are related to the desire to achieve sustainability. Literature reveals that social learning is an important aspect of NRM. Literature does not agree on the definition and interpretation of social learning. Social learning is closely linked to participation, change, knowledge and experience. Confusion exists as to what the relationship between these concepts is. The linkage creates confusion on whether social learning is an outcome or a process in natural resources management, whether it can be translated into practice and whether it benefits the participatory process.

We have made an attempt to provide an overview of the different interpretations of social learning and participation in NRM. We are however unable to provide definite answers to the questions asked in literature. As the introduction of social learning in NRM is still a relatively new evolution, more research is needed. With this article we hope to aid in the discussion on social learning and participation in NRM. The comparison with our research provides an example of how social learning and participation is interpreted in the context of Vietnam.

5. Acknowledgements

The authors would like to thank all participants in this research for their cooperation and openness. Additionally we would like to thank the IMOLA project and Mr. Tran Dinh Lan of the Institute of Marine Environment and Resources in Vietnam for their technical support. Thanks also go to Prof. Dr. Karl Bruckmeier of the University of Gothenburg, School of global studies for his guidance throughout the research.
References


Participation throughout the decades: how the zeitgeist influences both theory and practice – A case study

Abstract

“Participation” is the cornerstone of democracy, applauded by virtually everyone. The multitude of definitions and interpretations given to participation however leads to difficulties in translating the concept into practice. These difficulties exist as participation is often dismissed as an infinite, intrinsic aspect of a society and merely used as a means to an end. Participation changes with the zeitgeist in which it is framed. This evolution is researched for this article and placed in relation to participation in Vietnam using the case of a Locally Managed Marine Area.

Keywords: stakeholder participation, theory, practice, Vietnam, zeitgeist
1. Introduction

As we search for understanding on participation, we learn that participation is not clearly defined and influenced by the zeitgeist in which it is used. Already in the 1960s participation is a widespread concept without any precise and meaningful content; it is used to refer to a wide variety of different situations by different people (Pateman, 1970). It is not until the 1980s that a clear shift occurs from participation influenced by political turmoil to participation framed in development themes. At this stage, participation is linked more and more with environmental and sustainability issues. Participation evolved in Vietnam in a similar matter as it did in Western societies, although the influence of participation in Western societies has left Vietnam with a duality of participation; one which resulted from the political turmoil that existed in Vietnam, and one which resulted from the influence of Western development programmes in Vietnam. This article will provide insight in the evolution of participation in Western societies and in Vietnam and it will provide insight in how these have influenced each other. This article will not provide an answer as to how participation should or can be translated into practice, but it aims to provide an overview of both the successes and failures that have occurred in the past few decades and the reasoning for this failure or success.

2. Methods

Literature review was conducted on the different typologies and conceptualisations given to participation both in literature and in programmes and projects used in different disciplines and different countries. The typologies and conceptualisations were researched in a chronological time frame, providing insight in how participation has evolved in the last few decades and how it is interpreted now. No exclusion criteria was made based on the discipline in which participation is used, i.e. environmental management, as insights from other disciplines allow us to place participation in a time sensitive perspective. Furthermore, a comparison is made between participation in Vietnam and participation in other countries in the world placed in relation to the zeitgeist in which it is framed. Empirical data from interviews, focus groups and questionnaires conducted in the Locally Managed Marine Area (LMMA) in Văn Hưng commune in Khánh Hòa province in Vietnam is used to support or refute theories from literature. Interviews and focus groups were conducted with key stakeholders involved in the LMMA from national, provincial, district and commune level. This included governmental stakeholders, non-state actors and local representatives such as village leaders. Questionnaires were conducted with households in the Văn Hưng commune and the village leaders achieving a representative amount of respondents to allow for generalisation in the locality of Văn Hưng. Exclusion criteria were made based on age; respondents cannot be younger than 18 years old. Inclusion criteria comprised of a representative amount of respondents in relation to the % of main livelihood activities in the villages (fe. 30% of households earn a livelihood from aquaculture activities so 30% of respondents represent households who earn a livelihood from aquaculture). Differentiation was made between the different villages to allow for differentiation between social organisations based on different livelihood patterns.
3. Results

3.1. Participation from the 1960s until now

When participation is used by scholars and managers in all disciplines most frequently the reference is made to ‘the ladder of participation’ by Arnstein (1969). This ladder was developed as an answer to the question ‘what is participation’ in a time influenced by the powerlessness of the ‘have-nots’ and the racial, ethnic, ideological, and political opposition expressed when participation was defined as a redistribution of power (Arnstein, 1969). Participation became a popular word in the 1960s, influencing the political vocabulary (Pateman, 1970). In France participation was exclaimed by De Gaulle, in Britain it influenced the Skeffington report ‘people and planning’ (1969) and in the US it was included in the anti-poverty programme (Pateman, 1970). Pateman (1970) expressed that the widespread use of the word led to the disappearance of any precise and meaningful content and is used to refer to a wide variety of different situations by different people. The popularity of ‘participation’ is however strange as political theorists and political sociologists give only a minimal role to participation in the widely accepted theory of democracy (Pateman, 1970). More extreme, the last few years of the 1960s were characterised by the conviction of writers on democracy that the idea of maximum participation of all people needed to be drastically revised if not rejected completely (Pateman, 1970). In the late 1960s and the early 1970s participation in the US was influenced by exceptional political turmoil resulting from the anti-Vietnam War protests and the civil rights movement in which the young; accused of being the instigators, were prominent (Beck and Jennings, 1979). The young were more politically active then their elders which challenged the previously accepted relationship between age and rate of participation (Milbrath and Goel, 1977). The main difference here lies in the participation in protest or demonstrations signifying confrontation politics. However, not only confrontation, but the entire political game was appealing to the young in this era and it was clear that the political turmoil of this time drew these young into political activism at much higher rates than is normal for young people (Beck and Jennings, 1979). In Europe similar student revolts occurred questioning the traditional decision structures (Lane and Ersson, 1999). The 1970s were characterised by strong voices demanding changes in government policy and leadership (Lane and Ersson, 1999). Where in the 1960s and 1970s citizen participation was mostly linked with politics, a shift occurs in the 1980s when participation is framed more and more in the development theme and a clearer link is made with sustainability. In the mid 1970s, participation became more important for development agencies and by the 1980s participation became associated with the sharing of benefits by the poor (Cornwall, 2002). The era of the 1980s gave rise to the establishment of new local level institutions that continued to multiply over the following decades (Cornwall, 2002). Within the development literature less attention is given to political participation and more to social participation, citizen participation and participatory methods. Even though participation in the 1960s and 1970s was highly influenced by the political turmoil, it was located outside the state by those excluded from existing institutions. Whereas later, with less political turmoil, participation is framed in existing development projects and programmes (Gaventa and Valderrame, 1999). In the beginning of this century more attention is being paid to sustainability and the importance of all types of participation is recognised in order to achieve this. From the 1990s until now more focus is placed on the methodologies in participation than the
conceptualisations. Participation has become more inherent in development literature and management, with a clear link to environment emerging in the 1990s. Already in the 1990s the Environmental Protection Agency (EPA) pushed to incorporate more citizen involvement into environmental protection programmes (Irvin and Stansbury, 2004) for which two tiers of benefits of participation are considered (process and outcomes) and two beneficiaries (Nelson and Wright, 1995; Beierle, 1999; Irvin and Stansbury, 2004).

3.2. Participation in Vietnam

Participation in Vietnam is highly influenced by the violent history of the country. Starting in the 1940s the First Indochina War highlighted the division between North and South Vietnam as the South Vietnamese fought the French occupying the North. In the 1950s the Second Indochina War started further amplifying the North-South division. The North was support by China and other communist allies and the South was supported by the US and other anti-communist allies. In 1968 the war reached its most violent point with the Tet Offensive and in 1975 the war ended with the capture of Saigon. The following years were influenced by the Reunification of Vietnam in 1976 and the ‘Doi Moi’ economic reforms in 1986. Doi Moi has influenced the way environmental resources are managed in Vietnam. Natural resources are managed in such a way that natural resources are utilized to fuel the national development. Forest management for example was organised in such a manner that it facilitated forest protection, and state-owned forest and agriculture enterprises developed to establish forest production systems. (Phuong, 2000) These policies however did not consider the needs of the local people, resulting in little attention being paid to these policies and programmes and the continuation of deforestation and degradation (Cai 1999; Phuong, 2000). This indicates that participation was not considered as important after Doi Moi as local people were not involved in the development of these programmes and policies. This believe is still apparent in current environmental management programmes and policies. Stakeholders in Vietnam indicate that although the understanding of the importance of participation exists among managers, scientists and communities, the Party (i.e. the communist party) is not willing to change its way of thinking and will not allow participation to be included in official government programmes and policies.

The response of the Vietnamese community to this unwilling of the Party to allow citizen participation is bi-fold. On the one hand the Vietnam War has left the Vietnamese people with an attitude of ‘waiting’. Stakeholders in Vietnam indicate that people have learned over the past few decades that the government is ‘the provider of all’. People have been dependant on the government for their livelihoods, education, health care.... This dependence has created a society that waits for their government to give them instructions. On the other hand however a trend of ‘we have waited long enough’ has occurred. Stakeholders in Vietnam indicate that they have realised that waiting is not going to help and if they do not do it themselves, nobody will. This has led to fast increase in community based actions in all aspects of life (i.e. economic, social and environmental). Specifically, for environmental management an increase is seen with community based environmental management programmes initiated by either the local community themselves or non-state actors. The Vietnamese are starting to change their behaviour and are using an approach which entails the starting of small scale, local actions themselves and then showing these ‘good practices’ to the government, hoping it will lead to institutionalisations of these actions and dissemination to other parts of the country.
A clear example of this is the Locally Managed Marine Area in Khánh Hòa province. This programme was developed by non-state actors in cooperation with the local community of Văn Hưng. Currently several such initiatives exist in Vietnam and a national programme on Marine Protected Areas has included these LMMA’s as valuable programmes and policies.

3.3. The case of the Locally Managed Marine Area

This duality in participation that currently exists in Vietnam forces us to ask the question as to whether participation defined in Western societies can be translated into participation defined in Vietnam? If participation is influenced by the zeitgeist in which it is framed than how do we translate participation defined by one zeitgeist to another? Participation in Vietnam is not framed in the same political, social or cultural climate as it is in Western societies. However, it is often blatantly copied. Vietnam finds itself influenced by the same powerlessness of the have-nots as it was in the 1960s. It however uses modern western interpretations given to participation. Will scholars in Vietnam reform to these interpretations or will they also subscribe to the conviction of the scholars of the 1960s proclaiming that ‘participation of all’ needs to be rejected in a democracy? Locally Managed Marine Areas are widespread throughout Asia and the world. Vietnam adopted this management form for the first time only a decade ago making it a new approach which still faces a lot of challenges. It has however achieved great strides for participation even if the environmental outcomes are still minimal. As it was discussed in the previous section, LMMAs have been included in the national environmental programmes and policies as a result of participation at local level. This shows that participation in LMMAs initially follows the bottom-up approach. The lack of a topdown approach (commonly opposed as a sustainable approach) however negatively influences the outcomes of the management programmes as stated by stakeholders in Vietnam. These stakeholders indicate that although the Party has a large negative impact on both the outcomes and the participation in management programmes, their involvement is essential in Vietnam. The current political and social climate of Vietnam does not allow for sustainable management without the involvement of the government. Therefore argumentation is made for a combination of both the bottom-up and top-down approach. When we examine LMMAs as a bottom-up approach, resulting in a top-down approach, participation as defined by Western societies can be translated relatively easily into the Vietnamese context. This is due to the assumption that Vietnamese people are active participants in their society and have a voice. However as it was stated before, the duality of participation negatively influences this participation. Although a trend for active participation is emerging, most people or even all people in certain aspects of their lives still have the ‘waiting’ attitude making participation as a combination of a top-down and a bottom-up approach very challenging. This attitude gives power to the government who opposes participation and takes away the voice of the people, both those with the ‘waiting’ attitude and those with the ‘we have waited long enough’ attitude.

4. Recommendations

The duality in attitudes does not allow the direct copying of participation from Western societies. As this is currently often the case in Vietnam, many programmes and policies, both initiated by state and non-state
actors including local communities, face great challenges. We therefore recommend that policies and programmes in Vietnam are reviewed and placed in the current duality of participation existing in Vietnam. Furthermore, we recommend further research both by national and international scientists. We argue that this is necessary as experiences from other countries are still valuable even if they cannot be blatantly copied. The LMMAs in Vietnam have shown that approaches from other countries can be valuable in Vietnam. It is however necessary to further adapt these to the Vietnamese context.

5. Conclusion

In conclusion it can be stated that participation is not a clearly defined concept and changes with the zeitgeist in which it is used. In Western societies participation has been influenced greatly by political turmoil and has resulted in an institutionalization of participation in all (or most) aspects of the political, social and cultural lives of its citizens. The history of Vietnam, although also paved with political turmoil has resulted in an unbalance between participation in Vietnam and in Western societies. The current zeitgeist of Vietnam has created a duality in participation, which either may or may not even itself out. As we have no way of predicting the future, it remains difficult to assume that participation will evolve in the same manner as it did in Western societies. Furthermore, we pose ourselves the question as to whether this is desirable. Stakeholders in Vietnam agree that participation is valuable; the question however remains how to translate Western participation into the Vietnamese context. In the past few decades Vietnam has seen many failed attempts to include participation in management programmes. Initiatives such as the LMMA’s however show a more successful side of the story.

6. Acknowledgements

The authors would like to thank all participants in this research for their cooperation and openness. Special thanks are given to the citizens of Văn Hưng community in Khánh Hòa province in Vietnam for their cooperation in the Locally Managed Marine Area and their openness and honesty in our research. Their daily participation in social, cultural and environmental activities is essential for the livelihoods of their community and the environmental health of the Trao reef. Thanks also go to the staff of the Centre for Marinelife Conservation and Community Development (MCD) in Vietnam for their technical support and guidance.
Chapter 4: The importance of contextualisation in Integrated Coastal Zone Management in Vietnam

Abstract

Integrated Coastal Zone Management (ICZM) has gained great momentum in the past decades; it has however lost ‘some of its charm’. The complexity of managing coastal areas often results in a lack of in-depth understanding on how marine environments can be managed sustainably. One of the contributing factors, besides obvious challenges such as donor involvement, democratising development aid and overlapping, is the challenges that occur from placing an approach designed in the developed world in a developing world’s context. ICZM is often copied and not ‘translated’ to the context in which it exists. A thorough understanding as to why these approaches need to be adapted and an answer to the question how still eludes the scientific and management communities. A systematic review is conducted on literature (n=25) across and within disciplines to identify the definition of ‘sustainable development’ or ‘sustainability’, the foundational grounding of these notions, and the determining factors of context and the importance placed on them. Content analysis, semantic analysis and text mining are used to analyses the identified articles. The findings are presented in a narrative manner. The analysis shows that no consensus exists on the definition of ‘sustainable development’ and ‘sustainability’. Limited scientific justification, interchangeable use and discipline dependency are presented as possible explanatory factors. Furthermore, determinants of context are identified and analysed in relation to their importance and possible influencing characteristic on ‘sustainable development’. The definition of ‘sustainable development’ is perceived highly case dependent and an imbalance in the importance placed on dimensions occurs.

Keywords: Integrated Coastal Zone Management; sustainability; contextualisation; scientific justification; interdisciplinary research

Abelshausen, Bieke; Vanwing, Tom; Byl, Emmeline; Ngoc, Thao Le; Nguyen, Thanh Huy; Jacquet, Wolfgang. 2016. The importance of contextualisation in Integrated Coastal Zone Management in Vietnam. Marine Policy (In Review after revision)
1. Introduction

Integrated Coastal Zone Management is, due to its integrated nature, framed within the integrated resource management approach opted for by the United Nations Stockholm Declaration (UN, 1972) (Kenchington, 1933). Principle 13 of this 1972 Declaration states: ‘In order to achieve more rational management of resources and thus improve the environment, states should adopt an integrated and co-ordinated approach to their development planning so as to ensure that development is compatible with the need to protect and improve environment for the benefit of their population’ (UN, 1972). It is notable that, at the time integrated resource management is placed on the international agenda, no notion is taken of ‘sustainability’ or ‘sustainable development’. Rachel Carson (1962) is often brought forward as the first person to identify the need for ‘sustainable development’ in response to the unbalance created between human development and environmental health by the Industrial Revolution. Semantics from the 1960s and 1970s might differ from the 1987 Brundtland Commissions’ vocabulary used to explicate this exigency; the conceptual understanding encompasses the same philosophies. Definitions on Integrated Coastal Zone Management rarely include the terminology of ‘sustainable development’ and ‘sustainability’ and it is not until the 1992 United Nations Conference on Environment & Development that a clear link is made between these concepts (UN, 1992a). Chapter 17 of Agenda 21 (UN, 1992b) describes “the marine environment ... as a positive asset that presents opportunities for ‘sustainable development’”. This description is noticeably ambiguous as it is unclear whether there is a need to sustainably manage coastal areas or whether coastal areas need to be managed to support ‘sustainable development’. This differentiation might feel like ‘splitting hairs’ but the angle from which the sustainable nature of Integrated Coastal Zone Management is approached plays an essential role in the determination of what the concept entails and how it should/can be practiced. The question that is deemed needed to be asked is whether nature serves the goal of development, or whether sustaining nature itself is the goal. This reasoning is framed within the strong-weak sustainable development division (Mori and Christodoulou, 2012) that is linked to the distinction made between ‘natural’ and ‘manufactured or man-made’ capital (Ayers, Van den Bergh and Gowdy, 2001). This division is not clear and allows for ambiguity: an ambiguity that is realistic and that should be embraced not delineated, and placed in context. Additionally this reasoning brings forth the concept of community. The United Nations defines community mainly in relation to development wherein community development is “a generic term used to describe the processes by which local communities can raise their own standards of living” (UNESCO, 1956, pp.1). This description is limited to human communities as living standards are linked to “social welfare, health protection, education, improvement of agriculture, and the development of small-scale industries” (UNESCO, 1956, pp. 1). This description is framed in the pre-sustainable development era and is highly human community oriented. The current generic description for community development is “a process where community members come together to take collective action and generate solutions to common problems” (UN, 2016a). Community itself is defined as “the set of all populations that inhabit a certain area” (UN, 2016b). The reason for referring to the United Nations as a source for defining community is that within the frame of Integrated Coastal Zone Management and ‘sustainability’ or ‘sustainable development’ definitions are highly discipline dependent. The generic nature, the link to development, the time frame, and the human orientation however limit the merit of these definitions. The
concept of community should be framed within the notion of context and understood and/or adapted as such to the context in which it is used.

Marine environments are unique in the strategy adopted to link environment and development as marine environments provide opportunities to yield not only economic and social benefits, but also, and at the same time, protect environmental integrity (Cicin-Sain, 1993). From this reasoning it can be deduced that marine environments serve ‘sustainable development’, in contrast to ‘sustainable development’ serving marine environments. ‘Sustainable development’ is defined as “development that meets the needs of the present without compromising the needs of the future” (WCED, 1987). The contradiction in this reasoning is apparently circular; marine environments, including marine communities, serve development that in turn serves these marine communities (present and future generations). As such the need to sustain nature itself is not explicit in this definition. Currently, there is no consensus on the concept of ‘sustainable development’ or ‘sustainability’ and the concept itself is considered an oxymoron (Johnston et al., 2007). So how is ‘sustainable development’ or ‘sustainability’ achieved in marine environments? Whether the reasoning starts from marine communities or development or nature is essential to determine the underlying philosophies of both concepts, but it is not essential to determine the influence of context.

The notion of context is multi-facetted and transcends the current discourse on sustainable development, specifically the discourse as set by the United Nations Sustainable Development Goals (UN, 1992a). In the past decade, the focus has been placed on localizing ‘sustainable development’ and ‘sustainability’. “Localisation refers to the process of defining, implementing and monitoring strategies at the local level for achieving global, national and subnational sustainable development goals and targets ... to translate the development agenda into results at local level” (UN, 2015, pp. 3). Although the importance of localisation is not contested, the introduction of the notion context is addressed as such that it transcends the United Nations views on addressing local needs. The reason behind this is that context moves beyond needs of local communities and approaches ‘sustainable development’ and ‘sustainability’ as multi-stakeholder, interdisciplinary and integrated; encompassing social, environmental and economic aspect of communities viewed from a macro, meso and micro perspective. The main differentiation with localisation as defined by the United Nations lies within the one-way versus two-way reasoning, i.e. the achievement of goals or the addressing of needs reasoning versus the ‘working within and with what you have got’ reasoning. The first hurdle in the approach as set by the United Nations is the focus on needs. The past decade a shift has occurred both in literature and in practice by placing the focus on assets as opposed to needs (Attanasio and Székely, 2001; Mathie and Cunningham, 2002; Green, Haines and Halebsky, 2000). This positivistic approach has shown to yield more sustainable results. The notion of context is all inclusive as it encompasses all needs and assets (or capitals) of human communities, societies and nations, and nonhuman species. When linking this reasoning to the strong-weak sustainable development division, it can be noted that this division is not clearly made when introducing context. This introduction of context implies that ‘sustainable development’ can be both strong and weak and a clear differentiation cannot (and should not) be made as the determination of what is natural and ‘manufactured or man-made’ capital highly depends on contexts. The question on ‘sustainable development’
or ‘sustainability’ is not an either/or question, it is one that needs to be framed within the context in which it exists. The inclusion of nonhuman species is based on the multi-stakeholder aspect of ‘sustainability’ and ‘sustainable development’ in which all living organisms are considered as ‘having a stake’. It is based on this reasoning that the description of community as set by the United Nations is not considered ‘all encompassing’, neither are discipline dependent definitions of community. Context is considered the complex totality of all human and non-human processes that exist, have existed, and will exit on a macro, meso and micro level both as a unity and as disunity, both harmonious and antagonistic.

When ‘sustainable development’ is the starting point, the three dimensions or the triple bottom-line (Elkington, 2004) i.e. social, economic and environmental define the context, next to the institutional dimension. And when marine environments are the starting point; the social, economic and environmental characteristics of these ocean and coastal areas and its inhabitants (human and other) determine the context. This deduction determines that when ‘sustainability’ is strived for in Integrated Coastal Zone Management, regardless of the starting point, context is decisive.

2. Methodology

A systematic review is conducted including both quantitative and qualitative study designs. Systematic reviews of qualitative research poses specific analytical challenges. Traditionally, systematic reviews are conducted on quantitative studies, using a specific study design allowing for meta-analysis of the research results (Higgins and Green, 2008). Systematic reviews of qualitative studies do not follow the traditional methodology of a systematic review. Firstly, these systematic reviews do not start with the same pre-set research questions and criteria but allow for a certain degree of freedom that might results in a shift of the free form research question and its associated criteria (Dixon-Woods, 2006). Systematic reviews of qualitative studies have the benefit that they allow the reviewer to move beyond the boundaries of disciplines and incorporate literature with varying study designs (Dixon-Woods, 2006). Although it is possible to limit the range of literature and reduce the complexity of the systematic review by choosing a study design that is deemed most appropriate for certain research (Dixon-Woods, 2006), the systematic review for this article was conducted over the entire range of study designs.

Systematic reviews of qualitative studies require a meta-synthesis, as opposed to a meta-analysis for quantitative studies (Hemingway, 2009). Meta-synthesis is often criticised, summarising qualitative studies might result in the ‘destruction of the integrity of the individual projects’ and although this reasoning in itself is not contested, the counterargument of ‘creating non-reconcilable islands of knowledge’ (Walsh and Downe, 2005) is considered with the same validity. The challenge for the reviewer lies within the conservation of the integrity of the studies by following a similar, although less rigid, approach as a systematic review of quantitative studies. As with quantitative studies an attempt should be made to create homogeneity of studies, the qualitative nature of the systematic review implies however that studies may be reciprocal, complementary or conflicting. As it is with quantitative studies, if the studies are heterogeneous, the findings are summarised narratively.
The research attempts to answers three specific research questions. The research questions include; ‘what is the definition of ‘sustainable development’ in ICZM in Vietnam?’, ‘where did this definition originate?’, and ‘what are the determining factors of context in ‘sustainable development’ in ICZM in Vietnam’. The free form question for this systematic review is ‘Does the origin of and the definition of ‘sustainable development’ itself influence the ‘translatability’ of ‘sustainable development’ in ICZM to the context in which it is used, i.e. Vietnam, and ‘Do the determining factors of context, vice versa, influence the need for translation of ‘sustainable development’ and ICZM?’ The review was conducted systematically to minimise bias and provide an exhaustive insight in the existing literature (Khan et al., 2003; Higgins and Green, 2008) on context and ‘sustainable development’ and/or ‘sustainability’ in ICZM.

The systematic review was conducted by using the search criteria or ‘keywords’ ICZM ‘AND’ Vietnam. The review was conducted with the inclusion criteria of document type ‘article’ and publication year between ‘2005 and 2015’. The literature search was conducted on 05 August 2015. Four databases were included: ProQuest, Web of Science, Science Direct, and Scopius. The initial search yielded 121 results. After removing duplicates and those articles that did not make specific mention of ‘sustainable development’ or ‘sustainability’ in the abstract of the article, 28 articles remained. One was removed based on document type ‘conference report’, and two were removed based on relevance for Vietnam after a reading of the article itself. The final analysis was conducted on 25 articles. Vietnam was used as a case study site; articles referencing more than one region, including Vietnam, whether comparative or inclusive are included in the review. Those articles that make reference of Vietnam but do not include it in the study design are excluded (n=2).

The analysis of these 25 articles was conducted by means of two separate analytical designs. In the first analytical design in the initial step articles are categorised based on their research angle. This resulted in the organising of these 25 articles in six research categories: disasters, natural resources, governance, ecosystems, local ecological knowledge, and models. In a second step, the definition given to ‘sustainable development’ or ‘sustainability’ is extracted from the articles. In order to diminish bias and uphold the integrity of the study, the definition is limited to those phrasings that specifically include the following semantics: ‘(un)sustainable’ and ‘sustainability’. The wording ‘(un)sustain’ is not included as its disciplinary sensitivity might skew the results. A combination of qualitative text mining and content analysis (Yu, 2001) is conducted using a manual methodology comparable in rigour, although more time-consuming, to the methodology as used by MaxQDA (Stojanovic and Farmer, 2013). Additional to subtracting the definitions of ‘sustainable development’ and ‘sustainability’, analysis is conducted on how these concepts are used: consistency, associated grammar and key terms, and foundational documents.

The second analytical design was conducted in a systematic manner based on a semantic analysis of context. First, all words relating to context were identified (n=4423). After duplicates were removed n=4337 remained. The remaining words were clustered and placed in 14 categories: time indications, place indications, chemical, fauna and flora, ecological conditions, human induced or natural causes of ecological degradation, adaptation measures, social organisation, cultural conditions, human (socio-economic) conditions/changes, profession, technology, livelihoods, and measurements. A second clustering phase, based on overlap, resulted in the
determination of six categories: ecological conditions, human induced or natural causes of ecological degradation, human (socio-economic) conditions and/or changes, adaptation measures, social organisation, and cultural conditions. All ambiguous words such as words that have different meanings in different disciplines including adjectives and adverbs were removed (n=1345). Of these words, n=341 show overlap between the categories ranging from 2 to 8 categories overlapping. All ambiguous words with overlap were reviewed within the context and discipline in which the article is framed and appointed to a specific category. Weights are placed on the different categories based on the amount of words within one category in relation to the total word count concerning context (n=1345). This choice is made over words per category in relation to the total word count as the goal is to determine the weight placed on a certain category within ‘context’ rather than to determine the weight placed on a category of context within the broader research (i.e. article).

The results of the systematic review can be biased by the multi-disciplinary nature of the articles reviewed. However as the topic of research is multi-disciplinary in nature and the influence of this multi-disciplinary nature is a contributing factor to the interpretations and definitions given to the research topics, this bias is considered an element of study in itself.

3. Results

The results of the analysis are organised in accordance with the various analysis steps. The first section provides insight in the different research categories in which ‘sustainable development’ in Integrated Coastal Zone Management is researched within the geographical boundaries of Vietnam. The results are presented in Table 2 by providing the study design of the research, the methodology used and the foundational documents used to ground ‘sustainable development’ or ‘sustainability’ within existing theories or paradigms. The 1st level of foundational documents refers to references found in the original article as presented under the subheading reference [Table 2]; the 2nd level refers to references found for the justification of ‘sustainable development’ or ‘sustainability’ in the foundational documents identified in the 1st level.

The first section of the accompanying narrative description of the result is organised according to the research categories i.e. disasters, natural resources, governance, ecosystems, local ecological knowledge and models. The narrative description presents for each research category a description of the articles assigned to the categories and their geographical orientation. Per research category a narrative description is provided of the definition of ‘sustainable development’ or ‘sustainability’, or a depiction of how these two notions are viewed in the associated research category.

The second section of the results is divided in three subsections; definition of ‘sustainable development’, justification, and determinants of context. The first subsection provides the definition of ‘sustainable development’ as deduced from the narrative description as presented in the first section. This definition results from content analysis and qualitative text mining that yielded a definition of ‘sustainable development’ on three levels; generic definition, starting point and goal, and responses. The second subsection presents the percentages of foundational documents used to ground ‘sustainable development’ or ‘sustainability’ both on the 1st and 2nd level. The third subsection present the results of the semantic analysis of context wherein
weights are placed on the different determinants in accordance with the amount of words used to describe context within one category in relation to the total amount of words used to describe context. A concise description is provided of these determinants, elaborated by examples of words associated with the specific determinant of context [Table 3].

3.1. Sustainable development in Integrated Coastal Zone Management

The conceptualisation of ‘sustainable development’ is dependent on the case in which it is used. The 6 identified categories of research are used to create an overview of how ‘sustainable development’ is defined. An attempt is made to generate an overall definition, case independent.

Disasters

Research on disasters within this systematic review reflects upon the impacts of climate change related challenges, specifically salt water intrusion and flooding in, respectively, the Mekong Delta and the urban setting of Ho Chi Minh City. One article specifically tackles the management issue of disasters with as a case study site the Tam Giang – Cua Hai lagoon in Thừa Thiên Huế province.

Herein, ‘sustainable development’ is framed in relation to natural disasters, together with economic development, environmental degradation and intensifying poverty. A holistic, cross-sectoral and multi-disciplinary approach is deemed a requirement for sustainable management. Disaster management minimises vulnerabilities and increases resilience of communities by reversing current trends of environmental degradation towards ‘sustainable development’. The integration of different knowledge sources is stated to be imperative in the prevention and mitigation of natural disasters. Trade-offs might be needed to achieve short term benefits, whereas adaptation measures for understanding the context must be introduced to achieve long term ‘sustainable development’.

Natural Resources

Research on Natural Resources places the focus on the sustainable usage of these resources to create sustainable livelihood pathways. The same geographical focus is placed as the research on disaster management, with one article focussing on the Tam Giang – Cua Hai lagoon and two articles using the Mekong Delta as a case study site. The content of the research is diversified as such that even though all articles focus on aquaculture; the specific viewpoints differs. One article tackles direct use values of wetlands; the second examines bottlenecks and integrated mangrove-shrimp aquaculture, and the third article combines livelihood adaptation with risk management strategies and thereby tackles the issue from a management viewpoint, whereas the other two have a clear economic intake.

The sustainable use of natural resources can be achieved if production efforts are ecologically embedded within the wider coastal ecosystem. Rights and responsibilities need to be transmitted to enable an increase in benefits from ecosystems such as mangroves. Increasing intensification of production affects the livelihood
pathways of local populations and therefore a combination of protection and sustainable management of these ecosystems is needed.

**Governance**

The scale and location of the geographical scope varies from other research categories as it places a wider focus on national, provincial or international governance approaches. Three articles address international programmes as a research focus, i.e. SECOA (Solutions for Environmental Contrasts in Coastal Areas), ECOST (Ecosystems, Societies, Consilience, Precautionary principle) and the FAO (Food and Agriculture Organisation) Code of Conduct for responsible fisheries. Two articles make a comparison between countries within South-East Asia, i.e. Vietnam and the Philippines, and the countries surrounding the Gulf of Thailand. Two article deal with Vietnam in its totality. Concerning research conducted on a small scale within the boundaries of Vietnam, the research scope is comparable to those of disasters and natural resources; one articles deals with the Mekong Delta, and one article focusses on the Tam Giang – Cua Hai lagoon in Thừa Thiên Huế province. The research conducted within the frame of governance presents a strong focus on stakeholder involvement. The scopes of the research influences to what level these stakeholders are researched. The potential of the involvement of local stakeholders, ranging from local government officials to community actors, is placed high on the research agenda. In general, governance researches how the ‘sustainability’ of management programmes, whether international or national can be increased by embedding the management efforts in the local specificity.

‘Sustainability’ in governance implies adaptive and collaborative approaches that support knowledge generation and sharing, clarifies property rights and fosters novel institutional arrangements that enhance power sharing and build trust. Sustainable governance reflects an understanding of interrelated social-ecological systems that allow for marine transformations that support human wellbeing and sustain ecosystem services. Within governance, ‘sustainability’ is related to co-management that enables learning and adaptation across multiple scales. Integrated Coastal Zone Management enables the framework of national policies, legislation, regulations, and financing for sustainable management of coastal and marine resources. Communities are key for sustainable governance. Locally based coastal resource management is considered an approach for cooperation and the creation of community networks. Sustainable governance is linked to economic benefits that can be achieved via such tools as certification in order to eradicate poverty. Poverty eradication and the need to change unsustainable patterns of production and consumption need to be seen as mutually supportive and should be viewed within the poverty environment linkage. Sustainable governance implies a long term perspective that is multidimensional and that implies trade-offs among environmental, social and economic impacts.

**Ecosystems**

This category is differentiated from others as it tackles the research challenge from an ecosystem approach or the research area is framed within a specific ecosystem, i.e. respectively the millennium ecosystem assessment and marine protected areas. Both articles tackle the research by case study where one places focus on a marine
protected area within Vietnam, Hon Mun MPA in Nha Trang, Khánh Hòa province, where the other article makes a comparison between three case study sites from a national perspectives; Vietnam, Egypt and Mozambique. Concerning the research conducted within the frame of the MPA, the focus is placed on ecological health, although social and economic factors are researched as catalysts for this environmental health. The second article tackles the issue of how environmental factors influence human mobility. Although, both researches are framed within specific ecosystems, the starting point, i.e. environmental or human, differs.

When an ecosystem approach is applied ‘sustainable development’ is related to the livelihood of local communities. ‘Sustainable development’ within an ecosystem approach is dependent on the availability of international humanitarian assistance and government funding. Furthermore, within an ecosystem approach the ‘sustainability’ of for example a high tourism-load versus ecological achievement is considered quantifiable.

Local ecological knowledge

This category covers only one article as the focus of the article is specific to the value of Local Ecological Knowledge (LEK) and does not tackle the issues of governance, disasters or makes use of specific models for its research. It can be argued that this article can be placed either under an “ecosystem” approach as the research site is framed within a specific ecosystem setting or on the other hand be categorised as “natural resources” as it deals with the experiences from fishermen that use these natural resources. However, the decision to create a separate category for this research is based on the notion that LEK in itself is researched concerning its scientific value and not questioned on the influence this has on any of the other topics handled in the other research categories. LEK is researched by comparing two case studies, Vietnam and Canada, in which the knowledge from local fishermen on species characteristics is compared to the scientific data that exists on these ecological trades.

‘Sustainable development’ is defined in relation to the contributions LEK can make based on the need to employ ecologically sensitive and sustainable approaches in policy design and to integrate local “voices” in policy making and management. The sustainable dimension of LEK lies in the collaboration between natural resource and ecosystem scientists and people rich in local ecosystem experiences. This collaboration allows for the sharing of concerns on ecosystems and species sustainably.

Models

Almost all articles included in this category use one form of geographical research tools such as GIS (Geographic Information System); SVA (Shoreline Video Assessment), or GPS (Global Positioning System). These research tools are often combined with other, more ‘social’ research tools, both quantitative and qualitative such as Resource Management Domain methodology, Rapid stakeholder assessment, workshops etc. Conceptually, articles in this category make use of a specific tools or models to test what role they can play in either addressing certain ecological issues or specifically managing certain social-ecological challenges. Shoreline Video Assessment, food web model, water needs index, resource management domain, rapid stakeholder and conflict assessment, and GIS are used to assess different aspects of social-ecological challenges.
and its potential for addressing specific issues such as vulnerability or achieving sustainable management as a general goal.

Integrated Coastal Zone Management, researched in relation to the application of various GIS models, land use planning etc. is put forward as a new tool for ‘sustainable development’. The main principles entail the insurance of unification, interdisciplinary and inter-regional management and simultaneous harmonisation of common interest to involve stakeholders in the management and use of coastal resources and environmental protection. Additionally ICZM is said to allow for the integration of socio-economic development and the application of proactive prevention measures to mitigate pollution and recover degraded ecosystems and environments for ‘sustainable development’. The use of tools or models to achieve ‘sustainable development’ is mainly linked to climate change and sea-level rise adaptation for livelihood of communities. It is important to consider the full context in which impacts of climate change arise to reduce vulnerability. A multistage procedure is needed to develop sustainable policies for implementation, monitoring and evaluation procedures. Concerning livelihood vulnerability, ‘sustainable development’ implies a diversification of an economy dependent on natural resources to a manufacturing based economy. ‘Sustainable development’ implies trade-offs that give equal weight to social, economic and ecological criteria. A balance needs to be achieved between environmental and community needs, specifically effective income generation, effective conservation and sustainable land use management. Sustainable land-use planning and natural resource management implies the need for a holistic approach that allows for all stakeholders to come to common terms on the awareness, sustainable use and management of coastal resources for livelihood. ‘Sustainable development’ should be a continuously evolving process that allows for the involvement of stakeholders and should act as a conduit for information flows across social hierarchy of stakeholders.
<table>
<thead>
<tr>
<th>Articles reviewed</th>
<th>Study Design</th>
<th>Methodology</th>
<th>Referencing 1st level</th>
<th>Referencing 2nd Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disasters</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 3                 | Trung, and Tri (2004) | • Mekong Delta, Vietnam  
• Climate change  
• Socio-economic development | • Literature review  
• Narrative summery  
• No clear study design  
• Secondary empirical data | Science (Kakonen, 2008) |
|                   | Tu and Nitivattananon (2011) | • Ho Chi Minh City, Vietnam  
• Climate change  
• Flood risks  
• Urbanisation  
• Adaptation. | • Rapid vulnerability assessment  
• Tools for environmental assessment and management  
• Case studies on adaptation  
• Literature review  
• Focus-group-structured-interviews  
• Secondary data: document review, unstructured questionnaire interviews with expert/staff | International Body (Thang et al., 2011) |
|                   | Tran and Shaw (2007) | • Thừa Thiên Huế province, Vietnam  
• Holistic integrated disaster management approach  
• Gap in design and implementation | • Qualitative research  
• Secondary data: project documents and technical literature  
• Individual interviews  
• Transect walks  
• GIS methodology  
• Analysis of spatial linkages. | International Body (ISDR, 2002; Douglass et al., 2002) Science (Bui, 2001) |
| Natural Resources |              |             |                       |                       |
| 3                 | Tuan, Xuan, Nam and Navrud (2009) | • Tam, Giang – Cua Hai lagoon, Thừa Thiên Huế province, Vietnam  
• Direct use values of wetlands  
• Market price method | • Market Price Method  
• Direct use values  
• Population sample: households  
• Sampling strategy: aquaculture, capture fisheries, rice cultivation and aquatic poultry raising, and seagrass collection | Science (Hue, 2003) |
• Bottlenecks and potentials of integrated mangrove-shrimp aquaculture systems  
• Drivers of change | • Case study: Multi-criteria decision analysis using qualitative weighing of drivers of change  
• Secondary data: academic research | Science (Primavera, 2000; Ha, Van Dijk and Bush, 2012)  
Science (Beveridge, Phillips and Macintosh, 1997; Rönnbäck, 1999; Wibowo and Byron, 1999; Sikor, 2001; Primavera, 1998) |
<table>
<thead>
<tr>
<th>Research</th>
<th>Locations</th>
<th>Methods</th>
<th>Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratner, Oh and Pomeroy (2012)</td>
<td>Philippines and Vietnam</td>
<td>Interviews and focus group discussions Evaluation of 9 Fishing Associations Secondary data: research projects, grey literature and government websites Long term participatory action research project Reflections of practitioners Interview data and participant observations Practitioner reports Comparative review of the evidence-based research literature</td>
<td>Science (Folke et al., 2005) ScienceBecker and Ostrom, 1995; Carpenter and Gunderson, 2001; Berkes and Folke, 1998)</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Focus Areas</td>
<td>Methods</td>
<td>Data Sources</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Decentralisation, traditional management methods and community agreements</td>
<td>Secondary data: journal articles, technical papers, websites and personal communications</td>
</tr>
<tr>
<td>Hosch, Ferraro and Failler (2011)</td>
<td>Asia (China, Thailand and Vietnam); Africa (Senegal, Guinea Bissau and Guinea); the Caribbean (Jamaica, Dominican Republic, and Trinidad &amp; Tobago)</td>
<td>Code adoption and implementation in Asia, Africa and the Caribbean</td>
<td>Case studies</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Standardized self-assessment questionnaire</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Analysis relies almost exclusively on nominal and unprocessed figures.</td>
</tr>
<tr>
<td>Christensen, Trap and Hjortso (2008)</td>
<td>Ca Mau province, Mekong Delta, Vietnam</td>
<td>Disclosure utilisation planning at the horizontal level of a state forest enterprise</td>
<td>Qualitative interviews</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provinical strategic mangrove forest and fisheries utilisation decision support system</td>
<td>Cognitive mapping under the rapid stakeholder and conflict assessment methodological framework</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Platform for defining tactical forest planning objectives within a 10-year planning horizon</td>
<td>Structured follow-up interviews</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Case study</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Non-linear so-called column generation system</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Linear programming (LP) optimisation algorithm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Estimates of the net present value (NPV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Field survey</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Step-wise analysis; secondary data collection, key informant interviews, focus group discussions, household interviews, merging, computing, and analysing collected data</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Household survey on livelihood capital assets</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Qualitative and quantitative date from questionnaires</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Crosstabs and analysis of variance (ANOVA) in SPSS-151 and Spearman's rank bivariate-correlation tests</td>
</tr>
<tr>
<td>Ha, van Dijk, Bosma and Sinh (2013)</td>
<td>Bac Lieu and Ca Mau province, Mekong Delta, Vietnam</td>
<td>Identification of diversity of strategies to deal with economic and environmental risks</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative environmental and sustainable livelihood impacts of shrimp farming</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ecosystems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gowing, Tuong, Hoanh and Khiem (2006)</strong></td>
<td><strong>Ca Mau province, Mekong Delta, Vietnam</strong>&lt;br&gt;<strong>Assessment of sustainable development</strong>&lt;br&gt;<strong>State of the environment, natural resources, socio-economic conditions</strong>&lt;br&gt;<strong>Relationship between livelihoods and natural resources.</strong>&lt;br&gt;<strong>Quantitative and qualitative surveys</strong>&lt;br&gt;<strong>International Body</strong>&lt;br&gt;UN, Primavera, Science (Tuong et al., 1998)&lt;br&gt;FAO, FAO/NACA, Barraclough and Finger-Stich, Clarck, Grammage, Stevenson and Burbridge, Macintosh and Phillips, Government (Funge-Smith and Stewart, 1996) NGO (Pruder et al., 1995)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dung (2009)</strong></td>
<td><strong>Hon Mun, Khánh Hòa province, Vietnam</strong>&lt;br&gt;<strong>Assessment of hard coral species abundance and communities, specific human activities linked to specific developments, and tourism, aquaculture and/or harvesting intensity related to changes in diversity</strong>&lt;br&gt;<strong>Primary data: scientific and annual technical reports on tourism, aquaculture and marine fishing within the MPA</strong>&lt;br&gt;<strong>Rapid survey</strong>&lt;br&gt;<strong>Un-structured interviews</strong>&lt;br&gt;<strong>Multivariate techniques; multivariate ordination of observations with linear or unimodal techniques</strong>&lt;br&gt;<strong>Statistical package Cano Draw 4.5</strong>&lt;br&gt;<strong>Case study on The Environmental Change and Forced Migration Scenarios (EACH-FOR) project</strong>&lt;br&gt;<strong>Three case studies: Vietnam, Egypt and Mozambique</strong>&lt;br&gt;<strong>Desk research</strong>&lt;br&gt;<strong>Expert interviews</strong>&lt;br&gt;<strong>Questionnaires</strong>&lt;br&gt;<strong>Methodology is based on the field methodology used in the EACH-FOR project</strong>&lt;br&gt;<strong>Science (Vinh et al., 2003) International Body (IUCN, 2007)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Warner, Hanza, Oliver-Smith, Renaud and Julca (2010)</strong></td>
<td><strong>Egypt, Mozambique and Vietnam</strong>&lt;br&gt;<strong>In-depth exploration of the effects of environmental degradation and climate change in relation to vulnerability and the spectrum of environmentally induced migration</strong>&lt;br&gt;<strong>Patterns of environmental stressors and migration worldwide</strong>&lt;br&gt;<strong>International Body (MEA, 2005)</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Local Ecological Knowledge

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Examination of aspects of linking fishers’ Local Ecological Knowledge with science-based research</td>
<td></td>
<td>Field surveys of the fish fermentation industry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Benefits, challenges and major constraints</td>
<td></td>
<td>Desk studies</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Questionnaires</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Structured and semi-structured interviews</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Primary meteorological records</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Oceanographic data</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Secondary information on fish behaviour</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Socio-economic checklists</td>
<td></td>
</tr>
</tbody>
</table>

### Models

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Assessment of sustainable management using Shoreline Video Assessment Methodology</td>
<td></td>
<td>Shoreline Video Assessment Method</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>GPS data</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Handycam Footage</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Assessment of coastal vulnerability to sea level rise using GIS</td>
<td>Unsupervised flood layers</td>
<td>Science (Boatman et al., 2008) International Body (IUCN, 2007)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Appraisal of coastal adaptation planning policies</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Development of an evaluation model of interaction between fisheries and the food web in coastal marine ecosystem</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>A mass-balance model of the coastal ecosystem in Vietnam</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ecopath with Ecosim software</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>18 ecological species groups</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Local field survey data</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fisheries data from 2000 to 2005</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Geographical information system (GIS): multi-spectra band SPOT image, digital and analogue maps, statistical data from various reports,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Identification of appropriate sites for shrimp farming development</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>Location</td>
<td>Methodology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>---------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moglia, Neumann, Alexander, Nguyen, Sharma,</td>
<td>Can Tho City, Mekong Delta,</td>
<td>GPS data, and socio-economic surveys</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cook, Trung and Tuan (2012)</td>
<td>Vietnam</td>
<td>Case study</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evaluation of ‘Climate Adaptation</td>
<td>Methodology: initial workshop,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>through Sustainable Urban</td>
<td>sector review and collation, analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Development’ study</td>
<td>of selected data</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evaluation of the Water Needs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Index (WNI) framework</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kam, Nhan, Tuong, Hoanh, Nam and Maunahan</td>
<td>Bac Lieu province, Mekong Delta,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2006)</td>
<td>Vietnam</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Research in the context of</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>complex natural resource</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>management issues</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Managing saline and freshwater</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>resources</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hjortso, Christensen and Trap (2005)</td>
<td>Mekong Delta, Vietnam</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Power relationships in participatory stakeholder assessment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>International Body</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Resource Management Domain (RMD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>concept</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GIS techniques to delineate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>spatial clusters of hamlets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Power relationships in participatory stakeholder assessment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Empirical data and analysis:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>qualitative research interviews</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>and cognitive mapping of</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>stakeholders' mental models.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.2. Definition of Sustainable Development

Based on the definitions deduced from the different articles reviewed, organised according to the six categories of research [Table 2] and interpreted across disciplines, methodologies and study designs, taking into account the disciplinary sensitivities, a definition of ‘sustainability’ can be divided in three sub-definitions.

Firstly, ‘sustainable development’ is described as a long term holistic, cross-sectoral, interregional, and multi- and interdisciplinary approach that requires a long term perspective and trade-offs, preferably short term, between economic, social and environmental impacts. As an endgame ‘sustainable development’ should result in a balance between these impacts.

Secondly, as an initial starting point ‘sustainable development’ has an environmental dimension and appears to be viewed as a response to environmental challenges such as climate change, sea level rise, pollution, and natural disasters. On the other hand, ‘sustainable development’ has a strong socio-economic goal wherein livelihood and poverty alleviation/eradication are the main drivers of ‘sustainable development’.

And finally, responses to ‘sustainable development’ challenges are centred on a local and ecological embedding in interrelated social and ecological systems. Local embedding of ‘sustainable development’ starts from the notion that the opportunity for local voices to be heard will result in collaboration and cooperation. This should be expressed via the creation of community networks and the sharing of power between stakeholders to allow for human wellbeing in the frame of common interests. The institutional dimension of local embedding lies within the provision and acceptance of rights and responsibilities, and the provision of international humanitarian aid and government funding. The underlying reasoning for responses to ‘sustainable development’ challenges include the necessity of community resilience as a response to community vulnerability, the need to diversify production to sustain ecosystem services, the importance placed on the sharing of knowledge, and the value given to local ecological knowledge. In general these strategies result in prevention, mitigation and adaptation efforts.

Justification

In order to answer the question, ‘where does the definition of ‘Sustainability’ or ‘Sustainable Development’ originate from?’ analysis is made of the source documents used to support either the grounds for research or the justification of the need for ‘sustainability’ or ‘sustainable development’. Table 2 presents the literature sources used to reference ‘sustainability’ or ‘sustainable development’. From this analysis it can be seen that 1st level foundational documents, i.e. referencing in the original article reviewed for this research is done mostly by referencing international bodies. In total 16 references are made to international bodies when mention is made of ‘sustainable development’ or ‘sustainability’. These 16 references are used in 9 out of 25 articles. 12 references in total are made to other scientific sources; this type of referencing is done in 10 out 25 articles, with 5 articles referencing both international bodies and science. 6 out of 25 articles (24%) do not reference ‘sustainable development’ or ‘sustainability’ directly. It can be concluded that in 36% of the articles references are made to international bodies and in 40% of the articles reference is made to science. Additionally,
references are made to international NGO’s (n=2), personal communication (n=1) and government documents or decrees (n=3). Of these NGO references (n=2), 2 references are self-references.

2nd level foundational documents, referring to referencing done on ‘sustainable development’ or ‘sustainability’ in the articles referenced in the original article reviewed are not done 76% of the time. Indicating that only 1 in 4 articles refers to an article in which ‘sustainable development’ or ‘sustainability’ is referenced. There are two possible reasons for this: on the one hand the 1st level foundational documents are the original source of the definition of ‘sustainable development’ or ‘sustainability’ used in the article, or on the other hand the second article does not provide justification for ‘sustainable development’ or ‘sustainability’. Of the 24% (n=6) articles that do provide foundational documents in the 2nd level, all of them reference to science sources (n=18). 4 articles provide foundational documents in the 2nd level from international bodies (n=8). Of the 6 articles that provide foundational documents in the 2nd level, all 6 articles find justification in science; it is this science source that results in 2nd level foundational documents. Other sources of 2nd level foundational documents include international bodies, NGO and government, of which international bodies is the most frequently used; 2 articles (n=6).

Determinants of context

Six categories of contextual dimensions of ‘sustainable development’ are identified through a systematic semantic review. An analysis of the semantics on context is preformed following a step-wise reasoning. In the initial phase all wording independent of disciplinary understanding are identified and extracted from the articles reviewed. In the second phase these wording are categorised taking into account the disciplinary understanding of the wording dependent on the disciplinary interpretation given to the wording in the articles reviewed. A secondary categorisation is made by the identification of umbrella terminology. This resulted in the identification of six different categories; ecological conditions, human induced or natural causes of ecological degradation, human (socio-economic) conditions and/or changes, adaptation measures, social organisation and cultural conditions. Human (socio-economic) conditions and changes is subcategorised in two categories; general economy and livelihoods. General economy is further categorised in economy, profession and technology. Additionally, ‘ecological conditions’ is subcategorised in ecology, place indication, chemicals, and fauna and flora. Weights are placed on the six categories of determinants of context through mapping of argumentations of sentences and/or paragraphs that describe a single concept, discipline dependent. Mapping was conducted to reduce the length and frequency of concept description to minimize semantic bias. Each concept is categorised; the frequency of the different concepts used to discuss one category are calculate to determine the weight placed on this category.
Table 3 Interpretation to the six umbrella dimension of context in sustainable development

<table>
<thead>
<tr>
<th>Dimension of context in Sustainable Development or sustainability</th>
<th>Weight (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ecological condition</strong></td>
<td>22%</td>
</tr>
<tr>
<td>Ecological conditions are those aspects of ecosystems that allow for an objective description. Included, but not limited to, are aspect related to geography, fauna and flora, chemical elements, geology, species, geospatial aspects, hydrological conditions, meteorological conditions etc. Examples include 'wind', 'wildlife', 'tidal', 'vegetation' etc.</td>
<td></td>
</tr>
<tr>
<td><strong>Human induced or natural causes of ecological degradation</strong></td>
<td>4%</td>
</tr>
<tr>
<td>Causes of ecological degradation include aspects related to natural disasters, climate change, sea-level rise etc. Included are those wordings that refer to the nature of the cause itself or the associated consequence in that sense that it contributes to the impacts of the human induced or natural cause. Examples include 'earthquakes' and associated to this 'avalanches', 'climate change' and associated 'sea-level rise' and 'changing rainfall patterns', 'overpopulation' etc.</td>
<td></td>
</tr>
<tr>
<td><strong>Adaptation measures</strong></td>
<td>9%</td>
</tr>
<tr>
<td>Adaptation measures are related to specific actions or approaches applied to achieve sustainable development and the underlying goals directly related to these measures. This includes all wording related to the specific research context as explicated in Table 2: Disasters, natural resources, local ecological knowledge, governance, ecosystems and models. Examples include 'resource-based', 'collaboration', 'shelter', 'resolution' etc.</td>
<td></td>
</tr>
<tr>
<td><strong>Social organisation</strong></td>
<td>16%</td>
</tr>
<tr>
<td>Social organisation refers to all wording associated with intersocietal and interpersonal relationships. It includes wordings such as 'colleagues', 'married', 'indigenous', 'domestic' etc.</td>
<td></td>
</tr>
<tr>
<td><strong>Cultural conditions</strong></td>
<td>8%</td>
</tr>
<tr>
<td>Cultural conditions include wordings related to cultural expressions and traditions, and cultural values. Examples are 'freedom', 'trust', 'religion', 'equity', 'ritual' etc.</td>
<td></td>
</tr>
<tr>
<td><strong>Human (socio-economic) conditions and/or changes</strong></td>
<td>40%</td>
</tr>
<tr>
<td>Human and socio-economic conditions refers to all wording related to aspects of a person’s, society’s reality. Wordings include 'livelihood', 'budget', 'death', 'diarrhoeal' etc.</td>
<td></td>
</tr>
</tbody>
</table>

4. Discussion

4.1. What is the definition of sustainable development in Integrated Coastal Zone Management in Vietnam?

Defining ‘sustainable development’ or ‘sustainability’ is challenging, especially as the criticism expressed in literature from all disciplines contributes to the complexity of conceptually defining an approach on which no consensus exists. As the holistic, interdisciplinary nature of ‘sustainable development’ or ‘sustainability’ does not imply a disciplinary approach, this research did not attempt to find the bridge between the definitions of ‘sustainable development’ or ‘sustainability’ that exist within these disciplines, but rather the umbrella definition.

The multi-disciplinary and even contested nature of ‘sustainable development’ or ‘sustainability’ creates definitions that are highly discipline dependent. The interpretation given to ‘sustainable development’ or ‘sustainability’ is highly dependent on the case in which it is framed, i.e. research categories. This case dependency adds to the complexity of reaching a consensus defining ‘sustainable development’ or ‘sustainability’. Analysis shows that a systematic review on ‘sustainable development’ and ‘sustainability’ in Integrated Coastal Zone Management in Vietnam does not yield results on research concerning the
understanding of these notions. Research on these notions is plentiful, however within the context of Vietnam, no research is conducted on the interpretation that is (or should be) given to these notions. The complexity of reaching consensus in itself implies that perhaps a single definition cannot and should not be found that is acceptable for all viewpoints in science and management.

As this research is framed within a management approach, the translatability of management frameworks, often developed in Western societies and zeitgeists, as it is the case with Integrated Coastal Zone Management, is essential. When working within a specific management approach, that is interdisciplinary, and implies a multi-stakeholder and multi-sectoral approach, some consensus should be reached if ‘sustainable development’ or ‘sustainability’ is viewed as an underlying notion. As the sustainable nature of Integrated Coastal Zone Management is aspired, some consensus should be reached on what this sustainable nature entails in order to allineate management efforts. Research in ICZM urges for a definition; especially as a frame of reference against which ‘sustainable development’ and ‘sustainability’ efforts can be reflected.

The first part of the definition can be formulated as followed: ‘Sustainable development is described as a long term holistic, cross-sectoral, interregional, and multi- and interdisciplinary approach that requires a long term perspective and trade-offs, preferably short term, between economic, social and environmental impacts. As an endgame ‘sustainable development’ should result in a balance between these impacts’.

The definition deduced from this systematic semantic review shows that there is a common ground on which all definitions agree. This common ground can be found in the holistic, cross-sectoral, interregional and multi- and interdisciplinary nature that is inherent to ICZM. This indicates that this definition fits the needs of ICZM, but might not fit the needs of other, even though similar, approaches.

It can be seen that ‘sustainable development’ and ‘sustainability’ are time-sensitive. Research and management strategies are viewed in either a short term or long term perspective or a combination of both. The theme mostly linked to short term ‘sustainability efforts’ is trade-offs, whereas long term ‘sustainability’ is linked to stakeholder involvement.

The balance that is strived for between economic, social and environmental impacts poses some implementation and theoretical challenges. Firstly, as the definition of ‘sustainable development’ or ‘sustainability’ is case-sensitive, the theoretical understanding of social, economic and environmental impacts differs. Additionally, the case-sensitive nature also results in a difference in importance placed on these impacts. The case in which research is framed and thereby the associated management strategy influences the theoretical interpretation given to these notions. Research conducted from a natural resources perspective for example places less importance on the social and economic impacts and focuses more on environmental impacts. The tendency within this research category to focus more on environmental impacts, also results in social and economic factors being viewed more as a cause of these environmental impacts then as a goal that needs to be achieved. This leads to an imbalance, thereby contradicting the overall definition. This imbalance also entails consequences on the proposed management recommendations as this imbalance in the research
might results in managers losing necessary understanding and management efforts might be fragmented instead of embracing its holistic nature.

The second part of the definition can be phrased as followed: ‘As an initial starting point ‘sustainable development’ has an environmental dimension and appears to be viewed as a response to environmental challenges such as climate change, sea level rise, pollution, and natural disasters. On the other hand, ‘sustainable development’ has a strong socio-economic goal wherein livelihood and poverty alleviation/eradication are the main drivers of sustainable development’.

The notion of ‘sustainable development’ and ‘sustainability’ was brought forward in response to environmental, social and economic challenges that resulted from the Industrial Revolution (Mebratu, 1998). However, sustainability as a notion in itself is inherent to biological life. Species, human or other, possess the drive to sustain itself through evolution or preservation; “Earth’s mosaic of ecosystems – forests, grasslands, wetlands, streams, estuaries, and oceans – when functioning naturally, provides materials, conditions, and processes that sustain all life on this planet, including human life” (Milello and Sala, 2008, pp.11). The imbalance that exists between economic, social and environmental aspects does not exist in this reasoning, the imbalance occurs as a result of the viewpoint from which sustainability is placed on the international agenda. It is not until this problem became apparent and not ignorable, that ‘sustainable development’ was brought forward as a solution. ‘Sustainability’ is however neither seen as a solution, nor a response; it is perceived to be a prerequisite for the sustaining of human and other life.

If ‘sustainability’ is recognised as a prerequisite of human life, than the second part of the definition would no longer contradict the holistic nature as presented in the first part of the definition. One way to tackle this differentiation is to create a clear distinction between ‘sustainable development’ and ‘sustainability’. If ‘sustainable development’ is defined within the short term perspective, as a response to urgent social, economic and environmental challenges, sustainability can be viewed as the underlying notion that adheres to the holistic sustaining nature of human and other life. However, the systematic review shows that ‘sustainable development’ and ‘sustainability’ are used interchangeably, which results in an increase in complexity and a decrease in consensus and understanding. Secondly, the notion that ‘sustainable development’ has a strong socio-economic goal limits the recognition of socio-economic factors as a driving force for these environmental challenges. The current environmental challenges are human induced. Even those challenges, such as earthquakes have a strong human dimension as such that human settlement is less and less aligned with its natural surroundings, for example human settlements in earthquake prone regions.

The third part of the definition is related to different approaches as means to achieve ‘sustainable development’: ‘Responses to ‘sustainable development’ challenges are centred on a local and ecological embedding in interrelated social and ecological systems. Local embedding of ‘sustainable development’ starts from the notion that the opportunity for local voices to be heard will result in collaboration and cooperation. This should be expressed via the creation of community networks and the sharing of power between stakeholders to allow for human wellbeing in the frame of common interests. The institutional dimension of
local embedding lies within the provision and acceptance of rights and responsibilities, and the provision of international humanitarian aid and government funding. The underlying reasoning for responses to ‘sustainable development’ challenges include the necessity of community resilience as a response to community vulnerability, the need to diversify production to sustain ecosystem services, the importance placed on the sharing of knowledge, and the value given to local ecological knowledge. In general these strategies result in prevention, mitigation and adaptation efforts.’

A common ground found in this part of the definition can be framed within the notions of participation, knowledge and power sharing, and institutionalisation. These notions imply however a long term perspective as they imply social change or transformation that is a time consuming process. The proposed solutions are however short term. This reflects the lack of a distinction between ‘sustainable development’ and ‘sustainability’. The short term perspective of these solutions is understandable and not contested, as the ecological, social, economic and institutional reality implies a short time frame in which action needs to be taken both for human and environmental preservation. These solutions can however not achieve the goals of social transformation as they are implemented on a short time scale. The main reasoning for these solutions should be that they provide immediate response to human and environmental threats and not exclude or limit ‘sustainability’ and preferably enable ‘sustainability’ in a short time frame. However, related to this the notion of trade-offs, and the reality of imbalance, is essential as the time-sensitive nature of the ecological reality might require long term sustainability trade-offs that need to be remediated through simultaneous or future efforts.

4.2. Where does the definition of sustainable development in Integrated Coastal Zone Management in Vietnam originate?

The hypothesis used for the analysis of foundational documents for ‘sustainable development’ and ‘sustainability’ is: ‘sustainable development’ and ‘sustainability’ need to be, in scientific literature, correctly and sufficiently referenced in order for research to be framed within a specific worldview and receive the necessary merit. The reasoning behind this hypothesis is that in order to understand the merit of research on ‘sustainable development’ or ‘sustainability’ readers need to be able to frame, compare, validate or repeat the research (Ritchie and Lewis, 2003; Merton, 1979). In this sense, examining whether or not ‘sustainability’ and ‘sustainable development’ are sufficiently grounded differs from citation analysis (Schmith, 1981), as such that it focusses on the content of the source document rather than on the scientific merit given to these documents based on their citation rate (Chubin and Moitra, 1975) . The hypothesis entails that when research is to be framed, compared, validated or repeated readers need to be able to identify the foundational theories and paradigms on which the research is based (Ritchie and Lewis, 2003; Merton, 1979). The reasoning is that these foundational documents influence the study design, methodology and the interpretation of results. If a zeitgeist influences theories and practices within sustainability research (Abelshausen et al., 2014) then it might also influence the merit of research within this frame.

The systematic review showed that 24% of articles do not make a direct reference to a definition on ‘sustainable development’ or ‘sustainability’. Indicating that one in four articles is insufficiently grounded and
no notion can be taken as to which frame of reference ‘sustainable development’ or ‘sustainability’ is set. The remaining 76% refer to international bodies and science articles, with a five article overlap referencing both science and international bodies. Of these references, self-referencing occurs frequently, limiting the frequency of foundational documents on the definition of ‘sustainable development’ and ‘sustainability’. Second level-referencing results in an increase in self-referencing and an increase in referring to international bodies. The use of international bodies as a source of reference indicates that most articles refer to a definition of ‘sustainable development’ and less of ‘sustainability’. This implies a short term perspective, as can be deduced from the analysis of the definition of ‘sustainable development’ [see 4.1], with a strong emphasis on development and practical implications.

The analysis of foundational documents shows that ‘sustainable development’ and ‘sustainability’ are used interchangeably. As analysis of the definition of ‘sustainable development’ shows that the use of these notions interchangeably poses great challenges increased justification might limit this interchangeability. Additionally, it can be noted that foundational documents rarely address the contested nature of definitions on ‘sustainable development’ or ‘sustainability’, indicating that neither do the original articles. This systematic review shows that researchers shy away from critically analysing the sustainable nature of their research or of the management implications. The definition referred to, such as the Brundtland definition, is highly contested in scientific circles. This gap in referencing, indicating a gap in theoretical understanding or consensus concerning ‘sustainable development’ and ‘sustainability’ is understandable as research within these research categories is essential and cannot be postponed until the scientific and management community reach this consensus.

As to whether or not correct or increased justification of ‘sustainable development’ or ‘sustainability’ will lead to an increase in scientific merit and ‘sustainability’ or ‘sustainable development’ cannot be deduced from this analysis. In order to determine whether the scientific merit increases, additional research on the sustainable nature of the proposed methodologies, solutions and management implications is needed to compare whether the amount of foundational documentation grounding ‘sustainable development’ and ‘sustainability’ influences this sustainable nature. However, as consensus does not exist on what this sustainable nature entails, it is perceived not possible to provide conclusive evidence. The analysis does show that gaps exist and that researchers do shy away from critical analysis. The existence of this gap in justification is proposed as a possible explanation, although the reasoning is understandable as to why the lack of consensus on ‘sustainable development’ and ‘sustainability’ persists.

4.3. What are the determining factors of context in sustainable development in Integrated Coastal Zone Management in Vietnam?

The analysis of the different determining factors of context in sustainable development in Integrated Coastal Zone Management in Vietnam is conducted to answer the research question: “What are the determining factors of context in ‘sustainable development’ in ICZM in Vietnam?” The analysis yields results on two levels. Firstly the analysis provides insight in the current importance placed in research on the different determining factors of context. Secondly the analysis attempts to answer the following question: “Can ICZM strategies be
copied from one region to another or is there a need to translate ICZM strategies to the context in which these exist?"

Analysis shows that 6 determinants can be identified as being addressed in varying degrees in current research. The determinants are defined to describe ‘ecological conditions’ (22%), ‘human induced or natural causes of ecological degradation’ (4%), ‘adaptation measures’ (9%), ‘social organisation’ (16%), ‘cultural conditions’ (8%), and ‘Human (socio-economic) conditions and/or changes’ (40%).

The analysis of the determinants of context is based on an analysis conducted on the frequency of the semantics of the triple bottom line, i.e. social, economic and environmental. When adhering to the definition of sustainable development, context is defined using this ‘triple-bottom line’ (Elkington, 2004). The frequencies of semantics on the triple bottom line are: economic (n=234), social (n=164), environmental (including ecological) (n=609). This analysis shows that when using the triple bottom line for analysis, stronger emphasis is placed on environmental than on social (environmental-social having a 5:1 ratio) and economic (having a 2.5:1 ratio). The economic to social ratio is 1.5:1. This indicates that research on ‘sustainable development’ and ‘sustainability’ appears to place more importance on environment than on economy, and more on economy than on social.

However, when the semantics of context are analysed reframing from the limitation of semantics as with the semantics of the triple bottom line, it can be noted that a more comprehensive categorisation exists. When analysing the semantics used for context, it can for example be noted that terms such as socio-economic are used frequently (n=96), belonging neither or both to the social and economic dimensions of the triple bottom line. It is therefore determined that in order to define and/or analyse context within research and the ‘sustainability’ of Integrated Coastal Zone Management, it is deemed that a more comprehensive understanding and defining of context is needed than the use of the triple bottom line. This deduction does not however answer the question whether approaches such as Integrated Coastal Zone Management can be copied or need to be adapted in or to the context in which they are applied in order to achieve ‘sustainable development’ or ‘sustainability’.

The degree to which these determinants are addressed in current research vary with the highest weight placed on ‘Human (socio-economic) conditions and/or changes’ (40%), and the lowest weight placed on ‘human-induced or natural causes of ecological degradation’ (4%). Firstly, it needs to be noted that the identification of these determinants does not provide insight in the integrality of the determinants. Determining what this context actually is appears to be highly complex and discipline and context dependent: “How one views context appears to be depended on the context and zeitgeist in which one exists (Abelshausen et al., 2014)”. The challenge that exists is similar to the challenge concerning defining ‘sustainable development’, ‘sustainability’, and ‘community; defining these concepts brings forth challenges of a circular nature. When attempting to determine the concept of context, one needs to know the context. The semantic analysis conducted on a systemic review of ‘Integrated Coastal Zone Management’, ‘sustainability’ and ‘sustainable development’ in Vietnam can conclude that the determinants used for context are limited to these six determinants. Whether
or not research in Vietnam is integral concerning context cannot be determined from this research as comparison needs to be made between other regions and subsequently research in Vietnam needs to be conducted to determine firstly whether other determinants can be identified and whether they should be included when determining context in Vietnam. As defining context, depends on the contexts in which it is being defined, it is assumed that these determinants will differ; this differentiation may however not influence the determination of context in Vietnam.

Analysis on the determinants of context in Vietnam shows that the weights given to the different determinants correspond with the definition of ‘sustainable development’ as deduced from analysis [see 4.1]. When analysing the weights placed on ‘Human (socio-economic) conditions and/or changes’ (40 %) and ‘ecological conditions’ (22 %) and comparing these with the definition of ‘sustainable development’, it can be seen that a similarity exists. As ‘sustainable development’ is often researched from an ecological starting point with the aim of increasing socio-economic conditions it is not surprising that the dimensions of contexts taken into account correspond with the definition adhered to. ‘Environmental protection, as a component of sustainable development and consistent with poverty alleviation, is imperative in the prevention and mitigation of natural disasters’ (Tran and Shaw, 2007, pp.275).

Concerning context most weight is placed on describing ‘human (socio-economic) conditions or changes’, either as cause or as an impact of ecological challenges. These ecological challenges received the second highest importance. Human conditions or changes are highly descriptive and less importance is placed on the reasoning behind these descriptions from a social or cultural perspective. These human conditions and changes are explained from ecological perspectives; explaining why ecological conditions are less descriptive in nature and more presented as an explanation of occurring challenges. The imbalance presented in the weight given to social, economic and ecological factors and the differentiation in the descriptive nature can be explained by, and can be presented as an explanation of the imbalance between social, economic and environmental factors.

An example of socio-economic factors being viewed from an ecological perspective is the research conducted on flooding in Ho Chi Minh City in Vietnam (Tu and Nitivattanon, 2011). This research makes use of socio-economic characteristics to determine the risk for and impact of flooding within the boundaries of Ho Chi Minh City. “The District 2 is affected by flood and pollution since domestic wastewater is discharged into canals without any treatment. People in District 2 can be divided into two main groups. The first group includes rich people living in resorts and high buildings with good environmental services including new drainage system and high background construction to prevent flood and high tide. Living in lower land with un-upgraded road and drainage system, poor people who did not sell their lands and move to another place, have to live in informal houses under the effects of pollution and flood due to rains and high tides. Therefore, poor people are likely to be more affected by polluted water when flood occurs (Tu and Nitivattanon, 2011).” This research does incorporate socio-economic factors both as cause and consequences of adverse environmental events. These characteristics are presented as an explanatory factor that needs to be considered when adaptation measures are developed and implemented. However, the highly descriptive nature of these characteristics and the lack of
in-depth review, research and understanding in the underlying processes that result in and from these characteristics limits the achievement of balance between the dimension of ‘sustainable development’ and ‘sustainability’. The explanations given for the characteristics are neither incorrect nor misunderstood, their representation within the research is however highly influenced by the dimension from which this research originates, i.e. ecological. This leads to highly generic descriptions, that show a lack of in-depth understanding and that may lead to minimisation of the influence of social change and transformation processes needed to achieve sustainable adaptation measures and approaches. A clear example of this is the description given concerning the impact of flooding on water sanitation and health: “Rich people use pure water from piped water supply system, basically treated in septic tank, and discharge wastewater into sewerage system, through drainage system and to the Saigon River. Poor people mostly use water from wells (either protected or unprotected) and river, and they discharge wastewater directly into canals and Saigon River without any treatment. Therefore, poor people are more vulnerable to floodwater and pollution when flood occurs. However, in some ways, the vulnerabilities of rich people are also increased due to pollution caused by poor people. In other words, poor people create their own vulnerabilities because of low capacity, thus leading to increase in vulnerabilities of rich people. Their perception about water quality and risk from water contamination to health is still low because they are not really aware that polluted floodwater may damage their health” (Tu and Nitivattanon, 2011, pp. 69).

The reasoning behind the deduction from analysis that human conditions are explained from an ecological perspective can be explicated by the viewpoint from which ‘sustainable development’ is defined. This viewpoint is explained by the short-term dimension of ‘sustainable development’, as ecological realities require immediate action and remediation. However, the same reasoning could be brought forward for social realities such as poverty. Analysis conducted for this article does not find conclusive evidence as to why more focus is placed on remediating ecological conditions as opposed to social conditions. Indirectly, it is deemed possible that the framework of Integrated Coastal Zone Management itself lies at the basis of this reasoning. The definition of Integrated Coastal Zone Management holds a significant ecological dimension: “In order to achieve more rational management of resources and thus improve the environment, states should adopt an integrated and co-ordinated approach to their development planning so as to ensure that development is compatible with the need to protect and improve environment for the benefit of their population” (UN, 1972). Evidence from the analysis for this can be found in the absence of topic orientation in research articles on social and cultural conditions. The systematic review for example did not yield any anthropological research articles. A systematic review that is conducted independent of disciplines should yield a more equal discipline representation. The deduction that this equality does not exist, is itself considered evidence that more focus is placed on ecological conditions. Even though some articles do include sociological and anthropological data, for example Warner et al. (Warner et al., 2010), in their research the starting point from which these are viewed remains ecological: “Climate change will have a progressively increasing impact on environmental degradation and environmentally dependent socio-economic systems with potential to cause substantial population displacement. The key concerns in Less Developed Countries (LDCs) will include serious threats to food security
and health, considerable economic decline, inundation of coastal areas, and degradation of land and fresh water resources”.

Research in 1987 (Brown et al., 1987) showed that when defining ‘sustainability’, contexts need to be taken into account: “These contexts range from a social or cultural perspective, where quality of life is emphasized, to an economic perspective, with emphasis on a steady-state economy, to a biological perspective, where the emphasis is on the management and maintenance of ecosystems and species survival.” When conducting research in Integrated Coastal Zone Management it is therefore not surprising that research has a biological focus. However, this research should make these contextual assumptions explicit (Brown et al., 1987) and clearly justify the viewpoint from which research is conducted.

The determinants of context as deduced from analysis provide an overview of the contextual focus that is placed within research on Integrated Coastal Zone Management in Vietnam. This provides an answer to the research question “what are the determining factors of context in Vietnam”. Whether or not these factors are integral for contextualising Integrated Coastal Zone Management and whether or not Integrated Coastal Zone Management needs to be adapted to the context in which it exist, cannot be deduced from the analysis. In order to provide this answer, evidence is needed on the sustainability of Integrated Coastal Zone Management in Vietnam. However, as analysis has shown that no consensus exists on what this ‘sustainability’ entails, it is deemed not possible to provide this evidence at this point.

5. Recommendations

Three main recommendations are given: one concerning the distinction between ‘sustainable development’ and ‘sustainability’, one concerning the lack of sufficient justification or the framing or at least mentioning of the lack of consensus on a definition, and finally one concerning the opportunity of context to mitigate the imbalance between social, economic and environmental dimensions of ‘sustainable development’ and ‘sustainability’.

A differentiation between ‘sustainable development’ and ‘sustainability’ is needed to diminish the lack of in-depth understanding of the notion and to increase the manageability of the concept to achieve both short and long term goals. This differentiation is needed to allow for short term solutions to time-sensitive ecological and human challenges, without getting lost in a discussion on the underling goals of ‘sustainable development’ or ‘sustainability’ efforts.

It is argued that when researching ICZM or management approaches framed within ICZM, the complex nature of ‘sustainable development’ and ‘sustainability’ is not ignored but recognised as such. This complexity is a reality that is not necessarily a conflicting issue. By correctly addressing this complexity a consensus will sooner be reached. Additionally, the lack of sufficient justification, limits the scientific merit of research, and is itself a problem that should be tackled.
The notion of context as a solution for the imbalance between social, economic and environmental dimensions of ‘sustainable development’ and ‘sustainability’ should be further researched and supported by empirical evidence. It is argued in the free form question of this systematic review that ICZM cannot be copied and should be adapted to the context in which it is framed. This systematic review however did not provide a conclusive answer to this hypothesis as very little research is conducted from an interdisciplinary viewpoint. The disciplinary and case-dependent nature of research in ICZM prevents this systematic review from answering an interdisciplinary question. The hypothesis is however also not rejected as such, indicating that the answer might still lie in the lack of balance between social, economic and environmental dimensions as characteristics of context. The possibility of social and cultural reasoning to explain this imbalance and the inclusion of this dimension more in-depth in both scientific research and management efforts can be brought forward as a possible answer. However more empirical research is needed to definitively accept or deny the hypothesis of ‘translatability’.

Furthermore, the notion of context poses a challenging question as to whether or not an imbalance needs to be ‘solved’. Imbalance between social, economic and environmental aspects is a reality, and the time-sensitive nature of ‘sustainable development’ and ‘sustainability’ lies at the basis of this reasoning. For example, the current ecological urgencies might necessitate an imbalance towards an environmental viewpoint. Therefore, the notion of context should not only be addressed as a solution for an imbalance, but perhaps as the explaining factor for the need for an imbalance, placed in relation to the differentiation between ‘sustainable development’ and ‘sustainability’.

6. Conclusion

The main insight derived from this systematic review is that the lack of consensus on a definition on ‘sustainable development’ or ‘sustainability’ is confirmed. The reasons as to why there is a lack of consensus are many-fold.

A differentiation between ‘sustainable development’ and ‘sustainability’ is essential and research within ICZM should provide clear justification for these concepts in order to understand the time-frame in which the management efforts are placed. A workable definition within a specific frame, i.e. Integrated Coastal Zone Management, can however be developed as common ground. This definition might however only be workable within this frame and might result in conflicting ‘sustainable development’ or ‘sustainability’ efforts.

A workable definition, even with its limitations will focus management efforts and frame research activities. The benefit for managers can be a better framing of goals and objectives and not to get lost in the complexity of ‘sustainable development’ and ‘sustainability’.

The use of a workable definition of ‘sustainable development’ and ‘sustainability’ can also emphasise the importance of context and limit the current existing imbalance both in research and management between social, economic and environmental dimensions. The possibility of an increase in the importance placed on
social and cultural characteristics of context as a solution to this imbalance is promising as it might result in more sustainable efforts and change in the ‘sustainable development’ and ‘sustainability’ landscape.

When the notion of context is introduced it is essential to pose the question of whether the imbalance in itself is something that needs to be ‘solved’. The introduction of context in the debate on ‘sustainable development’ and ‘sustainability’ might show that an imbalance is needed as an imbalance is a reality. Further research in context is needed with the objective viewpoint as to whether or not the underlying need to balance social, economic and environmental dimensions is worth pursuing. The differentiation between ‘sustainable development’ and ‘sustainability’ and its associated complexity might lie at the basis of this.

In conclusion it can be stated that the lack of consensus in itself should not be seen as a constraining factor. The question that remains is whether there is a need for a clear definition. The defining of “sustainable development” or ‘sustainability might not be necessary for all or any discipline. If the holistic nature is accepted, if the imbalance within is understood, and if the differentiation between both is accepted, ‘sustainable development’ and ‘sustainability’ can be accepted as notions rather than clearly defined concepts.
References

Abelshausen, Bieke; Vanwing, Tom, Xuan, Tuan Le; Tu, Van Tran. 2014. Participation throughout the decades: how the zeitgeist influences both theory and practice — a case study. Procedia — Social and Behavioral Sciences, 191: pp. 1713-1717.


Armitage Derek; Plummer Ryan; Berkes Fikret; Arthur Robert; Charles Anthony; Davidson-Hunt Iain; Diduck, Alan; Doubleday, Nancy; Johnson, Derek; Marschke, Melissa; McConney, Patrick; Pinkerton, Evelyn; Wollenberg, Eva. 2009. Adaptive co-management for social–ecological complexity. Frontiers in Ecology and the Environment. 7, 95–102. Wiley Online Library


Boateng I. 2009. Development of integrated shoreline management planning: a case study of Keta, Ghana: proceedings of the federation of international surveyors working week 2009- Surveyors key role in accelerated development, TS 4E, Eilat, Israel, 3–8 May”


Buu DC. 2002. Vice-director, Minh Hai Wetlands Forest Research Center, Camau Province, Vietnam. Personal communication


Dixon-Woods, Mary; Bonas, Shiela; Booth, Andrew; Jones, David R.; Miller, Tina; Sutton, Alex J.; Shaw, Rachel L.; Smith, Jonathan a.; Young, Bridgit. 2006. How can systematic review incorporate qualitative research? A critical perspective. Qualitative research, 6(1), pp. 27-44. SAGE Publications.


Hemingway, Pippa. 2009. What is a systematic review? Evidence-based medicine. www.whatisseries.co.uk


Hue, Do Trinh (Ed.), 2003, Atlas des lagunes de Thua Thiên Huế. Connaissance pour un développement durable, Hue University, College of Sciences, and Université de Lille I, pp.111"

Intergovernmental Panel on Climate Change. 2001. Climate change 2001: impacts, adaptation and vulnerability: contribution of working group II to the third assessment report of the intergovernmental panel on climate change. Cambridge University Press, Cambridge

Intergovernmental Panel on Climate Change. 2007. Climate change 2007: impacts, adaptation and vulnerability: contribution of working group II to the fourth assessment report of the IPCC. Cambridge University Press, Cambridge


ISDR. 2002. Disaster reduction and sustainable development: understanding the links between vulnerability and risk related to development and environment. Background document for the World Summit on Sustainable Development (WSSD) No. 5, revised version 17 May 2002


Kakonen, M. 2008. Mekong delta at the crossroads: more control or adaptation? Ambio. 37, 205-2013


Steve


Steven


91
Chapter 5: Longitudinal study in Integrated Coastal Zone Management - Evolution in the knowledge sharing and participation landscape.

Abstract

Knowledge sharing and participation have long been accepted as necessary paradigms for sustainable integrated management of coastal zones. The disunity between the theory and practice, with the additional dimension of zeitgeist and time-sensitivity however creates additional complexity. A longitudinal study is conducted based on qualitative research, respectively in 2010 and 2013. Coding analysis is used in combination with document analysis to show emerging trends and reflecting these back to the changing reality. The longitudinal study revealed a shift from a combinatory top-down approach to a zig-zag approach indicating a divergence between theory and practice, understanding and implementation. Furthermore, the notions of change, power and reluctance emerge as underlying paradigms for the complexity. The dimensions of zeitgeist and time-sensitivity frame the complexity in the context of Vietnam by expressing the influence of “Western” theories and practice, “Western” ideologies of democracy and decentralisation, and “Western” views of and influence on environmental management. The longitudinal study reveals that the introduction of the “zig-zag approach” is the Vietnamese answer to these challenges, a misalignment between time-sensitivity and time-reality however restrict it from being the conclusive answer.

Keywords: Integrated Coastal Zone Management; Participation; Knowledge sharing; Longitudinal study; Sustainability.
1. Introduction

In the last few decades Integrated Coastal Zone Management has known a transformation from a “prediction and control” approach to a more participatory approach (Pahl-Wostl; Mostert and Tabara, 2008). This transformation resulted from and in a shift towards sustainability that implies a holistic, eco-system approach (Cummins and McKenna, 2010). Within this change in discourse, the discussion on theory versus practice has been central. The theory versus practice discussion has translated for example in research on the science-management divide (Roux et al., 2006), the scientific merit of local ecological knowledge (Ruddle and Davis, 2011), and the integration of different knowledge types (Raymond et al., 2010). Already in 1995 Magerum and Born (1995) identify the gap in theoretical conceptualisations in environmental management as being the question how. Theories on environmental management approaches do not provide conclusive insight in the question how (Magerum and Born, 1995); being in the form of models or in the form of research on the merit of this how. In response to this gap in theory new paradigms have emerged such as change management or transition management, adaptation, transformation and its various practical approaches; models and frameworks. The underlying discourse being that these management approaches will reduce entropy (Hayes, 2002).

As a result of this consensus on the need to pose the question how, this research on participation and knowledge sharing in Integrated Coastal Zone Management attempted to find an answer to this question in a specific context, i.e. Vietnam. Research within Integrated Coastal Zone Management identifies participation and knowledge sharing as prerequisites for sustainable development (Bruckmeier, 2005; Treby and Clarck, 2004; Coffey and O’Toole, 2012; Falaleeva et al. 2009). The use of applied research, in whatever form, is deemed essential to provide insight in the gap in theory on how (Bickman and Rog, 2009). This applied research however led to an understanding that when asking the question how, underlying theories and paradigms should be questioned simultaneously.

Participation and knowledge sharing were initially purely theoretically defined within the frame of environmental management. Wherein, participation is deemed an enabler for the potential for realistic and holistic sustainable management through behaviour change (Treby and Clarck, 2004). Hereby, the theory on participation adheres to the different types of participation (Treby and Clarck, 2004); delegation, education, therapy, informing, consultation, placation, and participation. Preference is given, although not fully adhered to, to the aforementioned types of participation over other accepted theories on participation such as ‘the ladder of participation’ (Arnstein, 1969). Even though still accepted for research on participatory practices (e.g. Stout, 2010) this theory is deemed inappropriate as the ladder has an end goal: i.e. the highest rung ‘citizen control’, and preference is given to a self-(re)examining circle as Treby and Clarck (2004). The concept participation is subject to the zeitgeist in which it exists (Abelshausen et al., 2014) however focus is still predominantly set on public participation whereas a more integrated approach is needed.

Concerning knowledge sharing, the description of Roux et al. (2006) is adhered to; defining knowledge transfer as knowledge sharing or bi-directional knowledge flows. Roux et al. (2006) divides the diversity of knowledge in
five knowledge domains: fundamental or basic research, applied research, operational management, policy formulation and local knowledge. Roux et al. (2006) however lack the inclusion of tacit and explicit dimensions of knowledge to its full extent.

As this article entails research on the concepts of participation and knowledge sharing within a specific context, i.e. Vietnam, the concepts are viewed within the frame of Integrated Coastal Zone Management, Marine Protected Areas, and Locally Managed Marine Areas and Biosphere reserves. Research is conducted to explore the concepts of participation and knowledge sharing by examining the influence of cultural, social, environmental and economic changes or consistencies since 2010. Specifically, a longitudinal study and document analysis provide insight in the local, practical changes that may have occurred, the embedding of changes in understanding, and the implementation and approach in governance and government systems.

2. Methodology

A qualitative study design was used in 2010 and 2013 to generate baseline data on the status of knowledge in and understanding of ICZM, its associated methodologies, and the underlying concepts of knowledge sharing and participation that support the goals and objectives of ICZM in Vietnam. Three case studies were conducted: Integrated Management of Lagoon Activities (IMOLA) programme, Ran Trao Locally Managed Marine Area (LMMA) and Hoi An – Cù Lao Chàm Marine Protected Area and Biosphere Reserve (MPA-BR). The research areas are located in central Vietnam, making them subject to the same or similar ecological and climatic challenges and specificities. At the same time this places them within the same region, i.e. Miền Trung, limiting social and cultural differentiations based on regional diversity in Vietnam. A comparison between the trends identified in the longitudinal study and the document analysis is conducted to assess the sustainability. Additional analysis is conducted to evaluate the newly passed laws emanating from the national plan.

2.1. Data Collection

Two rounds of data collection were organised based on a qualitative research design using semi-structured interviews with stakeholders in ICZM from the national, province, district and commune levels of government. The research is conducted in the socio-political context of the Socialist Republic of Vietnam; one research area is set to Thừa Thiên Huế province, with the Integrated Management of Lagoon Activities (IMOLA) programme as case study. The research in Thừa Thiên Huế was conducted in 2010 (Abelshausen et al., 2015). The second round was organised in 2013, with two case study sites, the Locally Managed Marine Protected Area Ran Trao in Khánh Hòa province and the Hoi An - Cù Lao Chàm Marine Protected Area and Biosphere Reserve in Quảng Nam province. Data was collected using semi-structured interviews in English and Vietnamese with the aid of a translator of IMOLA, two translators from the Centre of Marine life Conservation and Community Development (MCD) programme and three translators from the Cù Lao Chàm Management Board. The translators were chosen based on their level of understanding of the research topic, experience with translation and familiarity with the local dialect. Translators received a short training to familiarize themselves with the research methodology and semantics of the research questions. Interviews were preceded by an introduction letter from either the national government or a Vietnamese NGO. A research stay of about 6 months preceded the
interview phase to allow for the embedding in the local communities to increase trust and limit bias based on social or political desirability. Creation of trust between ‘outside’ translators and the community was also needed, although not always achieved due to logistical restrictions. Interviews were conducted in the homes or offices of the respondents in a private setting. A third round encompasses a document analysis of Decision 2295/QD-TTg (VNA, 2012) entailing the integrated coastal management strategy for the 2015-2020 period; with a vision to 2030.

2.2. Respondents

Two groups of stakeholders were identified [Table 4]: national level stakeholders (n=11) that comprise of national government institutes (2010: n=2; 2013 n=5), universities (2010 n=1; 2013 n=3) and representatives of ICZM programmes (bilateral programmes) (2010 n=3; 2013 n=1), and local level stakeholders (n=16) organised according to case study sites (IMOLA (n=8), LMMA (n=3) and MPA (n=5)). These stakeholders can be categorised into provincial (IMOLA n=1; LMMA n=1), district (IMOLA n=3; LMMA n=2; MPA n=3) and commune (IMOLA n=2) stakeholders, mass organisations (IMOLA n=1; MPA n=2) and ICZM programmes (local bilateral programme) (IMOLA n=1). The interview sample is generated through snowballing and highly dependent on the type of case study. Dependent in that sense that the management approach for each case study determines the stakeholders involved.

2.3. Instrument

In both data gathering rounds in 2010 and 2013 semi-structured interviews were conducted using generative questions that aid but not limit the research (Corbin and Strauss, 1990; Barnes, 1996)). These generative questions served the initial purpose of gathering information on the function of the interviewee and his/her organisation or institute. Both data gathering rounds i.e. 2010 and 2013 comprised of questions regarding participation and knowledge sharing and their position within the ICZM framework. Additional questions were asked on the interviewees’ positions as a stakeholder and in regards to other stakeholders. The semi-structured interviews comprised of open questions allowing freedom for the interviewees to give their views on the understanding and challenges related to participatory ICZM, at the time of the interview and with a future perspective. The deduced labelling structure is presented in Figure 4, encompassing the various labels and their interrelationship. The labelling are presented in a narrative manner and presented within their interrelationships and accompanied by quotes when deemed appropriate.

2.4. Data analysis

Data was analysed using content (labelling) analysis applied to the two data sets. Longitudinal study on qualitative data requires a complex analysis process and therefore coding was used as it allows for managing and organizing qualitative data and allows for the identification of relationships between theories and case-by-case comparisons (Gibbs, 2007). Coding analysis is an accepted method for analysing qualitative data (Lofland et al., 2005; Miles and Huberman, 1994; Taylor and Bogdan, 1998).
Table 4 Stakeholder sample in Integrated Coastal Zone Management in Vietnam 2010-2013

<table>
<thead>
<tr>
<th>National Government Institutes</th>
<th>Year</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Level Stakeholders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ministry Of Natural Resources and Environment (MONRE), Vietnam</td>
<td>2010/</td>
<td>Male</td>
</tr>
<tr>
<td>Administration of Seas and Islands (VASI)</td>
<td>2013/</td>
<td></td>
</tr>
<tr>
<td>Administration of Seas and Islands (VASI)</td>
<td>2016</td>
<td></td>
</tr>
<tr>
<td>Ministry Of Natural Resources and Environment (MONRE), Vietnam</td>
<td>2013/</td>
<td>Male</td>
</tr>
<tr>
<td>Administration of Seas and Islands (VASI)</td>
<td>2016</td>
<td></td>
</tr>
<tr>
<td>Ministry of Agriculture and Rural Development (MARD), Directorate of Fisheries</td>
<td>2013</td>
<td>Male</td>
</tr>
<tr>
<td>Ministry of Agriculture and Rural Development (MARD), Vietnam Institute of Fisheries Economics and Planning</td>
<td>2013</td>
<td>Female</td>
</tr>
<tr>
<td>Bureau of Seas and Islands Management Use, Vietnam Administration of Seas and Islands</td>
<td>2013</td>
<td>Female</td>
</tr>
<tr>
<td>Institute of Marine Environment and Resources (IMER)</td>
<td>2010</td>
<td>Male</td>
</tr>
<tr>
<td>Universities</td>
<td>2013/</td>
<td>Male</td>
</tr>
<tr>
<td>University of Science (HUS)</td>
<td>2013</td>
<td>Male</td>
</tr>
<tr>
<td>Center for Environmental Research and Education, Hanoi National university and Education (HNUE); MAB Vietnam</td>
<td>2016</td>
<td>Male</td>
</tr>
<tr>
<td>Mangrove Ecosystem Research Center, Hanoi National University of Education (HNUE)</td>
<td>2013</td>
<td>Male</td>
</tr>
<tr>
<td>Hue University of Agriculture and Forestry (HUAF), Common Pool Resource Management (CPRM)</td>
<td>2010</td>
<td>Male</td>
</tr>
<tr>
<td>ICZM programmes</td>
<td>2013</td>
<td>Male</td>
</tr>
<tr>
<td>Deutsche Gesellschaft fur International Zusammenarbeit (GIZ)</td>
<td>2010</td>
<td>Male</td>
</tr>
<tr>
<td>Vietnam Netherlands Integrated Coastal Zone Management (VINICZM)</td>
<td>2010</td>
<td>Male</td>
</tr>
<tr>
<td>Nordic Assistance to Vietnam (NAV)</td>
<td>2010</td>
<td>Male</td>
</tr>
<tr>
<td>Netherlands Climate Assistance Programme (NCAP)</td>
<td>2010</td>
<td>Male</td>
</tr>
<tr>
<td>Local Level Stakeholders</td>
<td>2010</td>
<td>Male</td>
</tr>
<tr>
<td>Thừa Thiên Huế</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provincial People’s Committee (PPC)</td>
<td>2010</td>
<td>Male</td>
</tr>
<tr>
<td>Department of Natural Resources and Environment (DONRE)</td>
<td>2010</td>
<td>Male</td>
</tr>
<tr>
<td>Department of Agriculture and Rural Development (DARD), Provincial Project Management Unit of Fishery Sector Programme Support (FSPS) II, Danish International Development Agency (DANIDA)</td>
<td>2010</td>
<td>Male</td>
</tr>
<tr>
<td>Division of Agriculture and Rural Development (DARD)</td>
<td>2010</td>
<td>Male</td>
</tr>
<tr>
<td>Sub-department of Flood Control (Sub-DFC)</td>
<td>2010</td>
<td>Male</td>
</tr>
<tr>
<td>Sub-department of Capture Fisheries and Fisheries Resources Protection (Sub-decarif)</td>
<td>2010</td>
<td>Male</td>
</tr>
<tr>
<td>Integrated Management of Lagoon Activities (IMOLA)</td>
<td>2010</td>
<td>Male</td>
</tr>
<tr>
<td>Women Union (WU)</td>
<td>2010</td>
<td>Female</td>
</tr>
<tr>
<td>Ran Trao</td>
<td></td>
<td></td>
</tr>
<tr>
<td>District People’s Committee</td>
<td>2013</td>
<td>Male</td>
</tr>
<tr>
<td>Department of Agriculture and Rural Development (DARD)</td>
<td>2013</td>
<td>Male</td>
</tr>
<tr>
<td>Department of Overseas Affairs</td>
<td>2013</td>
<td>Female</td>
</tr>
<tr>
<td>Cù Lao Chàm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MPA staff Cù Lao Chàm</td>
<td>2013</td>
<td>Male</td>
</tr>
<tr>
<td>MPA staff Hoi An</td>
<td>2013</td>
<td>Female</td>
</tr>
<tr>
<td>MPA staff Hoi An</td>
<td>2013</td>
<td>Male</td>
</tr>
<tr>
<td>Farmers Union (FU)</td>
<td>2013</td>
<td>Male</td>
</tr>
<tr>
<td>Women Union (WU)</td>
<td>2013</td>
<td>Female</td>
</tr>
</tbody>
</table>
The two data sets underwent the same rigorous process of coding at the time of data gathering, respectively 2010 and 2013. In 2015 an additional analysis round was conducted to perform a longitudinal study and allow for the emergence of underlying change processes. A document analyses is combined with follow-up interviews conducted in 2016 with 4 National Level Stakeholders; 2 stakeholders from government institutes and 2 stakeholders from universities. Quotes are added for clarification when the sensitivity of the quote does not conflict with the established trust between the researchers and the respondents.

Figure 4 Qualitative labelling analysis structure: Longitudinal study in Integrated Coastal Zone Management

3. Results

The longitudinal study reveals 4 major, interrelated changes that occurred during the 2010-2013 period: changes in top down and bottom up approaches; changes in levels of understanding; the sustainability of implementation at provincial level; and changes in durability between NGO based and government imbedded MPA’s.
3.1. Top-down Bottom-up approaches

The analysis of the first research phase in 2010 revealed a clear division between a non-participatory approach and a participatory approach (Abelshausen et al., 2015). This division is parallel with a division between a top down and a combinatory top down-bottom up management approach. In 2010, this division resulted from the understanding that the traditional hierarchical governance system of Vietnam does not lend itself easily for a sustainable management approach. However, as this traditional system is a reality, the understanding existed that a complete reversal of power is neither possible nor desirable. Therefore, a combinatory top down-bottom up approach was proposed as a possible sustainable pathway.

In 2013, this understanding is put in reality with a clear exception at national level. At national level specific mention is made of and validity is given to bottom-up initiatives. This exception is due to what is referred to in 2013 as a “zig-zag” approach [Figure 5]. This “zig-zag” approach entails the sharing of bottom-up success stories, independent of national policy implementation through Vietnamese NGO’s and universities to the governing agencies at national level, resulting in policy change. The differentiation with a combinatory top down-bottom up approach lies in the chronology of this approach. Whereas the “zig-zag” approach initiates at local level (i.e. bottom), a combinatory approach implies a relative simultaneous occurrence of bottom up and top down initiatives. The approach is zig-zag in that sense that a manoeuvring and recoupling back and forth between the different levels of government, and the NGO’s and universities occurs. Instead of following the straight line of the governmental ladder, the success-stories are, after each step, recaptured by the NGO’s and governments and brought to the next level by these respective NGO’s and universities themselves. This is done opposed to letting the government levels themselves move (or not move) the success-stories up the ladder. This approach is used to on the one hand speed up the process and on the other hand make sure that the success-stories do not get lost along the way. Although this “zig-zag” approach was already in effect in 2010, the understanding of the importance and possible positive outcomes had not yet become clear. “We bring up pilot with bottom up with success and good for make them aware to change perception”

It is perceived by stakeholders that concerning the definition and understanding of Integrated Coastal Zone Management (ICZM) a differentiation can be noted between theory and practice. In theory, according to stakeholders, a comprehensive understanding of ICZM is achieved with national level stakeholders as they include the concepts of participation and knowledge sharing, i.e. co-management in their understanding. Lower level stakeholders, i.e. province, district and commune stakeholders, have a less comprehensive understanding of ICZM in theory and have generated an understanding that incorporates ICZM as a sectoral approach. Co-management is viewed as a separate approach that serves the purpose of building relationships between local people, the government and management (Abelshausen et al., 2014).

3.2. Changes in level of understanding

When analysing, stakeholders’ perceptions on ICZM in practice, reluctance for change is introduced as an explanatory factor for a divergence in interpretation. National level stakeholders are perceived to be more reluctant to change due to the top down decision making tradition in Vietnam, contradicting their
understanding of the importance of the inclusion of participation and knowledge sharing in ICZM approaches. At lower level, participation and knowledge sharing are achieved to a certain degree, even though a profound understanding of the concepts is perceived to be non-existing.

Analysis is 2013 revealed that little change occurred in the level of understanding of what is ICZM. A more in-depth understanding can be noted at lower level on the importance of the implementation of these concepts and the impact current environmental issues have. This understanding is limited to the implementation of various tools and the possible positive outcomes they may have. Understanding as to why certain tools yield certain results is lacking. A second change that can be noted is a change in understanding at provincial level, contradicting the relationship between power and reluctance for change.

**Figure 5 Combinatory top-down - bottom-up hierarchical approach (red) and the "zig-zag approach (bleu)"**

![Diagram of ICZM stakeholders and hierarchy]

**3.3. Province**

In 2010, the differentiation between sub-level stakeholders (provincial, city and district) was minimal. In 2013 however, this differentiation became more outspoken, with a clear differentiation between provincial level, city-district level and national level. Whereas in 2010 the theoretical understanding of these governmental stakeholders at provincial level was limited, the practical implementation yielded more opportunities for
sustainable development. In 2013 it can be noted that the level of theoretical understanding has remained similar, the practical implementation yields however less opportunity and even counteractions are identified.

3.4. NGO versus Government Embeddedness

A fourth change that occurred between 2010 and 2013 is that a significant difference can be noted between the durability of community based managed MPA’s and government managed MPA’s. The Integrated Management of Lagoon Activities (IMOLA) programme, an internationally supported programme is no longer active and imbedding in the local government system is limited. Similar observation can be made from the Ran Trao MPA, a Vietnamese NGO supported community based MPA. The Ran Trao MPA is currently highly undermanaged and imbedding in the local government is almost non-existent. The Cù Lao Chàm MPA on the other hand is clearly embedded in the government system and is now considered as one of the most successfully managed MPA’s in Vietnam. The associated changes are the dissolving of financial and technical support by the IMOLA project in Thừa Thiên Huế and the Vietnamese NGO, MCD in Ran Trao.

The discussion on NGO versus government involvement is related to an emerging understanding resulting from the 2010 analysis. In 2010, stakeholders’ perceptions indicate that a differentiation in geographical scope results in fragmentation that implies an increase in complexity. However it also yields the opportunity for a more inclusive multi-stakeholder approach. Official government regulations set minimum requirements on MPA’s concerning area coverage to be included in the National MPA network. This results in the Ran Trao Marine Protected Area to be excluded from the MPA Network and therefor experience less imbedding in the government system. Similar observations can be made for the Thừa Thiên Huế lagoon area that due to its ecological specificity is not classified as an MPA.

3.5. Policy and legal landscape

The National Plan for Environmental and Sustainable Development (1991) heralded a change in the Integrated Coastal Zone Management landscape in Vietnam. It is however not until 2014 that a first national plan was agreed upon, encompassing all 28 coastal provinces. Decision 2295/QD-TTg (VNA, 2012) entailing the integrated coastal management strategy for the 2015-2020 period; with a vision to 2030 was signed on December 17, 2014. Since the early 1990’s several policies and an extensive number of external programmes have been introduced in Vietnam. The variety in policies and programmes and the lack of a national plan resulted in a fragmented Integrated Coastal Zone Management (Abelshausen et al., 2015).

Decision No. 2995

Decision No. 2995 encompasses the approval of the Integrated Coastal Zone Management Strategies in Vietnam up to 2020, with orientations towards 2030 (VNA, 2012). The decision is, among others, the precursor of the Law on the Sea of Vietnam and the sustainable exploitation, use and protection strategies of marine resources up to 2020, with a vision to 2030. It is developed at the proposal of the Minister of Natural Resources under the Ministry of Natural Resources and Environment (MONRE).
The approval of this decision, in general considered a positive step, raises some specific concerns. The opportunities created from this decision lie in the development and approval of the Law of resources, marine environments and islands. The challenges related to these opportunities can be found firstly in the ongoing disunity between the Ministry of Natural Resources and Environment (MONRE) and the Ministry of Agriculture and Rural Development (MARD). Secondly, the vision and objectives of the decision are very ambitious and concern needs to be given to the feasibility of the implementation of this decision.

Disunity between ministries

The disunity is expressed by stakeholders as a cause for great concern as it leads to the creation of policies and legislation that have no implementation power. MONRE is considered the ministry responsible for the management of fisheries in Vietnam and has placed Marine Protected Areas as their focal point. MONRE is deemed the ministry responsible for marine resources. Besides, the obvious risks of overlap between these responsibilities, the disunity finds its expression in implementation as MARD is significantly more represented at local administrative branches, i.e. province, district and commune. MONRE on the other hand lacks local representation and finds itself incapable of implementing its own policies and legislation. Furthermore, a lack of cooperation between the two ministries increases the complex relationship. “That is a big thing in Vietnam ...

Feasibility

A decision taken on Integrated Coastal Zone Management should encompass an all-inclusive interdisciplinary approach. This however raises significant questions concerning the feasibility of such a decision.

The decision includes ambiguous semantics such as ‘...reasonable exploitation and use of integrated coastal resources...’ and ‘... to perfect policies and legal documents...’ Very little insight is provided in how this is actually to be achieved. Besides a delegation of responsibilities to the appropriate ministries no specific implementation measures are presented and no specific targets are set. The description of the main tasks related to this decision makes use of the same ambiguous semantics. This limits the goals of the decision to general formulations; ‘formulating and promulgating policies and legal documents about ICZM, sustainably exploiting and using natural resources; preserving nature and biodiversity, and preventing and controlling pollution, reducing the losses resulting from natural disasters, responding to climate change and sea level rise’.
Regional cooperation

Decision No. 2995 is unique in that sense that it is the first official administrative decision on marine and coastal zone management that encompasses all 28 coastal provinces and does not present a pilot approach in target provinces. This inclusive nature of the decision is a positive step; however the question needs to be asked whether the inclusion of all 28 coastal provinces is not premature. Stakeholders indicate that not only cooperation between ministries is cause for concerns but also cooperation between provinces. “One system for the entire coast does not work, that system is too big ... they decentralize the power from the state to the provincial level, but they do not have effective administrative system and also effective law enforcement.”

Decision No. 2995 goes even a step further and expands its objectives to the East Asia Sea and PEMSEA (Partnership in Environmental Management for the Seas of East Asia).

Law on Fishery

Law No. 82/2015/QH13 The Law of the resources, the marine environment and islands is a specific outcome of Decision No. 2995; “this law regulates the integrated management of resources and environmental protection of seas and islands: the rights, obligations, responsibilities of agencies, organisations and individuals in the integrated management of resources, protecting the marine environment and maritime Vietnam.” (VNA, 2012)

4. Discussion

4.1. The divergence between theory and practice, understanding and implementation within Sustainable Integrated Coastal Zone Management

The divergence in understanding between national level stakeholders and lower level stakeholders and the shift that occurred between 2010 and 2013 at province level and district/commune level results in a questioning of the result as analysed in 2010. The differentiation between theory and practice can be simplified as high level stakeholders having a high understanding in theory and a low understanding in practice. Low level stakeholders on the other hand have a low understanding in theory and a high understanding in practice. With the additional differentiation as noted in 2013 between province and district/commune. The question that needs to be asked here is that if understanding is low in theory but high in practice; what is the validity of this theory?

When discussing and researching the concepts of participation and knowledge sharing the concepts of sustainability and sustainable development emerge. When these concepts are introduced, two questions first needs to be asked; what are these concepts and what is the impact of these concepts on the understanding of the divergence between theory and practice. For this article, we will not initiate a conceptualisation of sustainability and sustainable development; we will however discuss the influence of these concepts on the discussion between theory and practice.

If lower level stakeholders have a limited understanding of ICZM and the associated concepts of participation and knowledge sharing then what is the merit of these concepts. The introduction of the “zig-zag” approach in 2010 and the application in 2013 questions the underlying goals of the theory on ICZM, participation and
knowledge sharing. As described in 2010, the ideal participation and knowledge sharing scenario is the combinatory top down-bottom up approach. As it can noted this approach diverges from the “zig-zag” approach, that is perceived to have yielded great success in Vietnam. If this “zig-zag” approach, applied at low level, i.e. bottom, yields success than why is the combinatory approach the “aimed-for” approach. The questions that arise are; is understanding necessary or even contradictory at this level, does knowledge need to be shared, and is participation to its ideal level (co-decision making) preferred or does the context of a country influence this preference to such an extent that theories on participation and knowledge sharing need to be reconceptualised?

4.2. Change, reluctance and power as underlying notions of system thinking within Integrated Coastal Zone Management

In relation to the concepts of participation, knowledge sharing, sustainability and sustainable development, the concept of reluctance is introduced. The analysis of 2010 resulted in the understanding that change processes play a major role, specifically as it relates to the notion of power. Analysis in 2010 resulted in putting the different stakeholders, their understanding and their level of implementation of ICZM in practice to the different stages of change (Abelshausen et al., 2015). The 2010 analysis revealed that there is a clear link between the level of power of stakeholders and their reluctance for change. Specifically, the 2010 analysis revealed that the higher a stakeholders finds himself in the traditional decision making structure of Vietnam, the higher his level of power is, and the higher his reluctance to change is.

The differentiation between province, city-district and national level as expressed in 2013 contradicts the relationship between power and understanding. The decentralisation policy in Vietnam should lead to a more in-depth understanding at provincial level as gradually more power is given to them. Analysis of provincial level stakeholders concerning understanding revealed that understanding did not improve even though power increased. A contradictory insight is however deduced from the analysis of district level stakeholders as they indicate that a change of administrative responsibility from province to city level resulted in increased difficulties as understanding of the notion is perceived to be less at district level than province level. This contradiction can however be explained first by the lack of understanding by the district level themselves, and by a misperception of understanding of the differentiation between theory and practice. This can occur because district level stakeholders might experience a lack of understanding in practice, whereas the understanding with higher levels is more theoretical. Furthermore, the actual shift in administrative responsibilities can account for the lack of practical understanding; it however does not explain the observed lack of theoretical understanding as the level of power increases. A possible explanatory factor for this is the limited time-frame of the longitudinal study itself. A difference of 3 years is relatively low to increase theoretical understanding. A second possible explanatory factor is the limited support given to provincial level stakeholders for the implementation of decentralisation. Stakeholders indicate that very little support on theoretical understanding is given, for example trainings. Support is given in the form of logistical and administrative trainings. Stakeholders express this as the illusion of decentralisation due to international
influence praising the benefits of decentralisation. Stakeholders make the comparison with the conditional (democratic) international development cooperation, that imposes Western values in an Eastern society.

The increase in power should result in an increase in understanding as deduced from the 2010 analysis. However, the analysis of 2013 revealed that on the provincial level theoretical understanding remained the same. However, practical understanding reduced: indicating that perhaps it is not the level of theoretical understanding that is related to an increase in power, but perhaps it is the practical understanding that decreases with power. This entails that when power is decentralised the understanding of the decentralised authority does not result in an increase in understanding. The higher the level of power, the higher the reluctance for change appears to be. If this reluctance for change is increased with an increase in the level of power practical implementation is decreased. So giving lower level governments more power, appears to result in less practical implementation: contradicting the perceived positive outcomes of decentralisation. The difference at a lower level of district-city, even though the perception differs, appears to support this reasoning. It is perceived that these government levels have a less theoretical understanding, the actual understanding is however practical. Implicating that practical understanding is again decreased when a level of government is given more power (decentralised as is the case with Hoi An – Cù Lao Chàm MPA-BR). This realisation is supported by a pilot project researching the effect of recentralisation of what they call a corruption induced failing of decentralisation (Malesky, Nguyen and Tran, 2014). However, what can be deduced is that perhaps the merit of the theoretical understanding is overrated, and perhaps wrong in comparison to the reality of practical implementation. What is observed is that when concepts such as participation and knowledge sharing are implemented, the theoretical understanding (framed within a western zeitgeist) is not that important, as the concept of participation and knowledge sharing at local levels are implemented according the context specificity and not according to the theory: leading to a clear differentiation between theory and practice. This is accepted in literature with the exception that in literature this gap is perceived needed to be bridged to align practice with theory, whereas this research shows that perhaps theory needs to be aligned with practice. The understanding that the concept of participation and knowledge sharing are framed within a certain zeitgeist supports this reasoning. As Integrated Coastal Zone Management was introduced in Vietnam mostly in the frame of development cooperation a certain bias is given to Western developed theories, paradigms and ideologies. The need to translate these concepts into the local specificities is supported by the analysis as practical understanding within a local specificity does result in success stories and as it was deduced from analysis, these success stories through the ‘zig-zag approach’ lead to institutional change thereby providing more opportunities for implementation.

The notion of power introduced a complex issue that moves far beyond the 1960’s notion of power that prohibits and that prevents people from doing something (Faucault in Kritzman, 1998). Ecological politics have moved away from this notion of power and even from power as described by Foucault (1977) and adhere to power as ‘the control that one party has over the environment of another party’ (Byrant, 1997, p. 11). It is however the same Foucault that states that in our current zeitgeist the question that is adhered to most is that of ‘who exercises power’. It is however needed, at the same time, to answer the question ‘how does it happen’
(Kritzman, 1998). “Yes, the strategies, the networks, the mechanisms, all those techniques by which a decision is accepted and by which that decision could not but be taken in the way it was (Foucault in Kritzman, 1998, p. 104). The notion of power and the clash between ‘Western’ and ‘Eastern’ views, the clash between ecological, social and economic views of power lies at the basis of this complexity. The complexity lies in the ‘but’, could not but be taken in the way it was; the complexity lies in the ontology.

4.3. Centralisation, decentralisation and recentralisation

Decentralisation in the Socialist Republic of Vietnam is based on contradictions. Vietnam as a socialist republic is perceived to have a strong ideology of centralised power that is coupled with a great respect for grassroot actions as is expressed by Ho Chi Minh: “Cấp xã là gần gũi nhân dân nhất, là nền tảng của hành chính. Cấp xã là được việc thi mọi việc đều xong xuôi (the commune level, being closest to the people, is the foundation of our public administration. If the commune level works, then all our work will proceed smoothly)”. The central power of Vietnam has however never been as straight forward as perceived. Vietnamese proverbs such as: “Phép vua thua lê lăngt (the emperor’s rule stops at the village gate)” shows that local governments and communities have long been ‘creative’ with centralised powers (Fritzen, 2006). The decentralisation policy in Vietnam was central in the 1986 Đổi Mới, the socialist-economy reform policy. The merit of centralisation and decentralisation within modern environmental policy debates dates back to the 1960’s (Coenen, 1998). Coenen et al. (1998) argue that two groups can be identified; those that adhere to a strong central power, replacing democratic rule and those that see centralisation as the root cause of environmental problems, proclaiming a need for decentralisation and participation. The division is however not straightforward. The contradicting Vietnamese reality even indicates that merit can be given to both. The link made between decentralisation and participation supports this as in Vietnam participation supports a contradictory reality. One that implies a need for centralisation and one that implies a need for decentralisation (Abelshausen et al., 2014). In 2008, the Vietnamese National Assembly passed Resolution 26. This resolution allows for a pilot test on removing intermittent governing entities, i.e. District People Committees (Malesky, Nguyen and Tran, 2014). Results from this pilot show that decentralisation in Vietnam leads to improvements in themes preferred by the central government, whereas issues important for people such as education experience negative consequences (Malesky, Nguyen and Tran, 2004). This pilot finds itself at the heart of the de-, re-, centralisation debate, and supports the questioning of the decentralisation euphoria of the 1990’s. The complexity, non-conclusiveness and argumentation against decentralisation are supported by stakeholders: “… the central government they do not want to subsidize or allocate or decentralise the power to the local social organisations. That is terrible thing. You know the high people in the central government, they do not want to socialise and decentralise the power to the local level” (stakeholder quote). The timelessness of this debate currently leads to non-conclusive theories, leaving the environmental policy agenda open to interpretation.

This reasoning is further explicated by the duality in attitude of stakeholders in Integrated Coastal Zone Management in Vietnam (Abelshausen et al., 2014). Research has shown that stakeholders in Vietnam have the simulations attitude of “waiting for the government to provide” and the “we have waited long enough
attitude”. Stakeholders have realised that on the hand, they need the government, but on the other hand, they need to take action themselves. This has resulted in the so-called implementation of actions, leading to success-stories, and institutionalised through the zig-zag approach.

4.4. Geographical scope

Revisiting the concepts of participation, knowledge sharing and sustainability in 2013 resulted in an additional understanding that geographical scope in a longer time frame yields an additional challenge/opportunity. The size of MPA’s in km² influences their inclusion/exclusion in the National MPA network (Day et al., 2012). This inclusion/exclusion results in a differentiation in management approach and financing and can be seen as one of the contributing factors to the differentiation as seen between the Ran Trao MPA and the CLC MPA. This results in CLC being imbedded in the government system and Ran Trao being managed by NGO involvement, namely the Centre for Marine Life conservation and development (MCD) in cooperation with IUCN specifically the Mangroves for the Future project (MFF). The embedding or the lack thereof in the government results in both opportunities and challenges. Both the opportunity and the challenge can be framed within the discussion on understanding. If understanding is high with high level stakeholders but the implementation is low, and vice versa for low level stakeholders, then the opportunity lies within this differentiation itself. This is a clear example of how a need exists for both the government and stakeholders themselves, and that the zig-zag approach is time consuming. The inclusion/exclusion criteria are based on western views of marine spatial planning, resulting in the exclusion of success-stories. The zig-zag approach and its time-consuming nature are slower than the “Western” influence of policy as it for various reasons more easily accepted, or perceived necessary to be accepted. Stakeholders have not yet achieved the zig-zag approach when introducing success stories that contradict persistent theories on coastal management. Indicating that due to the ecological and social urgency, this zig-ag approach is probably not the conclusive answer to the challenge, as the time-sensitivity and the time-reality are not aligned. Decision 2995 and the Law on Fisheries are clear examples of how “Western” views influence coastal management, for example via ‘Marine Spatial Planning’. The disunity between ministries, the feasibility and the regional cooperation challenges and opportunities show a misalignment between the context of Vietnam and the guiding context of the Decision and the Law.

5. Conclusion

A longitudinal study, comparing the state of Integrated Coastal Zone Management in relation to knowledge sharing and participation as conditions for sustainable development was conducted. The initial research round dates from 2010 and the second research round dates from 2013. Both research periods date before the agreement of the National Plan. Document analysis about the genesis of the National Plan provides insight in the sustainability of the Plan as such that it corresponds with the trends seen in the longitudinal study leading up to the Decision.

This research provides empirical support for the need to translate Integrated Coastal Zone Management, its associated concepts of participation and knowledge sharing to the context (local specificity) in which it exists. Analysis shows that Integrated Coastal Zone Management in practice, placed within this specificity and yielding
positive results, is not aligned with Integrated Coastal Zone Management in theory: indicating a need to align theory with practice. The duality of attitudes in the Vietnamese society, the reality of the local specificity and the zeitgeist of theories, paradigms and ideologies lie at the basis of this alignment. The ‘zig-zag approach’ is presented as an adaptation measure emerging as a result of these realities. The time-sensitivity is however a constraining factor for this emerging approach (i.e. societal transformation) to be a conclusive answer.
References


Miles, Matthew B.; Huberman, Michael A.; Saldana, Johnny. 1994. Qualitative Data Analysis: An expanded sourcebook. SAGE Publication p. 338


Raymond, Christopher M.; Fazey, Ioan; Reed, Mark S.; Stringer, Lindsay C. (2010). Integrating local and scientific knowledge for environmental management. Journal of Environmental Management. 91, 1766-1777.


Chapter 6: Contextualising Integrated Coastal Zone Management: decision making processes

Abstract

Contextualisation in environmental management has been recognised for its importance for sustainable development for several decades. The provision of empirical justification for this understanding is however not extensively available. Analysis of empirical data is conducted for this provision through research in decision making processes and participation in Integrated Coastal Zone Management in two specific social-ecological contexts in Vietnam. Questionnaire based quantitative analysis included the exploration of differences between and within the two research areas from both a participation rate and a decision making perspective. The analysis reveals that differentiations exist between the different levels of social organisation for both participation rate and decision making. Measures of association can be found indicating that the odds of the occurrence of participatory and non-participatory processes in everyday village life increases or decreases the occurrence of participatory processes in the management approach. The social and cultural organisation of these two research areas, when compared to similar research conducted in Vietnam reveals that “Van Chai”, a village organisation based on kinship and livelihood, provides explanation as to why these differentiations exist. The presence of “Van Chai” reveals that the notion of contextualising Integrated Coastal Zone Management finds its necessity not only in an ecological system, but also in a social system, i.e. in a social-ecological system.

Keywords: Integrated Coastal Zone Management; context; empirical justification; decision making; participation.
1. Introduction

Integrated Coastal Zone Management as a management approach knows various disciplinary and interdisciplinary siblings. It proclaims to be an umbrella approach; a holistic framing of its brothers and sisters (Cicin-Sain and Knecht, 1998). Consequently, Integrated Coastal Zone Management presides in its vagueness and ‘openness to interpretation’ with other umbrella conceptualisations such as sustainable development. Current research in Integrated Coastal Zone Management has evolved into context specific research; i.e. case studies that encompass international regions, both from an administrative or an ecosystem perspective, countries, and regions within or across countries. Therefore and subsequent, Integrated Coastal Zone Management is defined within a specific context; for this research being Vietnam.

1.1. Research areas

Two research areas were included based on a superficial similarity in ecosystem specificities and a difference in management approach. Both research areas are set in areas were community members are highly dependent for their livelihoods on coral reefs. The superficial nature of the similarity is due to one research area geographically being located on the mainland, i.e. Ran Trao Locally Managed Marine Area (Hien, 2004), and one research area being an archipelago, i.e. Cù Lao Chàm Marine Protected Area and Biosphere Reserve (Trinh and Brown, 2008; Bui et al., 2014). The subsequent ecological differences are expressed in species differentiation, differentiation in influence from mainland, offshore or upstream. Both research areas are geographically located closely together making them prone to similar or the same weather and climatic influences such as droughts, monsoon patterns, and typhoon patterns. Other differences can be found in fishing patterns: the mainland area receives mainly domestic fishermen; the archipelago receives additionally foreign fishermen.

Besides ecological differences and similarities, an obvious differentiation can be noted between island and mainland (rural) communities. On the archipelago a significant influence can be identified from a military presence (Dung, Bush and Mol, 2016; Brown, 2011). The differentiation between these communities is not considered a restraining factor but is taking into account when comparing the two areas. Additionally differentiation exists within the communities.

1.2. Management approach

As it is the aim of this research to identify whether management approaches, the associated notions of participation and knowledge sharing, and the notions of sustainable development and sustainability need to be translated to the context in which they exist, two different management contexts were chosen to allow for comparison in approach.

The Ran Trao Locally Managed Marine Area was set up by a non-governmental organisation with the aim of giving ownership to the local community. Specifically, this indicates that the area is managed by the local community themselves in cooperation with the local authorities (Tran, Chou and Nguyen, 2012). In practice this translates for example in community based patrol teams: developed, implemented and financed by the
community. Support from the non-governmental organisation is needs based, providing knowledge and capacity building support when requested (Tran, Chou and Nguyen, 2012).

The Cù Lao Chàm Marine Protected Area and Biosphere Reserve is a government developed and implemented approach; part of the national Marine Protected Area network and the international Man and Biosphere Reserve programme. The Cù Lao Chàm Marine Protected Area (MPA) and Biosphere Reserve (BR) applies a participatory approach, allowing stakeholders in the decision making process. Subsequently, the Cù Lao Chàm archipelago is managed by MPA and BR appointed community members, in cooperation and under the supervision of local authorities (Trinh and Brown, 2008). In practice this results for example in MPA appointed community patrol teams, financed and supervised by local authorities.

2. Method

2.1. Respondents

One recruitment strategy was used, following the administrative requirements of Vietnamese communities. An introduction and permission letter from a national government institute and a Vietnamese non-governmental organisation was send to local authorities to introduce the research. Subsequently, an introduction letter is send by this local authority to local village leaders with a request for permission to conduct research in their respective villages. As an initial step, interviews with these village leaders are conducted to gather baseline socio-economic and demographic information. Limited official (statistical) data exists on demographics and socio-economic information at village level. This information is tacit; reassessing this data afterwards showed high reliability. Repeat visits to the villages and informal gatherings with village leaders and community members are necessary to establish mutual trust and commitment. Adhering to Vietnamese social and cultural values and traditions, village leaders were asked to invite community members to participate in the questionnaire. The invitations were send out according to the stratified random sample as determined based on the demographic and socio-economic information in combination with the existing stakeholder characteristics as set by the respective management approaches.

The questionnaires were conducted on paper, face to face with the aid of translators. The choice for manual, face to face questionnaires is based on the level of formal education and the high illiteracy rate in the research areas. Pilot questionnaires were conducted to limit confusion and optimise the accompanying guidelines. Each questionnaire was translated with the aid of a local translator to adhere to the local dialect. However, additional information and guidance beforehand was needed to explain for example likert-scales and to provide additional information such as the differentiation between knowledge and skills. Translators were chosen based on their understanding of the research topic, their level of knowledge on the local dialect and their research experience. Availability of these translators was considered a significant restraint and trainings were needed to achieve scientific and academic rigour.

The identification of respondents is based on stratified random sampling. Respondents are limited to one respondent per household, indicating that the number of respondents is a representation of the number of
households present in the communities (n=273). Strata are set according to the various employment categories as deemed relevant in accordance with the stakeholder characteristics of the respective management approaches; fishermen, farmers, services (i.e. sales and others; entailing management related activities such as handicrafts, homestays etc). The choice to follow stakeholder characteristics of management approaches is made to allow for comparison, although limited, with other research conducted in Vietnam, within a similar research setting. Research within Integrated Coastal Zone Management in mainly conducted based on a case study approach, in which case studies are based on similar or the same stakeholder characteristics (f.e. fishing gears; e.g. Ho, 2015). 309 households were invited of which 273 agreed to participate (88.35%, µ age = 47.27, min. 19; max. 81). Due to the strata being set to adhere to stakeholder characteristics no gender equality is strived for. The random sampling however resulted in gender equality being achieved (Male 48.1%; Female 51.9%). Table 5 provides an overview of the number of respondents per research area per strata, divided per village. The choice for the division per village is made based on vast variability between villages due to their geographical location. The community on Cù Lao Chàm is divided in four villages; of which three are located adjacent each other namely Thôn Bãi Ông, Thôn Cảm and Bãi Làng, the fourth village, Bãi Hương, is located on the other side of Cù Lao Chàm. This division leads to differentiations such as accessibility to/from the mainland, outsider influence (i.e. tourism), accessibility to social services such as medical facilities, schools, as well as differentiation in cultural values and traditions. In Van Hưng commune in the Ran Trao Locally Management Marine Area, the division is noticeable due to the geographical differentiation being either sea or rural area adjacent. This division is magnified due to the presence of a highway dividing the commune in two areas. The Van Hưng Commune consists of 6 villages creating the following division; Xuân Tự 1, Xuân Tự 2 and Xuân Vinh being sea adjacent and Xuân Tây , Xuân Đông and Hà Già being rural area adjacent.

**Table 5 Overview of respondents organised per research area and per village (Intended and Actual respondents)**

<table>
<thead>
<tr>
<th>Village</th>
<th>Farmers</th>
<th>Fishermen</th>
<th>Services</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intended</td>
<td>Actual</td>
<td>Intended</td>
<td>Actual</td>
</tr>
<tr>
<td>Van Hưng Commune</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xuân Tự 1</td>
<td>12</td>
<td>5</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>Xuân Tự 2</td>
<td>11</td>
<td>11</td>
<td>18</td>
<td>16</td>
</tr>
<tr>
<td>Xuân Nghĩa</td>
<td>9</td>
<td>7</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>Xuân Tây</td>
<td>2</td>
<td>11</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>Xuân Đông</td>
<td>25</td>
<td>18</td>
<td>/</td>
<td>2</td>
</tr>
<tr>
<td>Hà Già</td>
<td>3</td>
<td>4</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Total Van Hưng</td>
<td>62</td>
<td>56</td>
<td>66</td>
<td>47</td>
</tr>
<tr>
<td>Cù Lao Chàm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thôn Bãi Ông</td>
<td>8</td>
<td>1</td>
<td>24</td>
<td>21</td>
</tr>
<tr>
<td>Thôn Cảm</td>
<td>/</td>
<td>2</td>
<td>32</td>
<td>15</td>
</tr>
<tr>
<td>Bãi Làng</td>
<td>/</td>
<td>/</td>
<td>32</td>
<td>13</td>
</tr>
<tr>
<td>Bãi Hương</td>
<td>/</td>
<td>3</td>
<td>32</td>
<td>14</td>
</tr>
<tr>
<td>Total Cù Lao Chàm</td>
<td>8</td>
<td>6</td>
<td>120</td>
<td>63</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>62</td>
<td>186</td>
<td>110</td>
</tr>
</tbody>
</table>

* Valid: 260 – Total: 273 – Missing: 13/** Total Actual Number included households with no source of income (n=13)
The variation between the intended and the actual number of respondents according to the stakeholder criteria per village results from the manner in which respondents are invited. Conducting questionnaires in Vietnam is preceded by an invitation letter send out through traditional channels; in both research areas being the current village leaders. The strata were explicated and invitations were sent out according to these requirements; the actual number however differs as a result of inconsistencies, availability, willingness or incorrect socio-economic and demographic data.

2.2. Instrument

Data was collected using a non-standardised questionnaire. Sections of the questionnaire are based on standardised questionnaires but these were not incorporated fully. Standardisation could not be achieved for this research; therefore standardisation during analysis is conducted (Z-scores). The questionnaire is divided in two sections; participation rate and decision making.

**Participation rate**

A wide range of gauged stakeholder participation methodologies exist within the environmental management framework such as stakeholder analysis, environmental impact assessment, social network analysis, strategic environmental assessment etc (Brugha and Varvasovszky, 2000; Scott, 1987; Porter and Fittipaldi, 1988). Most tools used within this framework however serve a management goal (Lienert, Schnetzer and Ingold, 2013). No gauged questionnaires and surveys exist, encompassing stakeholder decision making processes, inclusive of participation incentives, participation rate, and knowledge gaining and sharing.

The subscale ‘Participation rate’ is a dichotomous Yes/No question and contains 28 items (α= .913; e.g. community coastal clean-up). It encompasses the range of activities related to the management of the areas both within the frame of the management approach and in everyday village life.

**Decision making process**

The section on decision making consists of two subscales; ‘decision making in everyday village life’ (α= .619; 6 items; e.g. …we listen to each other’s opinion but it is the village leader who has the final word.) and ‘decision making in the management process’ (α=.686; 12 items; e.g. … we listen to each other’s opinions and decide together). Both subscales are rated on a five-point likert-scale indicating 1 (strongly disagree), 2 (disagree), 3 (agree not disagree), 4 (agree), 5 (strongly agree).

2.3. Analysis

The analysis was conducted on two levels; participation rate and decision making. In an initial step dimension reduction is conducted on ‘participation rate’ via Exploratory Factor Analysis (EFA). EFA is conducted using the analysis tool IBM SPSS Statistics 23 (SPSS Inc., Armonk, NY) and consists of the following steps. A visual representation of correlations is computed to provide insight in the underlying relationships between the subscale items. Subsequently, EFA is computed without prior determination of the number of factors. The reliability of the proposed factors is computed based on Cronbach’s Alpha (Gliem and Gliem, 2003); items are
regrouped in case of increased Cronbach’s alpha when item removed. This regrouping is conducted based on the correlation matrix, additional EFA’s and recomputed reliability. The exploratory factor analysis is conducted in combination with an exploration of reliability based on confirmatory factor analysis. Guttmann split half was conducted to assess stability (Benton, 2013).

**Participation rate**

Dimension reduction is conducted on the scale ‘participation rate’ via Exploratory Factor Analysis (EFA). A visual representation of correlations is computed to provide insight in the underlying relationships between the scale items. Subsequently, EFA is computed without prior determination of the number of factors. The reliability of the proposed factors is computed based on Cronbach’s Alpha; items are regrouped in case of increased Cronbach’s alpha when item removed. A Cronbach’s alpha of .70 is considered statistically acceptable (George and Mallery, 2003). This regrouping is conducted based on the correlation matrix, the scree plot, additional EFA’s and recomputed reliability. The EFA for the scale ‘participation rate’ resulted in the creation of three subscales ‘Environmental Planning’ (α= .834, e.g. zoning), ‘Management Implementation activities’ (α= .904, e.g. Alternative livelihood), and ‘Long term planning/Education and Awareness activities (α= .823, e.g. community coastal clean-up). Stability is tested using Guttman split half (Benton, 2013). The analysis conducted in relation to participation rate is based on descriptive statistics. Additionally difference queries are conducted to determine whether a significant relationship can be determined between participation rate and the location in which stakeholders reside. These queries are conducted via cross-tabulation using chi square statistics.

**Decision making processes**

No dimension reduction is conducted on the two ‘decision making’ subscales; rather an item-to-item comparison is made between the subscales. Cross-tabulation is used to determine correlations and statistical significance. Correlations are computed using Cramer’s V statistic; Chi square statistics are used for statistical significance; for those tables with an expected count less than 5, Fisher Exact test is used. For these instances, the Monte Carlo statistic is used to determine the significance of the Cramer’s V statistic. Furthermore, odds ratios are calculated to determine the possibility that the occurrence of one item influences the occurrence of another item. Odds Ratios are also computed to determine the possibility of relations differing for two independent samples. Odds ratio is used to determine the relative odds of the occurrence of decision making processes in the management process, given the occurrence of decision making processes in everyday village life. Odds ratios are commonly used in case-control studies, but they can also be used for cross-sectional and cohort studies. Specifically, odds ratios are used over prediction models as they show the relative benefit without making assumption about cause-effect relationships. Often, logistic regression is used to study the effect other variables have on the relationship determined in the odds ratio (Bland and Altman, 2006). For this analysis, logistic regression is however not used as the goal of the analysis is to determine the relationship between the context of everyday village life and the management approach concerning decision making. It is not the goal of the analysis to determine the prediction value of other variables. Odds ratios are a commonly
used method in environmental sciences to determine the odds of the occurrence of a management outcome, given the occurrence of a certain management process (e.g. Olden et al., 2014; Flow experiments).

3. Results

3.1. Participation rate

Exploratory Factor Analysis (EFA)

The Kaiser-Meyer-Olkin measure of sampling adequacy of .895 indicated that the survey items were sufficiently correlated to warrant conducting a factor analysis. The initial Exploratory Factor Analysis (EFA) reveals that two items show zero variance. These two items correspond with the items in the questionnaire “others”. As only two respondents indicated other activities, conceptual argumentation supports the initial EFA and the items are removed. The choice is made to conduct a preliminary EFA without predetermination of the number of factors. The items of the subscale “participation rate” are based on analysis from previously conducted qualitative research and document analysis conducted to determine the different activities that are conducted within the management approach of the two research areas. Therefore, no theoretical argumentation is used. The initial EFA resulted in a seven-factor solution. Based on factor loadings >.4, factor four through seven reveal significant noise due to the low number of items being included (factor 6 and 7: 2 items; factor 4 and 5: 3 items) and low factor loadings. The eigenvalues of all factors are higher than 1.0 accounting for 72.163 of the total variance explained. Factor 1 has an eigenvalue of 9.860 and factor 2 has an eigenvalue of 2.913. All other factors had eigenvalues less than 2.0 (respectively 1.899, 1.810, 1.430, 1.430, 1.242, 1.052). Conceptual inconsistencies support the three-factor solution and based on the scree-plot of eigenvalues and with a total variance explained of 52.389, a three factor solution is deemed more appropriate. Internal consistency for the seven-factor solution is calculated based on Cronbach’s alpha [Table 6]. The Cronbach’s alpha shows acceptable reliability for all factors. However for factor four through seven reliability increases when items are removed. After conducting the EFA with a three factor solution, the Cronbach’s alphas are used for comparison with those of the three-factor solution to determine the most reliable factor-solution. For factor one in the three factor solution, argumentation could be made based on Cronbach’s alpha that one item could either be removed or placed in another factor based on factor loading. The factor loading is however the highest in factor 1, and the Cronbach’s alpha would only increase by .005. In combination with conceptual argumentation, the choice is made to keep the item in factor 1. Factor 2 and 3 are straightforwardly reliable with no increase in Cronbach’s alpha when items removed and factor loadings corresponding with theoretical argumentation. The following factors are identified: ‘Environmental Planning’ (α=.834) indicating all activities in the development phase (e.g. Zoning), ‘Long term planning/Education and awareness activities’ (α=.823) indicating all activities in the implementation phase open to all community members (e.g. community coastal clean-up) and activities concerning the identification of social and cultural issues in the development phase (e.g. developing the community profile), and ‘Management implementation’ (α=.904) indicating all activities related to the management of the coral reefs (e.g. patrol groups and alternative livelihood activities)
Table 6 Factor loadings of EFA (5), EFA (3) and CFA (3).

<table>
<thead>
<tr>
<th>Factor reliability based on Cronbach’s alpha</th>
<th>α</th>
<th>A</th>
<th>L4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1</td>
<td>.881</td>
<td>.834</td>
<td>.783</td>
</tr>
<tr>
<td>Factor 2</td>
<td>.759</td>
<td>.823</td>
<td>.820</td>
</tr>
<tr>
<td>Factor 3</td>
<td>.778</td>
<td>.904</td>
<td>.836</td>
</tr>
<tr>
<td>Factor 4</td>
<td>.765</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factor 5</td>
<td>.701</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factor 6</td>
<td>.721</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factor 7</td>
<td>.844</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Factor items

**Factor 1: Environmental planning**

[V12a1] Identification of environmental issues
[V12b1] Identification of the protected area
[V12c1] Resource assessment
[V12d1] Defining the protected location
[V12e1] Zoning

**Factor 2: Long term planning/Education and awareness activities**

[V12f1] Developing the community profile
[V12g1] Developing the project vision
[V12k1] Approving (endorsing) the project plan
[V12m1] Education and awareness activities
[V12n1] Music and/or poetry compositions
[V12o1] Performances
[V12p1] Community coastal clean up
[V12q1] Capacity building activities
[V12s1] Alternative livelihood
[V12bb1] Advocacy

**Factor 3: Management Implementation**

[V12h1] Developing projects objectives and goals
[V12i1] Defining the project activities
[V12j1] Writing the project plan
[V12l1] Implementing the project plan
[V12r1] Using sustainable alternatives to livelihood activities
[V12t1] Core group
[V12u1] Communication group
[V12v1] Livelihood group
[V12w1] Calm group
[V12x1] Study tours
[V12y1] Monitoring
[V12z1] Evaluating the project
[V12aa1] Networking

Rotated loadings (>-.4) using varimax rotation. Kaiser-Meyer-Olkin measure of sampling adequacy = .803
A confirmatory factor analysis is composed of 28 items and three subscales, ‘PlanningImplementation’ (Long Term Planning/Education and Awareness activities; items V12f1, V12g1, V12k1, V12m1, V12n1, V12o1, V12p1, V12q1, V12s1, V12bb1), ‘EnvironmentPlanning’ (Environmental Planning; items V12a1, V12b1, V12c1, V12d1, V12e1), and ‘ManagementImplementation’ (Management Implementation; items: V12h1, V12i1, V12j1, V12l1, V12r1, V12t1, V12u1, V12v1, V12w1, V12x1, V12y1, V12z1, V12aa1). 15 Co-variances (Cov (e27,e26); Cov (e26,e23); Cov (e26,e22); Cov (e25,e22); Cov (e23,e22); Cov (e26,e21); Cov (e25,e20); Cov (e23,e19); Cov (e22,e19); Cov (e26,e18); Cov (e23,e18); Cov (e17,e16); Cov (e11,e10); Cov (e10,e7); Cov (e11,e7) were set as free parameters to improve model fit. The 3-factor model fits data acceptably: $\chi^2$/df=1.953, CFI=.874, RMSEA=.074. The parameter estimates of the CFA are shown in Figure 6.
Statistics analysis

Based on the frequency of the different factors, namely in case participation in one of the items of the 3 factor-solutions occurs, a clear difference in participation rate can be determined. About half of the community indicates being involved in the development phase of the management project (Environmental Planning = 56.0% participation), more than half participates in alternative livelihood activities or as a member of a community management group (Management Implementation = 68.1%), and almost all community member indicate participation in one or all Long term Planning/Education and Awareness activities (88.0%).

When analysing a possible difference between the two research areas, significant difference can be computed. Differences are significant concerning Education and Awareness activities ($\chi^2=20.320; df=1; p < 0.001$), Management Implementation activities ($\chi^2=19.442; df=1; p<0.001$) and Environmental Planning, ($\chi^2=6.271; df=1; p<0.05$). When analysing whether this differentiation is based on a correlation and what the odds of this relationships is, correlations can be found for Education and Awareness activities (Cramer’s V=.281; p>0.001; Odds Ratio=14.118; p<0.05), Management Implementation (Cramer’s V=.276; p<.001; Odds Ratio=3.604; p<0.05), and Environmental Planning (Cramer’s V=.157; p<0.05; Odds Ratio=1.903; p<0.05).

Within Vân Hưng commune, significant differences can be found between the different villages. Difference are significant concerning Environmental Planning ($\chi^2=20.581; df=5; p<0.005$) and Management Implementation ($\chi^2=14.891; df=5; p<0.05$). On Cù Lao Chàm significant differences can be found concerning Environmental Planning ($\chi^2=13.202; df=3; p<0.005$).

In Vân Hưng community a differentiation in villages can be noted based on being either sea or rural area adjacent. Concerning ‘participation rate’ significant differences can be noted based on this differentiation (Environmental Planning $\chi^2=6.454; df=1; p<0.05$; Management Implementation $\chi^2=5.141; df=1; p<0.05$; Education and Awareness: $\chi^2=8.013; df=1; p<0.05$); indicating that being either sea or rural area adjacent influences the participation rate in Vân Hưng community.

In the Cù Lao Chàm community, significant difference can be found between those villages that lie geographically clustered together and the one village that lies geographically isolated. Concerning, Environmental Planning, a significant difference can be noted between the participation rate in the cluster Thôn Cấm, Thôn Bãi Ông and Bãi Làng and the cluster Bãi Hương ($\chi^2=12.996; df=1; p<0.001$). This indicates that on Cù Lao Chàm, the isolated village of Bãi Hương did not know the same participation rate in the development phase of the project.

3.2. Decision making processes

When analysing the decision making processes at the different levels it can be noted that a significant relationship exists between the manner in which decisions are made at village level and concerning the management approach. Table 7 represents the odds ratios on decision making processes in everyday village life and within the management process. The discussion of the results is organised according to decisions being made without discussion in everyday village life(items D, E and F) and decisions being made with discussion in
everyday village life (items A, B and C). Furthermore, a comparison is made between the two research areas. The discussion sections will provide detailed insights in exception that occurs with item C and item E, and items 6 and 11, i.e. the influence of people with the largest income.

**Decision without discussion in everyday village life**

**Analysis for both research areas**

**No decisions made together**

Concerning the item ‘no decisions together’ in everyday village life, a significant relationship can be found with the item ‘the village leader makes all the decisions without discussion’ (Cramer’s V = .175; Monte Carlo .023 < p > .031; Fisher exact p > .05) and the item ‘the members of the management groups make all the decisions without discussion’ (Cramer’s V = .163; Monte Carlo .021 < p > .029; Fisher exact p > .05) concerning decisions in the management process.

**The people who have the largest income make decisions without discussion**

Concerning the item ‘the people who have the largest income make all the decisions without discussion’ in everyday village life, a significant relationship can be found with the item ‘we do not make any decisions together’ (Cramer’s V = .241; Monte Carlo .005 < p > .009; Fisher exact p < .01), ‘the item the members of the management groups make all the decisions without discussion’ (Cramer’s V = .277; Monte Carlo .005 < p > .009; Fisher exact p < .01), the item ‘the village leader makes all the decisions without discussion’ (Cramer’s V = .191; Monte Carlo .037 < p > .047; Fisher exact p < .05), the item ‘an NGO makes all the decisions without discussion’ (Cramer’s V = .202; Monte Carlo .014 < p > .025; Fisher exact p < .05), the item ‘the government makes all decisions without discussion’ (Cramer’s V = .256; Monte Carlo .005 < p > .005; Fisher exact p < .05), and the item ‘the people with the largest income have the final word’ (Cramer’s V=.234; Monte Carlo .001 < p > .003; Fisher exact p<0.005) concerning decisions in the management process.

**Decision being made without discussion by the village leader**

Concerning the item ‘the village leader makes all the decisions without discussion’ in everyday village life, a significant relationship can be found with the item ‘no decisions together’ (Cramer’s V = .251; Monte Carlo .001 < p > .002; Fisher exact p < .005), the item ‘the people who have the largest income make all the decisions without discussion’ (Cramer’s V = .325; Monte Carlo .000 < p > .001; Fisher exact p < .001), the item ‘the members of the management groups make all the decisions without discussion’ (Cramer’s V = .283; Monte Carlo .000 < p > .001; Fisher exact p < .001), the item ‘the village leader makes all the decisions without discussion’ (Cramer’s V = .316; Monte Carlo .000 < p > .001; Fisher exact p < .001), the item ‘an NGO makes all the decisions without discussion’ (Cramer’s V = .249; Monte Carlo .001 < p > .003; Fisher exact p < .005), the item ‘the government makes all decisions without discussion’ (Cramer’s V = .249; Monte Carlo .001 < p > .003; Fisher exact p < .005), the item ‘the people with the largest income have the final word’ (Cramer’s V=.192; p<0.005; χ²=8.754;df=1;p>.005) concerning decisions in the management process.
### Table 7 Odds ratios on decision making in everyday village life and within the management approach

<table>
<thead>
<tr>
<th>Management process</th>
<th>Decide together and listen to each other’s opinion</th>
<th>Do not decide together</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Everyday village life</strong></td>
<td><strong>Final word</strong></td>
<td><strong>Final word</strong></td>
</tr>
<tr>
<td>1. Decide together</td>
<td>16,263</td>
<td>0,259</td>
</tr>
<tr>
<td>2. Government</td>
<td>2,132</td>
<td>0,259</td>
</tr>
<tr>
<td>3. NGO</td>
<td>2,947</td>
<td>2,947</td>
</tr>
<tr>
<td>4. Village leader</td>
<td>0,259</td>
<td>0,259</td>
</tr>
<tr>
<td>5. Management groups</td>
<td>0,259</td>
<td>0,259</td>
</tr>
<tr>
<td>6. Largest income</td>
<td>0,259</td>
<td>0,259</td>
</tr>
</tbody>
</table>

**A. Decide together**

<table>
<thead>
<tr>
<th>A. Decide together</th>
<th>16,263</th>
<th>2,132</th>
<th>2,947</th>
<th>0,259</th>
<th>0,259</th>
</tr>
</thead>
</table>

**B. The village leader has the final word**

<table>
<thead>
<tr>
<th>B. Village leader</th>
<th>5,137</th>
<th>6,361</th>
<th>4,845</th>
<th>2,99</th>
</tr>
</thead>
</table>

**C. Largest income has the final word**

<table>
<thead>
<tr>
<th>C. Largest income</th>
<th>2,46</th>
<th>3,263</th>
<th>1,878</th>
<th>23,485</th>
</tr>
</thead>
</table>

**D. Village leader**

<table>
<thead>
<tr>
<th>D. Village leader</th>
<th>3,563</th>
<th>9,95</th>
<th>6,92</th>
<th>15,294</th>
<th>8,153</th>
<th>11,375</th>
<th>5,926</th>
</tr>
</thead>
</table>

**E. Largest income**

<table>
<thead>
<tr>
<th>E. Largest income</th>
<th>8,847</th>
<th>10,048</th>
<th>7,679</th>
<th>8,98</th>
<th>12,457</th>
<th>7,709</th>
<th>3,657*</th>
</tr>
</thead>
</table>

**F. Not any decisions together**

<table>
<thead>
<tr>
<th>F. Not any decisions together</th>
<th>5,642</th>
<th>3,648</th>
<th>2,414*</th>
</tr>
</thead>
</table>

* Odds ratio computed on the correlations and the research area.
**Analysis for independent research areas**

Significant relationships can be found between the manner in which decisions are made both in everyday village life and concerning the management process, and the area in which stakeholders reside. Concerning the item F ‘no decision made together’ in everyday village life and the item 9 ‘the village leader makes decisions without discussion’ in the management process a significant relationship (Cramer’s V = .142; p<.05; χ²=4.741; df=1; p<.05) can be found between the two research areas. Concerning the items D (the village leader makes decisions without discussion) and E (the people with the largest income make decisions without discussion), significant relationships can be found with item 6 (people with the largest income have the final word) (respectively D; Cramer’s V= .233; p<.005; χ²= 11.711; df=1; p<.005 and E; Cramer’s V=.186; p<.005; χ²= 8.210; df=1; p<.005). Concerning item E a significant relationship can also be found with item 12 (not any decisions made together) (Cramer’s V=.170; p<.005; χ²= 7.043; df=1; p<.005).

**Decisions with discussion in everyday village life**

**Analysis for both research areas**

*Decision being made together with the people having the largest income having the final word*

Concerning the item ‘those people who have the largest income have the final word’ a significant relationship can be found with the item ‘people who have the largest income have the final word’ (Cramer’s V = .605; p<.001; χ²=87.130;df=1;p>.001), the item ‘the members of the management groups who have the final word’ (Cramer’s V = .142; p<0.05; χ²=4.883;df=1;p<0.05), the item ‘the village leader has the final word’ (Cramer’s V = .228; P<.001; χ²=12.613;df=1;p>0.001), the item ‘an NGO has the final word’ (Cramer’s V = .185; p<.005; χ²=8.276;df=1;p>0.005), the item ‘the government makes all decisions without discussion’ (Cramer’s V = .288; p<.001; χ²=19.316; df=1; p<0.001), the item ‘an NGO makes all the decisions without discussion’ (Cramer’s V.271;Monte Carlo .001 <p>.003; Fisher Exact p<.005), the item ‘the village leader makes decisions without discussion’ (Cramer’s V=.163;Monte Carlo .021 <p>.029;Fisher Exact p<.021), the item ‘the members of the management groups make decisions without discussion’ (Cramer’s V=.171; p<0.05; χ²=7.025; df=1; p<0.05), the item ‘the people who have the largest make decisions without discussion’ (Cramer’s V=.192;Monte Carlo .004<p>.007;Fisher Exact p<0.05), the item ‘no decisions made together’ (Cramer’s V=.202;p<0.05;χ²=9.833;df=1;p<.005) concerning decisions in the management process.

*Decisions together with village leader having the final word*

Concerning the item ‘the village leader who have the final word’ a significant relationship can be found with the item ‘the members of the management groups who have the final word’ (Cramer’s V = .236; p<.001; χ²=13.478;df=1;p<.001), the item ‘the village leader has the final word’ (Cramer’s V = .345; p < .001; χ²=29.003;df=1;p<.001), the item ‘an NGO has the final word’ (Cramer’s V = .400; p < .001; χ²=39.078;df=1;p<.001), the item ‘the government that has the final word’ (Cramer’s V = .322; p < .001; χ²=25.335;df=1;p<.001) concerning decisions in the management process.
Decisions together
Concerning the item ‘decide together’ a significant relationship can be found with the item ‘the members of the management groups who have the final word’ (Cramer’s V = .172; p < .05; χ²=7.187; df=1; p<.05), the item ‘the village leader who has the final word’ (Cramer’s V = .128; p < .05; χ²=4.034; df=1; p<.05), the item ‘decision together’ (Cramer’s V = .425; Monte Carlo .000 < p > .000; Fisher Exact p<.001), the item ‘the government makes all the decisions without discussion’ (Cramer’s V=.172; Monte Carlo .017 < p > .024; Fisher Exact p < .05), the item ‘the people who have the largest income make all the decisions without discussion’ (Cramer’s V=.158; Monte Carlo .028 < p > .037) concerning decisions in the management process.

Analysis for independent research areas
Concerning item C (those people that have the largest income have the final word) and the items 7 through 12 significant relationships between the two research areas can be found; ‘the government makes decisions without discussion’ (Cramer’s V=.184; p<.05; χ²= 7.836; df=1; p<.05), ‘an NGO makes decisions without discussion’ (Cramer’s V=.165; p<.05; χ²= 6.337; df=1; p<.05), ‘the village leader makes decisions without discussion’ (Cramer’s V=.188; p<.05; χ²= 8.185; df=1; p<.05), ‘the management groups make decisions without discussion’ (Cramer’s V= .192; p<.05; χ²= 8.796; df=1; p<.05), ‘the people with the largest income make decisions without discussion’ (Cramer’s V=.127; p<.05; χ²= 9.398; df=1; p<.05), ‘not any decision being made together’ (Cramer’s V= .127; p<.05; χ²= 3.898; df=1; p<.05)

4. Discussion
The analysis of participation and knowledge sharing is based on the hypothesis that both participation and knowledge sharing are prerequisites for Integrated Coastal Zone Management. This is supported both in theory and in practice (Bruckmeier and Larsen, 2008). An epistemological view on social-ecological systems analysis shows that a knowledge-based strategy to systematically address complex problems allows for the study of ecological and societal processes at different dimensions and scales, from local to global (Lopes and Begossi, 2009). The usage of multiple knowledge systems, such as scientific, indigenous, traditional ecological, local, and practitioner knowledge, are beneficial in terms of the insights provided from such knowledge systems and in terms of the usage of participation as a means for empowering local resources users, and the challenges and trade-offs involved in using such processes (Coffey and O'Toole, 2012).

4.1. Participation rate
Research in Integrated Coastal Zone Management implies the need for stakeholder participation both in the development phase and the implementation phase, analogue with the change in theory and practice on participation from solely consultation to co-decision making (Javier, 2015; Abelshausen, 2015; Phal-Wostl et al., 2008).

When stakeholder participation is examined in Vietnam, it can be noted that concerning activities in the development phase of ICZM, the participation rate is relatively low compared to that in the implementation phase, although more than half of local stakeholders is involved. This development phase is consistent with the
factor ‘Environmental Planning activities’ that has a participation rate of 56.0%. Local stakeholders’ participation rate in Management Implementation activities, such as patrol groups is slightly higher with 68.1%. The participation rate of these activities is influenced by the necessity of participation as only a previously defined number of stakeholders can be part of these groups. A participation rate of 88.0% for Education and Awareness activities implies that almost all members of the researched communities participate in one or more activities. Previous research in Vietnam on participation in fishery management shows similar participation rates (Ho, 2015). A possible explanatory factor for this high participation rate is trust in fishery management leaders as a relationship between both indicates that as the level of trust in leadership increases, the participation rate increases accordingly (Ho, 2015).

When analysing the participation rate between the two areas, it can be noted that significant differences exist concerning ‘Education and Awareness activities’ and concerning ‘Management Implementation activities’. Concerning ‘Education and Awareness activities’, more stakeholders in Văn Hưng commune indicate not to participate (20.3%) than stakeholders who reside on Cù Lao Chàm (1.8%). For those stakeholders who do participate, the participation between the two regions is similar (Văn Hưng = 50.7%; Cù Lao Chàm = 49.3%), indicating that the difference in participation rate should be found in the reasons as to why stakeholders do not participate in these activities. This differentiation is even more apparent concerning ‘Management Implementation activities’; in Văn Hưng commune the participation rate of those that do participate is 56.3%, whereas on Cù Lao Chàm, the participation rate is 82.3%. Concerning Environmental Planning activities, the participation rate is more balanced; with a participation of 49.0% in Văn Hưng commune and 64.6% on Cù Lao Chàm. When analysed whether or not this difference is based on a correlation between the two variables, it can be noted that a small correlations can be found between the area in which you live and the participation rate. When the Odds Ratio for these correlations are computed it needs to be noted that the odds of not participating in Education and Awareness Activities in Văn Hưng commune is about 14 times as likely to occur than on Cù Lao Chàm. The odds for not participating in ‘Management Implementation activities’ and ‘Environmental Planning activities’ are lower than those concerning ‘Long term planning/Education and Awareness activities’; indicating that the region in which stakeholders reside influences their odds of participation less for ‘Management Implementation’ and ‘Environmental Planning activities’ than for ‘Long term planning/Education and Awareness activities’.

When analysing differences in participation rate within Văn Hưng commune, it is apparent that being either sea or rural area adjacent influences whether or not stakeholders participate. The participation rates in those villages that are sea adjacent are significantly higher than for those villages that are rural area adjacent. On Cù Lao Chàm however no significant difference exist between the cluster Thôn Cắm, Thôn Bãi Ông and Bãi Làng and the isolate village of Bãi Hương concerning ‘Management Implementation activities’ and ‘Education and Awareness activities’. Concerning ‘Environmental Planning’ a significant difference could be found between the cluster and the isolated village, indicating that the Bãi Hương village did not know the same participation rate in the development phase of the management approach.
The differentiation between being either rural area adjacent or sea adjacent is an expression of village organisation according to “Van Chai”. A “van” is described as a group of fishers’ families that share kinship, or live in the same geographical area (Ha and Nguyen, 2008); a “Van Chai” is a “Van” that uses the same type of fishing gear, i.e. “Chai”. The existence of these “Van Chai” is used as an example to analyse the influence of context in Integrated Coastal Zone Management. “Van Chai” even though currently not recognised from a legislative viewpoint (Ho, 2015), influencing such matters as fishing rights allocation, is considered an influential factor in fishery management approaches (Ha and Nguyen, 2008). The cultural legacy of “van” is still present in everyday village life in fishing communities in Vietnam (Ho; 2015) and is expressed in regards to respect for elders, trust in the known and distrust in the unknown.

When analysis on the participation rate is conducted at village level, significant difference can only be found for ‘Environmental Planning’ and ‘Management Implementation’; indicating that at village level no differentiation can be found for ‘Education and Awareness activities’. This indicates that participation in these types of activities does not depend on the village in which one lives, indicating that village members have the same odds to participate independent of their village. Concerning ‘Management implementation’, differentiations at village level can only be determined within Văn Hưng commune; indicating that only in Văn Hưng commune the village in which one resided influences the participation rate. Concerning ‘Environmental Planning’, significant differences can be found between the various villages in both areas, indicating that the village in which one lives does influence the participation rate in the development phase.

Overall it can be stated that the participation rate differs dependent on the place in which one resides. The degree to which and the activities for which differs depending on the level on which one defines ‘place of residence’. The more local one defines place of residence, in descending order being: both areas, separate areas, cluster level, and village level, the less likely it is that the place of residence influences the participation rate. The exception being activities in the development phase, for which differences can be found on all levels, indicating the even within a community, or a cluster within this community, whether or not one participates depends on the village in which one resides. Furthermore, as a difference exists between the two research areas concerning the level on which significant differences can be found, the area in which one resides does not only influence the participation rate itself, but also the level to which this difference exists. In laymen’s terms this indicates that in Văn Hưng commune the differences between the villages are more apparent than on Cù Lao Chàm. Very little research has been conducted in Vietnam on actual participation rates within a coastal management framework. The research by Ho (2015) being the exception usable for comparison with this research. The case study approach used in the research by Ho (2015) is predominantly based on fishing gear types or “Van Chai”. The opportunity for the research on Cù Lao Chàm and in Văn Hưng to be compared to that of Ho (2015) lies in the community organisation in the two research areas based on this “Van Chai”, with the residents of one village using a similar or the same fishing gear. This type of community organisation also provides a possible explanation as to why differentiation exists between the two research areas and within these areas. As in Văn Hưng commune one cluster is rural area adjacent the community organisation influences the occurrence of villages being organised around fishing gear. This explains why more apparent differentiation
can be found between the villages in Văn Hưng commune than on Cù Lao Chàm, as villages, especially in the rural area adjacent cluster are less rigorously defined based on fishing gear as they are on Cù Lao Chàm. These differences in village organisation and the subsequent differences in participation rate imply that the context of the area in which stakeholders reside influence this participation rate.

4.2. Decision making

The analysis on decision making processes is made to determine whether the context of the coastal zone in which Integrated Coastal Zone Management is applied needs to be taken into account when applying a participatory approach. From this analysis, no conclusions will be made as to whether or not decisions are made in a participatory or non-participatory manner, as it is not the aim of this research to determine on the one hand the level of participation or on the other hand draw conclusions on the validity of this participation. The analysis will therefore not make deductions concerning the current state of decision making in the research areas, it will however provide insight into whether or not the decision making process in everyday village life influences the decision making process in the management process.

When decision making process are analysed in both Văn Hưng commune and on Cù Lao Chàm archipelago, both in everyday village life and in the management process a differentiation can be noted between those decisions that are made with discussion and those that are made without discussion; with the exception of the influence that people with a large income have. Comparison between this analysis and previous research on participation in Integrated Coastal Zone Management (Abelshausen, 2015), indicates that a pattern of participatory and non-participatory processes emerge. Specifically, it can be noted that those items that fall in the category participatory processes (i.e. items A through C) in everyday village life, correlate mostly with items that fall in the category participatory processes (i.e. items 1 through 6) in the management process. The exception here being that item C (People with the largest income having the final word) correlate additionally with all items in the non-participatory category (i.e. item 7 through 12) in the management process. Concerning non-participatory processes in everyday village life (i.e. items D through F) correlation can be found with non-participatory processes in the management process. The exception for these categories being the correlation with item 6 (deciding together with the people with the largest income having the final word) and items D (Village leader decides) and E (People with the largest income decide).

These correlations indicate that significant relationships exist between the manner in which decisions are made in everyday village life and the manner in which decisions are made in the management process.

**Decisions without discussion in everyday village life**

In order to determine exactly how likely it is that whether or not a certain decision making process in everyday village life occurs affects whether or not a certain decision making process in the management process occurs, odds ratios are computed. For example the odds of ‘the village leader not making decisions without discussion’ in the management process, when decisions are not made together in village life is 5 times as likely to occur then when in everyday village life decisions are made together (Odds ration=5.462; p<0.05). In laymen’s terms
this indicates that when decisions are not made together in everyday village life it is 5 times as likely that a village leader makes decisions without discussion in the management process. When this is translated to participation theories, it can be deduced that when community members do not participate in the decision making process in everyday village life, it is more likely that a village leader will make the decisions in the management process without allowing local community members to participate in the decision making process then when these community members do participate in the decision making process in everyday village life. This indicates that none-to-limited participation in decision making processes in everyday village life influences the decision making processes in Integrated Coastal Zone Management; specifically this indicates that the decision making context of communities influences the decision making process of Integrated Coastal Zone Management.

Furthermore, it can be noted that decision being made without discussion in everyday village life only influence decisions being made without discussion in the management process. This indicates that when decisions are made without discussion within everyday village life the likelihood of decision being made with discussion in the management process is not affected, neither in a positive nor a negative manner. The exception being that for those decisions made with discussion with the people with the largest income having the final word. The odds of the people with the largest income having the final word in the management process is 3.5 times as likely to occur when the village leader makes all the decisions, then when the village leader does not make all the decisions. The same conclusion can be drawn for the people with the largest income making all the decisions in everyday village life. The odds of them having the final word in the management process, is about 9 times as likely to occur when they make all the decisions in everyday village life, then when they do not make all the decisions in everyday village life (Odds Ratio=8.847; p<0.05; Fisher exact>0.05). This exception indicates that having financial power in everyday life does not only increase the likelihood of this financial power influencing the decision making process in the management process when there is no discussion (i.e. non-participatory) but also when there is discussion (i.e. participatory).

Decisions with discussion in everyday village life

For decisions being made with discussion in everyday village life, odds ratios are computed in the same manner. As was the case for decision being made without discussion; for decision being made with discussion the manner in which decisions are made in everyday life with discussion influences the manner in which decisions are made in the management process. For example the odds of decisions being made together in the management process, when decisions are made together in everyday village life are 16 times more likely to occur then when no decisions are made together in everyday village life (Odds Ratio=16.263; p<0.05). This indicates that when in everyday village life community members participate in the decision making process, it is 16 times more likely they will also participate in the decision making process in Integrated Coastal Zone Management. The same deduction can be made as for decisions being made without discussion; the decision making context of communities influences the decision making process in Integrated Coastal Zone Management.
As it was the case for decision being made without discussion, decision being made with discussion in everyday village life mostly influence decisions being made with discussion in the management process. The differentiation between participatory and non-participatory processes is however not straightforward. When the odds for ‘people who have the largest income having the final word’ are analysed, it can be seen that this likelihood does increase the likelihood for other stakeholders to make decisions without discussion. As this is only the case for people who have the largest income and not for other forms of power (such as being a village leader), the possibility exist that having financial power influences the decision making process more than having any other kind of power. Furthermore, the influence of this financial power in everyday day village life when a participatory process occurs, not only influences, within the management process, this same financial power, but also other forms of power such as political power by the government, non-governmental power by NGO’s and less institutional political power such as village leadership.

Whereas it was the case for non-participatory processes that no correlation could be found between ‘not making any decisions together’ (i.e. items F and 12), for participatory process a significant correlation can be found for ‘decisions being made together’ (i.e. Items A and 1). Even though a relationship can be found between items F and 12, it is not deemed statistically significant, indicating that the possibility of this relationship being based on chance it too high to draw any conclusions. This could indicate that the possibility that participatory process influence other participatory processes is higher than the possibility that non-participatory processes influence non-participatory processes in their extreme. This deduction can however not be made when a comparison is made for the other items within each category; a differentiation in absolute numbers exists, but the differentiation in relationships is either non-existent, extremely small or contradictory. The only case in which a participatory process decreases the odds of a non-participatory process from occur is for item A, ‘decisions being made together’, and item 7 and 11. Specifically this indicates that the odds for either the government or the people with the largest income having all decisions in the management process are less likely to occur when decisions are made together in every day village, then when decisions are not made together.

**Comparison between two research areas**

When a comparison is made between two areas in Vietnam, it can be noted that the likelihood of whether a not a certain decision making process occurs in everyday village life affects whether or not a certain decision making process occurs in the management process, can differ for both regions. The differentiation between the two regions is only present for non-participatory process, either in the management process or in everyday village life. When decisions are made together in everyday village life, a differentiation between the two regions can only be noted concerning decisions being made in everyday village life by the people having the largest income having the final word. For example the odds of the government not making decisions without discussion in the management process, when those people who have the largest income do not have the final word in everyday village life is less likely to occur in Văn Hưng commune then on Cù Lao Chàm (Odds Ratio= .427; p<0.05). The differentiation shows that the likelihood of financial power having influence on the decision making process is larger in Văn Hưng commune then on Cù Lao Chàm. Indicating the decision making context in
Văn Hưng commune differs from that on Cù Lao Chàm; specifically that in Văn Hưng commune it is more likely that having financial power influences the decision making process than on Cù Lao Chàm.

In general the likelihood of non-participatory processes in everyday village life positively influencing (i.e. making it more likely) the likelihood of non-participatory process in the management process is more likely in Văn Hưng commune then on Cù Lao Chàm. There is however one exception: the odds of the village leader not making decisions without discussion when decision are made together in everyday village life, is 2.5 time as likely to occur in Văn Hưng then on Cù Lao Chàm (Odds ratio=2.414; p<0.05). Indicating that the influence of a non-participatory process (i.e. not any decisions made together) is more likely to negatively (making it less likely) influence the likelihood of a non-participatory process in the management process in Văn Hưng commune then on Cù Lao Chàm when it concerns the odds of the village leader making decisions without discussion.

From these odds ratios it can derived that the context of coastal zones influences the decision making process in Integrated Coastal Zone Management. This context however also differs between regions, both having a different influence on the management process; indicating that not only coastal zones have different contexts, but this context also has a different influence on decision making process.

**Van Chai and decision making processes**

The Vietnamese proverb ‘Phép vua thua lê làng’ loosely translated into ‘the King’s rule stops at the village gate’ is an expression of how village life and decision making processes are organised in Vietnam. This system of decentralised power is however not completely straightforward and the long history of Vietnam and its many occupiers have influenced the organisation of village life (Ruddle, 1998). “Van Chai” in this regards is an expression of how the members of these “van” do not fully comprehend or know the regulations of the central Vietnamese power (government), but have a strong adherence to customs and rules of their respective “van” or communities (Ha and Nguyen, 2008; Nguyen and Ruddle, 2010 ). The influence of these “Van Chai” on the decisions making process is therefore one that cannot be dismissed. Without a full analysis of the specific organisation of these “Van Chai” in the two researched areas, it can be noted, as was the case for ‘participation rate’ that differentiation in decisions making processes can be found based on the village and community organisation in accordance with these “Van Chai”. The more rigorous organisation of village according to “Van Chai” on Cù Lao Chàm, and the less rigorous organisation according to “Van Chai” in Văn Hưng commune explicate why differences occur both within and between the two research areas. “Van Chai” however does not explain the exception of the influence of financial power.

5. **Limitations**

It is imperative to note that the analysis on decision making processes does not allow for generalisation. Whereas influence of context can be determine within and between these regions, does not indicate that context influences Integrated Coastal Zone Management within and beyond the borders of Vietnam. No deductions can be made whether or not and to what degree context can or does influence Integrated Coastal
Zone Management beyond the borders of these two research areas. This in itself is due to the nature that context influence context, making it not possible to generalise outcomes. As a recommendation, it is suggested that generalisation is not attempted for the determination of the influence of context on Integrated Coastal Zone Management. Research, whether for scientific or management purposes should always be placed in the context in which it exists.

6. Conclusion

The influence of context in Integrated Coastal Zone Management can be determined on a local level concerning participation rate, community organisation and decision making. Fishery communities are unique in Vietnam in that sense that they know a tradition of “Van Chai”; a tradition that entails a significant cultural legacy of trust and respect. The influence of this Van Chai as expressed in the analyses on participation rate is a clear example as to how a coastal zone’s context influences Integrated Coastal Zone Management. This reasoning is extended to decision making processes, an expression of both participatory processes and management. The analysis of decisions making processes reveals that the manner in which decisions are made in everyday village life influences the manner in which decisions are made in the management process. “Van Chai” is within this regards considered as an analogue explanatory factor as it was for participation rate.

The deduction that Van Chai are an explanatory factor as to why Integrated Coastal Zone Management is influenced by the context in which it is applied and thereby the understanding that Integrated Coastal Zone Management should be adapted to this context, explicates that working within social-ecological systems not only requires an ecological perspective, but also a social and cultural framing of these systems.
References


Bui Thi Thu Hien; Walton, Anne; Tran Minh Hang; Khoo Thuy Duong; Nguyen Bich Hien; Phan Van Bac; Brunner, Jack. 2014. Vietnam marine Protected Area Management Effectiveness Evaluation. IUCN. pp. 86.


Olden, Julian D; Konrad, Christopher P; Melis, Theodore S; Kennard, Mark J; Freeman, Mary C; Mims, Meryl C; Bray, Erin N; Gido, Keith B; Hemphill, Nina P; Lytle, David A; McMullen, Laura E; Pyron, Mark; Robinson, Christopher T; Schmidt, John C; Williams, John G. 2014. Are large-scale flow experiments informing the science and management of freshwater ecosystems? Frontiers in ecology and the environment, 12(3): pp. 176-185.


Chapter 7 Critical realism in practice - Context in Integrated Coastal Zone Management

Abstract

Environmental management approaches such as Integrated Coastal Zone Management are subject to the current discourse of sustainable development and interdisciplinarity. This discourse implies a scientific and academic need for justification of a management approach that addresses the complexity of social-ecological systems with a social and ecological sense of urgency. In response to the current occurrence of ‘island of knowledge’ that result from a disciplinary divergence in both theory and methodology in research on intrinsic interdisciplinary management approaches, this research provides a case specific realist review of a holist research approach to the sustainable management of coastal zones in the realm of social-ecological systems. Through mix-method, meta synthesis, presented via narrative synthesis, the results of quantitative, qualitative and mix-method methodologies are analysed to provide an umbrella insight, encompassing complexity and urgency. The realist review allows for the reconciliation of the aforementioned ‘island of knowledge’ without losing the tangibility of the context of a specific social-ecological system. When a holistic approach on the sustainable management of coastal zones is taken, exemplified by three specific social-ecological systems in Vietnam, four underlying umbrella notions emerge. Both in the frame of research and management the notions of desirability, willingness, pragmatism and capitals express the complexity of both conducting interdisciplinary, multi-stakeholder research and applying interdisciplinary, multi-stakeholder management approaches. The four umbrella notions are presented as a framework within which research and management can develop and implement their respective approaches and methodologies. The framework is presented as such that it allows for the inclusion of the ‘stake’ of all stakeholders, incorporating the need for trade-offs, making use of the various capitals, and placed within the ontology of a specific social-ecological system.

Key words: Integrated Coastal Zone Management, realist review, interdisciplinarity, framework
1. Introduction

The discourse of “sustainability” and the pragmatic approach of “sustainable development” have led to illustrious management paradigms and even ideological rigidity. Management approaches such as Integrated Coastal Zone Management or any form of environmental management has been brought forward not only as an answer to the pragmatic approach of “sustainable development” but also as the ideological conception of “sustainability”: an intrinsically oxymoronic reasoning.

The importance of context in relation to Integrated Coastal Zone Management or other environmental management approaches, sustainable development and sustainability has been suggested by science and practice for several decades (Filho, 2000; Weaver and Rotmans, 2006; Brown et al., 1978). The notion of context is all inclusive as it encompasses all needs and assets (or capitals) of human communities, societies and nations, and nonhuman species. The question on ‘sustainable development’ or ‘sustainability’ is not an either/or question, it is one that needs to be framed within the context in which it exists. The inclusion of nonhuman species is based on the multi-stakeholder aspect of ‘sustainability’ and ‘sustainable development’ in which all living organisms are considered as ‘having a stake’. Context is considered the complex totality of all human and non-human processes that exist, have existed, and will exit on a macro, meso and micro level both as a unity and as disunity, both harmonious and antagonistic. Both research and practice however, lack behind in the realisation of justification for this reasoning, the development of methodologies to provide sufficient and just empirical data to support this reasoning, and the actual implementation of these management approaches adhering to the specificity of a context. The collaboration with social scientists in ecological sciences has brought forward additional dimensions such as consciousness and “zeitgeist” (Müller and Li, 2004). Zeitgeist brings forth a certain discourse; a discourse that pleads for interdisciplinarity (Berkenkotter, 1995). Zeitgeist has been shown to influence notions such as participation within environmental management (Abelshausen, 2014). This zeitgeist, or ontology must be embraced and cannot be avoided (Allenby, 2006). The current zeitgeist in environmental management, e.g. corporate social responsibility, assumes the importance of integration into respective environments, thereby integrating stakeholders’ concerns into decision making processes (Pedersen, 2006). Even though this example does not fully correspond with the approach of Integrated Coastal Zone Management, it does provide an insight into the current social-ecological zeitgeist of integration. Interdisciplinarity, both in research and practice, both results from and lies at the basis of this; it is however either deemed unachievable or is now even more and more denied or contested. “Despite longstanding requests for interdisciplinarity, the development within the academic world has proceeded in the opposite direction” (HØyer and Naess, 2008, pp. 179). Interdisciplinarity is considered an illusion and is considered constraining for progression in science and practice. However, “interdisciplinarity has been fundamentally linked to ecology discourse as well as to sustainable development discourse” (HØyer and Naess, 2008; p. 184). The complexity of social-ecological interconnectedness requires a holism that is both more and something else than the single cells of social ecological systems (HØyer and Naess, 2008).

The current zeitgeist requires the provision of empirical evidence for both ideological and pragmatic notions. This is often referred to as Sackett et al.’s evidence based medicine (1997) or evidence based practice as
referred to by the American Psychological Association (2006) (Ollendick, 2013). In order to provide empirical data on which the relevance of interdisciplinarity and context can be based, consensus or a status quo is deemed needed against which theories are tested. The querying or contestation of existing paradigms and ideologies is however extremely complex (Petticrew et al., 2013). Context in itself implies integration or interaction of the various aspects of life. When this is translated to scientific semantics: context implies multidisciplinarity, interdisciplinarity and transdisciplinarity. This consequently implies a range of (contradicting or mutually exclusive) methodologies, theories and practices. Where does the consensus lie and is it even possible, let alone desirable?

In order to adhere to the pragmatism of the current zeitgeist, an attempt is made to provide this empirical insight. This current zeitgeist entails that research is guided by a certain theoretical framework; a form of theory inspired research that restricts the imaginative capacities of the humanities (Baert, 2004). It is the aim of this research to embrace this imaginative capacity and create insights or theory that not necessarily ‘fits the date neatly’ but that embraces the ability to see things differently (Beart, 2004). Conducting research on the influence of context, or the translatability, for ‘sustainable’ integrated management of coastal zones requires discipline independency, acceptable to and by all disciplines. An attempt is made to provide justification both for the contestation of existing paradigms and discourse and to create a framework in which both theory and practice can be grounded.

As an initial starting point this research entails the notions of participation and knowledge sharing as accepted paradigms and prerequisites for sustainable Integrated Coastal Zone Management. The rigour of methodologies used to research these concepts differs according to the discipline in which they were developed and/or implemented. In an attempt to provide both rigour and justification a combination of methodologies is presented as a means to investigate the relevance and the associated implication of interdisciplinarity. Analysis is based on realist review and narrative synthesis in an attempt for mixed method synthesis that allows for the integration and interpretation of quantitative, mixed-method and qualitative data within a single approach or integrated model to develop explanatory theory and explore/explain complexity (Petticrew, 2013).

2. Methodology

The initial research question is framed in the understanding that the gap in theory in environmental management can be reduced to the question how (Magerum and Born, 1995). The use of applied research is considered essential to provide insight in this gap in theory (Bickman and Rog, 2009). A combination of various methodologies is used to create a methodological approach that answers the necessary questions in a scientifically rigorous manner, acceptable to the various relevant disciplines. Integrated Coastal Zone Management in Vietnam is chosen as a research framework. The framework is chosen to limit the complexity of the human ecology nexus by adhering to one environmental management approach. The choice for Vietnam is based on the possibility it presents to research context within a context that differs from those from which existing theories and proposed practices originate. Furthermore, Integrated Coastal Zone Management offers
the benefit that it aspires a clear sustainability dimensions (Cicin-Sain, 1993). Both the human and ecological dimension of Integrated Coastal Zone Management is complex as it encompasses a wide array of social and cultural specificities, as well as an ecological locality that has a clear global dimension. The analysis conducted is based on realist review and narrative synthesis encompassing literature reviews, qualitative research based on interviews and focus groups, a mixed method research incorporating a systematic review and qualitative research, a longitudinal study and quantitative research based on questionnaires.

2.1. Instrument and analysis

As it is the aim of this article to present the complexity both from a methodological perspective as from a conceptual perspective, the analysis of the various research stages is based on meta-synthesis. Meta-synthesis for this research constitutes quantitative, qualitative, mixed method, meta-synthesis and narrative analysis in order to preserve the rigour of scientific research and complexity of interventions (Petticrew et al., 2013). An attempt is made to provide an interdisciplinary, holistic interpretation based on rigorous academic research. Examples or narratives are used to explicate the different insights without losing the complexity of the research objective by creating fragmented insights, or non-reconcilable islands of knowledge (Walsh and Down, 2005), while at the same time preserving the tangibility of context. The analysis strategy is based on the synthesis strategy and synthesis method framework as adapted by Petticrew et al. (2013). This adapted framework is based on the supplemental guidance by Noyes et al. (Petticrew et al., 2013, p. 1234) to Chapter 20, Qualitative research and Cochrane reviews, of the Cochrane Handbook (Higgins and Green, 2011). The choice is made to conduct mixed-method synthesis to develop an explanatory theory, and explore and explain complexity.

Mixed method synthesis allows for the methodological approach of realist review and narrative synthesis (Petticrew et al., 2013). Realist reviews, a relatively new strategy, aim to provide an explanatory approach to how complex programmes work in specific setting and contexts (Pawson et al., 2005). It is often used in medical sciences concerning interdisciplinary complex issues (e.g. Jackson et al. 2009). Realist reviews are used to analyse complex interventions when empirical justification is lacking and is challenged for its inherent inability for reproduction and transparency because of the iterative nature of interpretive processes (Petticrew et al., 2013). Narrative synthesis is a means to tell a trustworthy story (Popay et al., 2006) and is used to directly inform policy makers and practitioners via iteration of transformation and translation of primary studies when epistemology of a complex issue is not yet clear (Petticrew et al. 2013). The same challenges as for realist reviews exist namely the incapacity for reproduction and transparency (Petticrew et al., 2013). The guiding question for the realist review and the narrative synthesis is ‘how’ from a science and academic perspective and from a pragmatic management perspective. The various studies included in the mixed method synthesis comprise of literature reviews, interviews, focus groups, systematic review, longitudinal study, and questionnaires [Table 8]
<table>
<thead>
<tr>
<th>Instrument</th>
<th>Sample</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data Collection Round 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Literature review</td>
<td>Literature on participation and knowledge sharing in natural resource management in general and specific in Vietnam</td>
<td>Snowballing</td>
</tr>
<tr>
<td>Literature review</td>
<td>Literature on participation since 1960s</td>
<td>Snowballing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2010(n)</td>
<td>2013(n)</td>
</tr>
<tr>
<td>Semi-structured Interviews</td>
<td>National level stakeholder</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Local levels stakeholders</td>
<td></td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coding analysis (Lofland et al, 2005; Miles and Hubermand, 1994; Taylor and Bogdan, 1988)</td>
</tr>
<tr>
<td></td>
<td>Groups(n)</td>
<td>Respondents(n)</td>
</tr>
<tr>
<td>Focus groups</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>61</td>
</tr>
<tr>
<td></td>
<td>Coding analysis (Lofland et al, 2005; Miles and Hubermand, 1994; Taylor and Bogdan, 1988)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Groups(n)</td>
<td>Respondents(n)</td>
</tr>
<tr>
<td>Longitudinal Study</td>
<td>Interviews*</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coding analysis (Lofland et al, 2005; Miles and Hubermand, 1994; Taylor and Bogdan, 1988)</td>
</tr>
<tr>
<td></td>
<td>Focus groups*</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>61</td>
</tr>
<tr>
<td></td>
<td>Longitudinal analysis (Gibss, 2007)</td>
<td></td>
</tr>
<tr>
<td><strong>Data collection round 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systematic review</td>
<td>Literature on disasters, natural resources, governance, ecosystems, local ecological knowledge, and models.</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Systematic review entailed a systematic search on 'ICZM' AND 'Vietnam'. Databases: Scopus, Proquest, Web of Science, Science direct. Qualitative and Quantitative study designs: Heterogenous studies presented via narrative summary using meta-synthesis.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Studies(n)</td>
<td></td>
</tr>
<tr>
<td>Quantitative analysis</td>
<td>Van Hưng commune</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Xuân Tự 1</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Xuân Tự 2</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>Xuân Vinh</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Xuân Tây</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Xuân Đông</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Hà Già</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Van Hiep commune</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Thôn Bãi Ông</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>Thôn Cằm</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Bãi Làng</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Bãi Hương</td>
<td>27</td>
</tr>
</tbody>
</table>
Data gathering was initiated by conducting interviews. A process that expanded a one year time period, allowing for the just introduction of the researcher in the identified communities and to create a relationship between the researcher and the possible respondents based on mutual understanding and trust. This resulted in the researcher residing in the research area for an initial period of eight months, taking part in everyday village live and specifically partaking in activities related to Integrated Coastal Zone Management. The data collection from interviews served a dual purpose. On the one hand the questions asked provided a baseline insight in the current (i.e. 2013) understanding and implementation of participation, knowledge sharing, integrated coastal zone management, specifically a marine protected area (MPA) (Trinh and Brown, 2008) approach and a locally managed marine area (LMMA) (Hien, 2004) approach. On the other hand, the questions served as a guide to develop questionnaires, taking account of the social and cultural sensitivities, semantics, levels of understanding, and community organisation. To collect data at community level focus group discussions where organised, within and outside the management scope. This indicates that groups of respondents are either chosen randomly, within the strata of the management approach or within the community organisation.

This allowed for the preparation of the second data gathering round, i.e. questionnaires. Based on the first data gathering round, questionnaires were developed and conducted as such that they adhered to the administrative requirements (introduction and invitation), and the social and cultural sensitivities. This allowed for gender and age representation based on the social organisation of the community. Specifically, this resulted in conducting questionnaires following the “Van Chai” patterns of predominantly fishing based communities. The content of the questionnaires themselves also served a dual purpose. On the one hand, the questionnaires were conducted to provide baseline socio-economic information, as socio-economic data in these communities is either tacit or non-existent or untrustworthy. On the other hand, the questionnaires provide insight in participation and knowledge sharing, cultural values and traditions and the management process. Concerning participation and knowledge sharing; questions relate to the actual participation rate both in everyday life through groups or activities such as farmers unions to the reasons why respondents participate in management related activities, to the extent to which they consider themselves active or passive participants and whether or not they were involved in the development of these activities, to the level of skills and knowledge they acquire from management activities, and the source of their knowledge and skills concerning the management approach. Questions related to cultural values and traditions entail social organisation, the importance of familial relationships, friendships, relationships with co-workers and other community members, gender, decision making processes in families, villages and the community in everyday life and in relation to the management process. Questions related to the management processes cover the experiences of respondents in relation to their level of involvement, the level of contribution, the level of comfort, the level of knowledge gained and the sustainability of the management process based on the efficiency, effectiveness, social relevance and impact of the management process from a social, economic or ecological perspective.

Resulting from this first and second data collection round, a gap in theoretical consensus was identified, namely on the latter sustainability questions, and the concepts of participation and knowledge sharing. A lack
of consensus on the notion of sustainability is identified, as well as an inconsistency between the understanding of Integrated Coastal Zone Management, participation and knowledge sharing resulting in a gap in the theoretical framework against which the results of analysis are placed. Subsequently, additional data collection is conducted based on literature. Literature reviews on participation and knowledge sharing are conducted to frame these concepts in both their conceptual zeitgeist and the context of Vietnam. A systematic review on the concept of ‘sustainability’ and ‘sustainable development’ in Vietnam is conducted to create a frame of reference, or theoretical framework, against which results can be placed.

As a final step, the data collected in the first data collection round (2011) is compared to preceding research conducted (2013) and analysed using the same methodological approach of coding to provide insight in longitudinal processes.

3. Results

The result section is organised according to the concepts on which this research is based and the underlying insights gained. Specifically, the result section comprises a section on the theory versus practice dimension of Integrated Coastal Zone Management, the concept of participation and knowledge sharing and the notion of sustainability and sustainable development.

3.1. Context specific research experiences

When applying existing research methodologies from applied research such as focus groups, interviews, questionnaires et cetera; the context of Vietnam showed to be more challenging than expected. Firstly, when conducting academically rigorous research, specific research requirements need to be adhered to. The cultural and social differentiations, that exist between the context and zeitgeist in which these methodologies are developed and the context and zeitgeist in which they are applied are vast. Consequently, not only are the theories on participation and knowledge sharing researched, but also the research methodologies themselves used to research the applicability and possible contribution to sustainability. These challenges are complex to identify and thereby complex to incorporate in the methodologies without losing scientific rigour. For example, conducting any kind of research in Vietnam requires the approval of government officials and an introduction in communities through government channels. Specifically, this implies an introduction and invitation letter being send to potential respondents with a government stamp. Bias resulting from this is vast as researchers are introduced as being associated with the government. In the socialist republic of Vietnam, this leads to a lack of trust between the researcher and the respondents in terms of anonymity and thereby the possible risk of repercussions. Socially and in this case specifically politically desirable answers are thereby very difficult to avoid. The cultural, social and political landscape of Vietnam requires a long-term commitment in which one must become an entrusted member of a community (to a certain extent) before one can conduct ethically sound and academically rigorous research. Complete avoidance of this bias is however impossible, but it can be limited to an acceptable degree as this form of bias is always present in applied research.
Besides the risk of bias, the methodologies themselves are not easily applicable in a different social and cultural context. Conducting questionnaires is challenging because one needs to work with translators, which is true both for foreign and domestic researchers on two levels. Firstly, academic semantics need to be translated to semantics understandable for respondents with low(er) levels of formal education. This is however true for research in every region with heterogeneous respondent groups. Secondly, in Vietnam, Vietnamese also needs to be translated to the local dialect as linguistic differentiation between regions is vast. The need for this is based on linguistic requirements; it is however also preferable to introduce translators from different regions, as it is the case for researchers, to become entrusted members. These prerequisites may lead to a lack of rigour resulting from a lack of academically trustworthy translators, knowledgeable with the local dialect and entrusted within a specific locality. The use of local translators is often the only option, leading to bias of either familiarity or again socially or politically desirable responses due to government affiliation. The use of questionnaires is a highly confrontational methodology in Vietnam due to respondents having to answer ‘in writing’ which increases the aforementioned bias. Consequently this leads to respondents ‘literally’ running away from researchers. Questionnaires are however a non-dismissible research tool especially as they are accepted in various disciplines. Qualitative research tools are however more easily accepted by Vietnamese respondents and more easily applied without losing scientific rigour. These methodologies are however also not without their challenges. For example, interviews are recorded using a recording device. As one needs to require permission before recoding, the presence of the recorder is amplified and the same bias occurs as with providing answers ‘in writing’. Furthermore, this methodology requires a rigorous process in which no outside interference is allowed. In Vietnam, this is nearly impossible to achieve due to various reasons. For example telephones are never turned off and doors are never locked, allowing for constant intrusions. Due to the cultural and social relationships between gender, age and place of residence, enforcement of these rules is not possible and is considered offensive. Therefore, a balance is required between retaining academic rigour and the risk of offensive behaviour leading to response alterations, either in the form of bias, distrust and defiance.

Besides the zeitgeist’s need to adhere to empirical justification and the complexity of contextual differentiation, this need also results in the creation of ‘islands of knowledge’. ‘Islands of knowledge’ in that sense that generalisation has become challenging and a translation of insights gained following this empirical justification to other contexts, whether in theory or practice has become increasingly challenging. Several attempts, specifically in methodological approach, have been made to overcome these challenges. The increased use and the increased merit given to analysis tools such as meta-synthesis, as opposed or complementary to meta-analysis, have allowed for the bridging of disciplines. New analysis methodologies such as realist review and or established methodologies such as narrative synthesis allow for even more methodological freedom, although still adhering to rigour. These approaches allow for comparison or generalisation within the current zeitgeist. They do however not allow for moving beyond the current zeitgeist of empirical justification and therefore do not question the merit of this need for justification.
3.2. Theory versus practice

Research based on empirical data from interviews, using the qualitative methodology of coding/labelling revealed that a differentiation exists between theory and practice (Abelshausen, 2015). This realisation is accepted and supported both by disciplinary and interdisciplinary science mentalities (Soomai et al., 2016). This realisation however moves further than the need to adapt existing practices to existing theories and implies an adaptation of existing theories to existing practices. For example, Brown et al. (2012) make use of experiences from urban climate change resilience for refinement of theory and practice. The main justification, although these are plentiful, lies in the ecological and social urgency of today’s global challenges. On the one hand, this urgency implies a time sensitivity that constrains research that results in paradigm shifts. On the other hand, research into the sustainability, in the sense of sustaining the current societal values and achievements or in the desire to evolve into a “better” society (societies), has shown that current practices do not meet the complexity and scale of these challenges. Not one conclusive practice has shown to yield only ‘sustainable’ results: practices appear to improve one aspect and on the other hand limit others, or are shown to be too time-consuming to adhere to the current sense of urgency. In itself, this challenge is often referred to as trade-offs. These trade-offs however cannot be sufficiently justified when the complex, interdisciplinary, and even holistic reality is neither understood nor explained nor incorporated nor embodied.

Specifically, the differentiation between theory and practice finds itself in the complexity of understanding what the underlying concepts of Integrated Coastal Zone Management entail. Qualitative and longitudinal research revealed that this understanding is subject to power. This power, within the context of Vietnam, is expressed in the hierarchical organisation of the country. Initial research in the understanding of participation and knowledge sharing in Integrated Coastal Zone Management in Vietnam (Abelshausen, 2015) reveals that the level of power influences on the one hand the level of understanding both from a practical and a theoretical perspective, and on the other hand the willingness of stakeholders to increase this understanding and to exercise participation and knowledge sharing. Power influences the level of understanding in an inversely proportional manner. In theory, the level of power of stakeholders, i.e. the rung on the hierarchical ladder, influences the level of understanding in such a manner that the higher a stakeholder finds himself on this ladder, the more comprehensive his theoretical understanding is. Inversely, in practice, the lower a stakeholder finds himself on this ladder, the more comprehensive his practical understanding is. Specifically this expresses itself in high level stakeholders [Table 8] understanding the benefits and challenges of participation, in Vietnam known as co-management, but lacking in understanding implementation. Inversely, low level stakeholders [Table 8] implement some form of co-management without the comprehension of the benefits and challenges of this co-management. This differentiation is however not distinct. The longitudinal study in participation and knowledge sharing in Integrated Coastal Zone management in Vietnam revealed that the implementation of the decentralisation policy results in less distinct or even contradicting differentiations. Specifically, it shows that on a meso level of social organisation, in Vietnam being provincial and district level, an increase in power does not influence the level of understanding and even decreases it. This indicates that concerning the influence of power on the theory versus practice division, the level in which stakeholders find
themselves influences their level of understanding more than an increase in power within this level. An increase in power beyond their initial level, i.e. moving between micro, meso and macro, does influence the level of understanding in an inversely proportional manner.

Besides the level of understanding, the notion of power also influences the level of willingness to participate and share knowledge. Qualitative research in Vietnam reveals that this willingness is related to reluctance for change deeply embedded in the Vietnamese hierarchy. In the top-end of the hierarchical ladder of social organisation, this reluctance for change stems from the understanding that knowledge sharing and participation ultimately results in power sharing. The unwillingness and reluctance expresses itself therefore in an unwillingness and reluctance to share this power. On the bottom-end of the ladder, this unwillingness for change is expressed in a duality present in the everyday lives of low level stakeholders. This duality finds itself in the historical dependence on the government in all aspects of everyday life and has resulted in an attitude of “waiting”. In response to this attitude of “waiting”, in the past few decades, an attitude of “we have waited long enough” has emerged that expresses itself in bottom-up or grass-root initiatives in the realm of everyday life. The duality lies in the understanding that both attitudes are present simultaneous and the presence of one does not counteract the presence of the other.

3.3. Participation and knowledge sharing

Analysis on participation and knowledge sharing is based on empirical data from interviews and focus groups and on literature reviews. An analysis of the conceptualisations of participation and knowledge sharing and the expression of these conceptualisations in Vietnam revealed that these conceptualisations are highly dependent on the zeitgeist in which they exist. This indicated that when these conceptualisations are applied in a context different from the one in which they originated, adaptation is needed. Research revealed for example that the concept of participation evolved from democratising processes. Applying this concept in a socialist context is therefore not straightforward and adaptation is needed. The reason for this adaptation finds itself in the extensive influence the Western world has on a country such as Vietnam. The need of the Western world to develop the country of Vietnam and the associated “democratising development cooperation’, results in conditional development efforts. These conditional development efforts express themselves in the prerequisite of participation and knowledge sharing in development cooperation within the frame of Integrated Coastal Zone Management. These prerequisites adhere to the Western zeitgeist in which these conceptualisations originated. Vietnam, as every other nation in the world, knows its own zeitgeists; zeitgeists in which participation and knowledge sharing know their own origin and evolution. A clear example that has emerged from research is the social organisation of fishery communities according to Van Chai. Van Chai are a clear expression of the duality concerning participation and knowledge sharing and a clear expression of participation and knowledge sharing evolving from the zeitgeists in which Vietnam has found itself. They constitute a form of social organisation based on kinship and friendship organised around a common fishing tool. Specifically, it is the division of communities in clusters of families or groups of friends that use the same fishing gear for their livelihood. These Van Chai are an explication of the expression “the kings reign ends at the village gate”. This expression explicates the organisation of the Vietnamese society as it has been and has
evolved throughout history. It explicates the importance of trust and shared decision making organised around cultural, social and economic values that exists both within and outside the Vietnamese society. On the one hand the hierarchical organisation of Vietnam influences societal life in its totality. On the other hand however, at the village gate, the organisation of village life expresses a self-realisation.

3.4. Sustainable development or sustainability

In order to provide empirical justification for the inclusion of context in Integrated Coastal Zone Management to achieve ‘sustainable development’ or ‘sustainability’ firstly it needs to be determined what this ‘sustainable development’ or ‘sustainability’ entails.

A systematic literature review in ‘sustainable development’ and ‘sustainability’ in Vietnam revealed that the definition adhered to in Integrated Coastal Zone Management is the definition of sustainable development. Within the geographical boundaries of Vietnam, Sustainable Development (SD) is theoretically defined as: “a long term holistic, cross-sectoral, interregional, and multi- and interdisciplinary approach that requires a long term perspective and trade-offs, preferably short term, between economic, social and environmental impacts. As an endgame ‘sustainable development’ should result in a balance between these impacts. As an initial starting point ‘sustainable development’ has an environmental dimension and appears to be viewed as a response to environmental challenges such as climate change, sea level rise, pollution, and natural disasters. On the other hand, ‘sustainable development’ has a strong socio-economic goal wherein livelihood and poverty alleviation/eradication are the main drivers of ‘sustainable development’. Responses to ‘sustainable development’ challenges are centred on a local and ecological embedding in interrelated social and ecological systems. Local embedding of ‘sustainable development’ starts from the notion that the opportunity for local voices to be heard will result in collaboration and cooperation. This should be expressed via the creation of community networks and the sharing of power between stakeholders to allow for human wellbeing in the frame of common interests. The institutional dimension of local embedding lies within the provision and acceptance of rights and responsibilities, and the provision of international humanitarian aid and government funding. The underlying reasoning for responses to ‘sustainable development’ challenges include the necessity of community resilience as a response to community vulnerability, the need to diversify production to sustain ecosystem services, the importance placed on the sharing of knowledge, and the value given to local ecological knowledge. In general these strategies result in prevention, mitigation and adaptation efforts.” (Definition synthesised from systematic review; see Chapter 4). The systematic review revealed besides a pragmatic definition on sustainable development in Integrated Coastal Zone Management that a differentiation exists between sustainability and sustainable development. Sustainable development is the pragmatic expression of sustainability based on the time-sensitive reality of development. Development as it is understood in our current zeitgeist is time-sensitive as in the current reality of ‘tipping-points’ in all realms of life, there is no to time to wait until a consensus is reached on sustainability. This differentiation is important when making trade-offs as perhaps it might prove more sustainable to make certain trade-offs even if they restrain sustainable development and vice versa.
4. Discussion

Research in Integrated Coastal Zone Management revealed two main insights. These insights find their expression in the four underlying concepts identified throughout the research and are therefore presented in the discussion accordingly. The first insight is derived from the research experience and limitedly from research via systematic review. The insight entails the notion of interdisciplinarity from a research perspective. The second insight entails the notion of interdisciplinarity or interconnectedness from a context perspective.

The analysis based on the various research stages, data collection rounds and methodologies reveals an underlying conceptualisation. A framework based on four underlying concepts constitutes a pragmatic representation of the social-ecological system complexity. The reasoning for a pragmatic approach is indicative of the current zeitgeist (Baert, 2004). On the one hand this zeitgeist expresses itself in the academic discourse by the need to provide empirically just, acceptable to all, easy to swallow bites of scientific research. On the other hand, this expression lies in the current development ‘ideology’ that dictates an ‘illusive’ progression towards something ‘better’ (Hellund-de Wit, 2013). The framework consists of four notions: willingness, desirability, pragmatisms and capitals [Figure 7].

Figure 7 Four-Notion Framework

![Four-Notion Framework](image)

4.1. Willingness

The notion of willingness is one that explicates itself in two manners: in theory and in practice. In theory, this understanding finds itself in the academic realm as the willingness of interdisciplinarity. Interdisciplinarity in that sense that it is the desire of localities to understand the complexity of their reality. Research in the
contextualisation of Integrated Coastal Zone Management showed that the current discourse in environmental sustainability science is dominated by an ecological perspective. This perspective translates itself in a theoretical understanding of sustainable development and environmental management from an ecological starting point and with an ecological endgame; with a strong social, predominantly economic, causality. This ecological predomination, and therefore one-sidedness reflects a dual (un)willingness. An unwillingness for disciplines to tackle academic, scientific complex realities, i.e. social-ecological realities. This unwillingness also translates itself in unwillingness for mutual understanding or acceptance.

The division presented between theory and practice is evidently not distinct. In practice, the theoretical unwillingness for interdisciplinarity has significant societal and in specific within the frame of Integrated Coastal Zone Management, managerial consequences. Whether it concerns for example the building of dams to counteract urgent ecological challenges or the displacement of communities for sustainably sound alternatives or capacity building measures for sustainable livelihood alternatives an inherent interdisciplinarity lies at the basis of this. Research in localities in Integrated Coastal Zone Management reveals that willingness also translates itself in a willingness analogue to that of the theory of sharing knowledge. At the basis of this willingness to share knowledge is the notion of power. The level of willingness is highly dependent on the context in which one exists, specifically on the locality in which one exists. Locality in this sense interpreted as the interconnectedness across different levels: micro, meso, macro; local, regional or global, i.e. glocal. Research within these localities, with the local cultural specificities, based on a historic global interconnectedness, economic reality grounded within local and global ecosystems and ecologies, evolving from local and global traditions and interconnectedness, evolving as a result of globalising trends provides specific empirical justification for this reasoning.

### 4.2. Desirability

Desirability finds itself in the understanding that in interdisciplinary, multi-stakeholder social-ecological contexts the social, ecological, economic and institutional desires are vast, contradicting or supplementary. The notion of desirability expresses itself in the notion of trade-offs. Trade-offs are conceptualised in economics, concerning sustainability within social-ecological systems they are however far more complex.

The discourse of sustainability and the creation of the concept ‘sustainable development’ have resulted in an oxymoronic approach. Oxymoronic in that sense that on the one hand it entails a philosophical questioning of the most basic human question ‘What is the purpose of our existence’ and on the other hand the illustrious notion of development. The human race has evolved into a species that has lost the basic reality of its existence, namely that it is a species: humans as a physical being that are subject to the same fragility and strength as any other living species. This displacement from the physical world is often referred to in environmental ethics as anthropocentric (Attfield, 2014). It is the moral superiority of the human race that is predominant in the current ‘Western’ zeitgeist (Juric, 2015). This sense of superiority is, in its extreme, contested by for example deep ecology, or Naess’s ecosophy T, with the fundamental ethical norm of “Self-realisation” (Talukder, 2016). This Self-realisation recognises that human beings are not removed from nature
but are interconnected with it (Wang, 2016). It is a “realisation” in the sense that the creation of ecological consciousness in which a widest possible relationship with the non-human world is achieved, results in the creation of moral and ethical principles being unnecessary as humans will naturally protect the environment and allow it to flourish (Juric, 2015). It is these philosophical queries that create the oxymoronic relationship with “sustainable development”. Sustainable development is centred in the anthropogenic philosophy on ecology as the notion of development requires a worldview that aspires change or evolution toward not merely something else, but something better. As far as it is currently known, the human species is the only species that makes such aspiration. The reality of this anthropocentric world view has resulted in an utilisation of the non-human world with the aim of development rather than sustenance. When linking this reasoning to the strong-weak sustainable development division, it can be noted that this division is not clearly made when introducing context. This introduction of context implies that ‘sustainable development’ can be both strong and weak and a clear differentiation cannot (and should not) be made as the determination of what is natural and ‘manufactured or man-made’ capital highly depends on contexts and zeitgeists.

Contextualisation finds itself at the intersection between the ideology of sustainability and the human creation of ‘sustainable development’. It entails the placement of social-ecological systems in its intrinsic human nature and in its urgency of preserving time to find the answers to the illusive basic human questions. And it is therefore that the reality of social-ecological systems with a human interpretation of sustainability or sustainable development, questions the desirability of preservation and flourishment of the non-human world. This desirability expresses itself in the current zeitgeist as interdisciplinarity. Interdisciplinarity as it is currently the most fundamental societal question. Within the frame of Integrated Coastal Zone Management the notion of desirability finds itself in the realm of social ecological systems. The current global and local reality of ecological and social urgencies requires a trade-off between social and ecological desires, a trade-off between strong and weak sustainability. This trade-off being not only an ‘either/or’, but also an ‘in case off/and’ consideration. Within the current paradigms and discourses of anthropogenesis and ecosophy these trade-offs need to be placed in front of the mirror of desirability. A desirability that is dependent and variable according to the worldview, or to put it in academic semantics, disciplines in which one exists. Research in the contextualisation of Integrated Coastal Zone Management places this desirability in the expression of trade-offs between the short-term sustainable development goals and the long term sustainability ideology. Desirability is expressed in a locality in for example the trade-off between economic or social needs or desires and ecological desires. The case studies conducted in Vietnam explicate this in the trade-off between the preservation of coral reefs, the economic revenue gained from this natural resources and the social desire to leave the island to achieve the goal of a “better life”. The question of desirability reflects upon the worldview in which one exists. To explicate this in the extreme philosophies of antrophogenesis and ecosophy, this would translate in the following desires. From an anthropogenic worldview this translates in the localities of the case studies in the desire to gain social and economic development and at the same time preserve nature. Pragmatically this expresses itself in the development of ecological sound economically and socially oriented goals and objectives. From an ecosophy perspective this explicates itself in the researched localities as the acceptance of understanding of oneself as a part of the non-natural in which one lives in harmony with its surroundings.
Pragmatically, this translates itself as the understanding that coral reefs are not natural ‘resources’ but merely a natural equivalent to humans in its importance or lack thereof. It is the understanding that human life on island or in coastal communities is mutually in- and exclusive with coral life.

The complexity of the notion of desirability lies in the understanding that different worldviews will result in different trade-offs. The understanding that trade-offs are placed within worldviews results in the complexity that these trade-off can ultimately be completely redundant or completely accurate. The concept of time creates the impossibility of non-actions. All life lives and therefore non-action is not possible as it would result in non-life. Life and thereby time creates the notion of trade-offs. The understanding that these trade-offs are dependent on worldviews, dependent on zeitgeists justifies the need for contextualisation.

4.3. Pragmatism

Pragmatism is the philosophical school that criticises the rigorous implementation of theory and adheres to truth as an ideology that is practically applicable. Within the frame of this research pragmatism refers to the context in which Integrated Coastal Zone Management is applied. Pragmatic in that sense that Integrated Coastal Zone Management should be adapted to the context in which it exists. Pragmatism expresses itself on a micro, meso, and macro level, with a clear local, regional and global dimension.

Integrated Coastal Zone Management as a management approach is confined within the boundaries of nation, within the boundaries of a region and within the boundaries of the world. The reason for this is the mere ecological reality of oceans: a local, regional and global interaction is unmistakeably undeniable. Oceans and ocean life do not adhere to administrative boundaries and therefore neither should Integrated Coastal Zone Management. Pragmatism is however needed to make Integrated Coastal Zone Management feasible. From the moment humans created the notion of borders and nations, a distance with ecosystems was created, one that needs to be bridged again if humans aim to restore and preserve these ecosystems.

At micro level pragmatism is expressed in the need to translate Integrated Coastal Zone Management to a local level. The example of social organisation according to Van Chai is used to explicate the conceptualisation of pragmatism. If Integrated Coastal Zone Management is applied at local level, it needs to adhere to the social and cultural organisation of the localities in which it is applied. As Vietnamese fishery communities are organised according to Van Chao, than participation and knowledge sharing conceptualisations and implementation should be adapted to fit this reality. Van Chai know a rich tradition in decision making, a tradition that makes sense in Vietnam and cannot be dismissed. The opportunity to implement Integrated Coastal Zone Management lies in these Van Chai as participation and knowledge sharing practices have long been present in the Vietnamese society. By translating Integrated Coastal Zone Management at a local level to the Van Chai organisation of everyday village life, the restraint of zeitgeist dependent conceptualisation is limited as the zeitgeist of Van Chai is used to reconceptualise and thereby allowing for pragmatic implementation. Decision making processes within these Van Chai differ dependent on the context in which they exist, explicating the need for translation even within the borders of Vietnam.
The need for differentiation dependent on context finds its expression in Vietnam not only within one level, but also between the different levels. At meso level this expression finds itself in the day-to-day management of coral reefs. As the social organisation of everyday village according to Van Chai stops at the village gate and from this gate the reign of the king prevails, a differentiation with the micro-level is needed. The case of Van Hưng commune for example explicated that neither ocean life nor humans adhere to administrative borders. Borders defined in the management of Ran Trao are not respected by humans living outside the Locally Managed Marine Areas. The provision of ownership within this approach is limited to community members of Van Hưng, Ran Trao is however utilised for livelihoods by communities beyond the Van Hưng borders. This complexity of borders and ownership finds expression in social, economic, cultural and institutional dimensions. From a meso perspective the notion of power and reluctance for change are introduced. This reluctance for change and the associated willingness for participation and knowledge sharing, is dependent on the level of power that stakeholders possess. Pragmatism expresses itself on the meso-level in that manner that policies such as decentralisation and recentralisation need to be taken into account when applying Integrated Coastal Zone Management. As the level of power influences the level of understanding and willingness, the context of power at meso-level influences the manner in which Integrated Coastal Zone Management is implemented.

On a macro-level pragmatism expresses itself in the need to create a national decision making, participatory and knowledge sharing framework. This indicates that again policies such as decentralisation need to be taken into account. This decentralisation has in Vietnam influenced Integrated Coastal Zone Management in that manner that it has resulted in increased fragmentation of management efforts and an increase of an administrative approach, rather than an ecosystem approach. At macro level, pragmatism finds itself in the creation of opportunity for decision making across administration, within and across ecosystems.

The examples of pragmatism as aforementioned are examples within a local dimension. Pragmatism also has strong regional and global dimension. For example as ocean waters are utilised by various nations, international approaches are needed. From a global perspective, global climatic changes and causalities require global approaches.

4.4. Capitals

Capitals are a common and widely interpreted notion within the environmental management and sustainable development discourse. Originating in rural development sciences, a five-capital framework emerged already in the 1990’s. These five capitals, subject to varying semantics, are produced, human, natural, social and cultural capital (Bebbington, 1999). The development dimension of these capitals results in and from the notion of scarcity. Scarcity is seen as the explication of the economic interpretation to the unlimited human demand for these capitals and the limitedness of the availability of these capitals. The choice for adhering to the term of capital, is a pragmatic choice made despite of the understanding that the terminology of capitals entails a specific discourse on its own, namely that of ‘sustainable development’.
Research in the two localities reveals that these capitals are indeed present in the realm of their contexts. The most prominent example of produced capital, or build capital as it is mostly referred to Integrated Coastal Zone Management are dams. Human capital expresses itself in the two research localities for example as local ecological knowledge. Van Chai are an expression of what is referred to as social capital. An example of natural capital in the two research areas are coral reefs. Financial capital is the explication of development in for example bank notes based on the value of the other capitals. Financial capital in Vietnam is explicated in the two research localities as the monetary value of tourism, coral reefs etc. The clear economic dimension to these capitals is however restraining when contextualising Integrated Coastal Zone Management. The notion of development is explicated for example by the interpretation given to financial capital. Financial capital is seen as the capital that enables ownership and trading of the other capital. This entails that all other capitals are components of development rather than self-contained capitals. Natural capital for example in this reasoning serves the purpose of development rather than as a capital just for the mere existence of nature. The same reasoning goes for human capital, indicating that all knowledge and skills acquired serves the purpose of development and should be traded. This makes knowledge and skills not self-containing and thereby making untradeable knowledge redundant.

These capitals in themselves have inherent values and when they are placed within the contextualisation of Integrated Coastal Zone Management, they move beyond the notion of development. The introduction of the notion sustainable, either as sustainable development and sustainability, implies that these capitals serve more than the purpose of development. These capitals should be viewed as stand-alone capitals of which their interconnectedness allows for the sustainable integrated nature of contextualising the management of coastal zones.

5. Conclusion

Contextualising Integrated Coastal Zone Management finds its empirical justification through case study research (qualitative and quantitative), literature reviews and longitudinal studies. Justification finds its grounds in the interlinked notions of zeitgeist and context. Theories on the concepts of participation and knowledge sharing are developed and implemented in specific zeitgeists. Potential differing zeitgeists result in challenges concerning development and implementation of management approaches, specifically the translatability of these approaches from one zeitgeist to another. Context is perceived as the umbrella conceptualisation as such that in encompasses these zeitgeists and connects them with their respective social, economic, institutional and ecological reality from a local, regional and global perspectives. Contextualisation can be empirically justified and proclaims the necessity for interdisciplinarity not only in everyday life, but also in academia. In order to evolve from a theory versus practice reality into a theory ‘and’ practice reality contextualisation provides a possible framework in which this evolution can be grounded. The conceptualisations of this framework entail the questioning and embodying of the desirability, willingness, pragmatism and capitals of all ‘management’ efforts and for all stakeholders if the ideology of sustainability is adhered to and the human creation of ‘sustainable development’ is strived for.
References


Abelshausen, Bieke; Vanwing, Tom; Xuan, Tuan Le; Thi, Van Tran. 2014. Participation throughout the decades: how the zeitgeis influences both theory and practice: A case study. Procedia – Social and behavioural Sciences 191: pp. 1713-1717.


Jackson, Lois; Langville, Lynn; Lyons, Renee; Hughes, Jean; Martin Debbie; Winstanley, Viola. 2009. Does moving from a high-poverty to lower-poverty neighbourhood improve mental health? A realist review of ‘Moving to Opportunity’. Health & Place, 15, pp. 961-970.


Popay, Jennie; Roberts, Helen; Sowden, Amanda; Petticrew, Mark; Arai, Lisa; Rodgers, Marc; Britten, Nicky; Roen, Katrina; Duffy, Steven. 2006. Guidance on the conduct of narrative synthesis in systematic reviews. ERSC Methods Programme, p. 92.


