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Improving Stewardship of Marine Resources: Linking Strategy to Opportunity

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Received: 21 May 2014; in revised form: 9 July 2014 / Accepted: 10 July 2014 /

Published: 18 July 2014

Abstract: The need for improved stewardship of coastal and marine resources is evident worldwide. However, complex ecosystem dynamics, institutional inertia, and budgetary constraints impede such action. This study explores how networks of change-oriented individuals or “institutional entrepreneurs” can introduce new types of human-environment interaction. The focus is on investigating the interplay between the strategies of institutional entrepreneurs and broader system dynamics that shape the context in which they are working, and possible impacts of institutional entrepreneurship on marine governance. We explore these issues in the context of Wakatobi National Park in eastern Indonesia. We suggest that creating links between different social spheres, such as between marine resource management and spirituality or between marine resource management and education, may accelerate the development of a new ecosystem stewardship. We further suggest that the use of media has significant power to show alternative futures, but that media may also serve to objectify certain resource users and increase the complexity of marine resource management. In general, institutional entrepreneurs play an important role in capturing and managing opportunity to open up space for experimentation and novel ideas, for example by linking their ideas to broader political priorities. Yet, such strategies bear the risk of institutional capture. Finally, institutional entrepreneurs sometimes have vested interests in certain solutions that may forsake experimentation toward a sustainable future.

Keywords: Institutional entrepreneurship; marine governance; MPA; ecosystem stewardship; Wakatobi National Park; Coral Triangle

1. Introduction

The need for institutional change in the context of marine governance is evident across the world. In many tropical coastal areas anthropogenic stresses on coral reef ecosystems and associated fisheries are eroding future opportunities for human wellbeing [1,2]. Enhancing the resilience of these areas is challenging, not only because of institutional inertia but also because multiple stresses act at any one place [3], public opinion often causes a delay in problem recognition [4], and budgetary constraints impede action [2]. Previous research on ecosystem governance shows that institutional entrepreneurs have a key role to play in introducing new forms of governance that can better deal with this complexity and contribute to a sustainable future [5–8]. These entrepreneurs are groups of individuals, organizations, and networks that initiate divergent changes and participate in their implementation by actively mobilizing resources [9]. The concept of entrepreneurship enables a shift from focusing on the leader-follower relationship to the endeavor of leadership itself, and to the context which enables or constrains agency [10]. However, as pointed out by Westley and colleagues [10], there is a need for studies that add detail and nuance to the understanding of the interplay between the different strategies that entrepreneurs use and the broader system dynamics that shape the context in which they are working.

The present study addresses this need through exploring how institutional entrepreneurs operating at the district government level can pursue different strategies within a broader governance context so as to enable a new ecosystem stewardship. This necessitates understanding of how opportunities at higher institutional levels can be captured and scaled down, as well as how local initiatives can be scaled up. A critical analysis of the outcomes of these processes is necessary to recognize how institutional entrepreneurship may affect marine governance locally. These goals are addressed through examining a case study of institutional entrepreneurship in Wakatobi National Park (WNP) which is located in Southeast Sulawesi, Indonesia. WNP is centrally situated within the Coral Triangle, a region with globally significant marine biodiversity [11], but also with a high dependence on marine resources in coastal communities [12]. Studies of the dynamics of institutional change with regard to this region are of major importance as many essential coastal fisheries are depleted and an increasing proportion of the coral reefs are considered at high risk [13].

2. Institutional Entrepreneurship

This article builds on DiMaggio's [14] concept of "institutional entrepreneurship" to describe the strategic agency produced by change-minded and action-oriented actors [15,16] for moving a process of transformation forward [10]. In the context of ecosystem stewardship, they contribute to institutional change by shifting dominant rules, values, and structures of power and resources that support unsustainable approaches to natural resource management [17]. By ecosystem stewardship we mean a strengthened capacity to learn from, respond to, and manage environmental feedback in dynamic ecosystems [18]. The strategies by which institutional entrepreneurs may perform such

changes include sense making and visioning [5,19], facilitating knowledge building [20], forging new alliances [7], building trust [21], mobilizing multiple resources [22], or facilitating conflict resolution and negotiation [16].

Overall, this endeavor requires “engaging and managing the emerging energy of the system”, while also communicating “a sense of the possible in the face of the perils of success or failure” [10] (p. 27). In order to manage the energy of a system (e.g., the orientation of innovation projects and the willingness of the public to engage with new ideas), entrepreneurs must be sensitive to system dynamics and work in concert with these, rather than forcing the system in an opposite direction [10]. However, the context in which institutional entrepreneurs work may not always be open to innovation. Several studies of institutional change emphasize the importance of “opportunity” to implement changes that break the institutional status quo [10,23,24]. Dorado has defined opportunity as “the likelihood that an organizational field will permit actors to identify and introduce novel institutional combinations and facilitate the mobilization of resources required to make it enduring” [24] (p. 113). Others point to the importance of “windows of opportunity”—specific points in time when conditions are conducive to major changes, for example, a change in formal leadership or a societal or environmental crisis [25,26]. The concept of opportunity thus stresses the importance of looking at system dynamics (e.g., relational patterns, social and political trends, interplay of institutional agendas, organizational diversity, degree of institutionalization, and ecological events) to understand when and where institutional change is likely to occur [8,9,27].

To add nuance to the understanding of context, literature on institutional entrepreneurship can draw from complexity perspectives which view leadership as an emergent outcome occurring through interaction between and across individuals, networks and organizations [28–30]. Such perspectives build on the growing recognition that traditional top-down theories of leadership are overly simplistic and incapable of describing the complexity of social change [28]. “Swarm behavior”, a kind of self-organized collective behavior similarly to the behavior of social insects, is further identified as important in triggering innovation and creating a context for ongoing transformations [30]. More particularly, Lichtenstein and colleagues argue that leadership emerges in “interactive spaces between people and ideas” [31] (p. 2). Interactive spaces are understood as spaces where people are brought together around shared interests, values or life circumstances and over time can develop meaningful connections that amplify change [31]. With that said, individual leaders are thought of as important to catalyze change by promoting behaviors and actions that can encourage institutional change within and across organizations [28]. Taking these insights into account points to the importance of looking at the production of “space” wherein institutional entrepreneurship can be enacted. One example is the strong trend toward establishing networks of marine protected areas (MPAs) in the Coral Triangle [8,32,33]. Through protecting a cross-section of habitats and species, and integrating co-management principles, these areas are described as instrumental in changing current marine governance institutions and strengthening community resilience [32]. However, in Indonesia a large proportion of MPAs offer little or no protection due to severe budgetary constraints and lack of knowledge, organizational capacity and political willingness [13,34,35]. Research also highlights the need for greater co-management in Indonesia’s marine national parks, including in the WNP [32].

3. Study Design

In summary, this study draws on the concepts of institutional entrepreneurship and complexity leadership in a marine context to (1) investigate the interplay between the strategies of institutional entrepreneurs and the broader social context in opening up space for a new type of ecosystem stewardship, and (2) examine how entrepreneurial strategies are linked to opportunity, and (3) address ways in which this process affects marine governance locally. This is an important step toward improving our understanding of how networks of individuals and organizations can promote sustainable development in complex social-ecological systems. The above framework has guided the structure of Table 1 and helped produce Figure 2.

The article is based upon a qualitative case study of institutional entrepreneurship in Wakatobi National Park (WNP) in Indonesia. Our aim is to refine the current understanding of institutional entrepreneurship by focusing on the interplay between the strategies of institutional entrepreneurs and the context within which they work to examine how actors at the district level (e.g., individuals within the district government) can purposefully drive processes of change. Our choice of case study reflects the fact that significant changes in marine governance in WNP have occurred since the mid 1990s, most recently associated with the implementation of the Coral Triangle Initiative (henceforth CTI) [36–38]. The Initiative is an agreement between governments in the Coral Triangle to implement ecosystem-based management and a network of MPAs across the region, including in the WNP which is a priority site for implementing the Initiative [8,36]. It was also evident that particular individuals were influential in the process of implementing a new type of marine governance. Accordingly, the case study promised to be a fruitful one for the study of institutional entrepreneurship, whilst the fact that the study site is relatively well documented meant that we could draw upon a range of background data sources [39–44].

3.1. Research Site and Governance Context

Wakatobi National Park (WNP) is Indonesia's third largest marine national park at 13,900 km² and is located in the province of Southeast Sulawesi. It is unique in that the borders of the marine park are entirely congruent with those of the district level government ("kabupaten"), which is the third tier in Indonesia's system of administration (the central government is the first tier and the provincial government ("propinsi") the second). The Wakatobi district was created in 2002 as a reflection of the decentralization process that followed the fall of President Soeharto in May 1998, and aimed to bring political leaders closer to their constituents and more effectively meeting the needs of local stakeholders [45,46]. However, as a consequence of decentralization district governments are now responsible for a large proportion of their budgets and under pressure to achieve greater financial self-sufficiency [46].

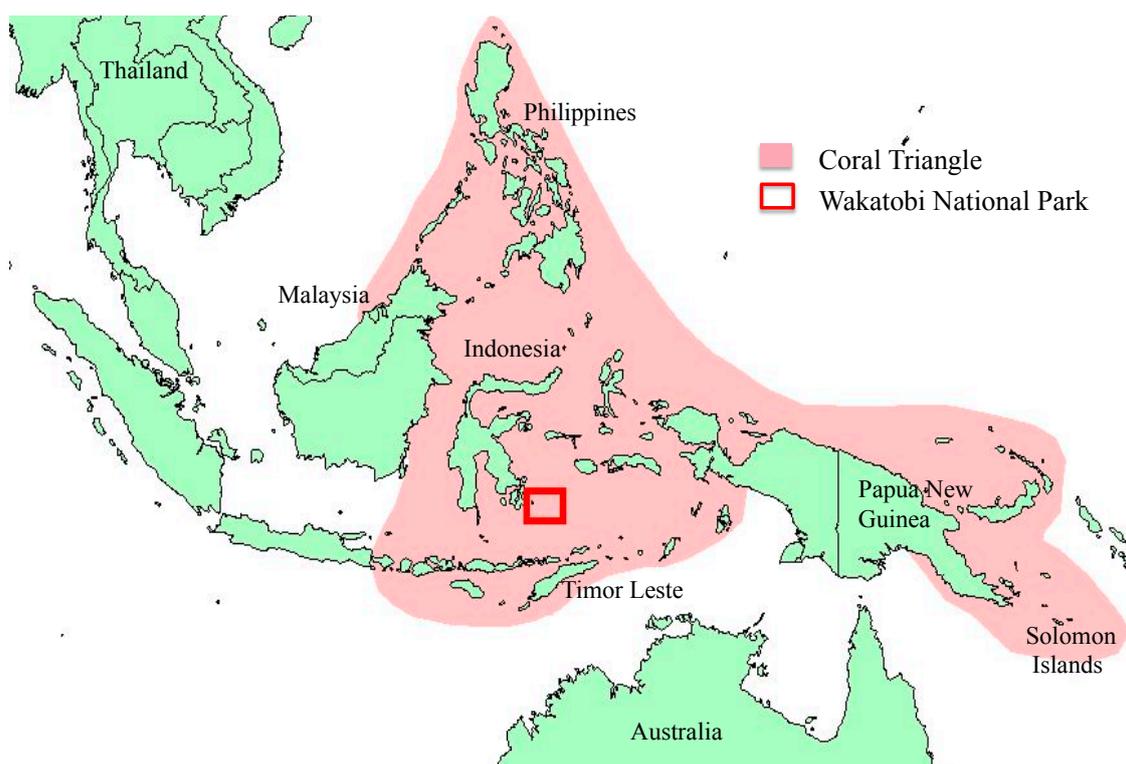
Governance regulations for Indonesia's MPAs are formulated centrally by the Ministry of Forestry in Jakarta (the Ministry of Marine Affairs and Fisheries was created in 2000 but is now seeking to transfer administrative power from the former to itself), but due to regional and local autonomy provincial and district governments are free to interpret and apply these as they see appropriate [34]. The legal requirement on lower tier management agencies to produce detailed management plans for MPAs has often increased the input of external actors (e.g., NGOs) into plan production [34]. Despite

strong impetuses for MPA management in the Coral Triangle, there is little information on how district governments and local level leadership are addressing management and governance challenges associated with the establishment and management of these areas.

WNP was gazetted in 1996 in an attempt to reduce destructive fishing practices and the threat of overfishing [47], and is an IUCN Category II multiple-use protected area [48]. Because of its high marine biodiversity, WNP ranks as one of the most pressing priorities for coral reef conservation in Indonesia and the wider Coral Triangle region [49]. A zonation plan designed to regulate marine resource usage was produced in 1996 but was significantly revised in 2009 in light of more detailed ecological data (e.g., fish spawning and aggregation sites) collected by international NGOs [47]. The park encompasses the four major islands of Wangi-Wangi, Kaledupa, Tomia and Binongko, as well as sixteen smaller uninhabited islands and atolls (Figure 1). It is home to around 100,000 people, of whom 92% are of local Butonese origin and the remaining 8% belong to the Bajau ethnic group [50]. Although the Bajau are heavily dependent on marine resources their low social status has hindered them from actively participating in marine governance. Their participation is thus a critical element of any co-management arrangement involving marine resources [51,52].

The designation of the WNP in 1996 showed little success in mitigating impacts of illegal fishing and destructive fishing, as park management suffered from a lack of funding, equipment, expertise and local awareness. Since 2003, international NGOs and tourism operators have contributed resources and substantive funds to marine governance, and park management may now be described as a strategic partnership involving various alliances between NGOs, the central government, the new district government of Wakatobi, and the tourism operators [50]. Yet, it remains difficult to quantify the “success” of NGO and tourism activities given the lack of long term monitoring data [36].

Figure 1. Location map for Wakatobi National Park.



3.2. Data Collection

The study is based on empirical data generated through qualitative interviewing [53–55] over two periods of fieldwork. The first phase of interviews were conducted between August and November in 2010, and the second between April and May in 2012. In total 50 interviews were carried out (Appendix A). Interviewees included representatives of different institutional levels including (i) international marine policy experts, (ii) researchers with insight into the CTI planning and implementation process or insight into marine governance in the WNP, (iii) central and district government officials, (iv) NGO officers from the WNP, and (v) residents in the WNP. The identification of interviewees was based on two steps. Firstly, we used major policy documents relating to the CTI and the WNP to identify and contact individuals with an impact on marine governance. In the second step we used snowball sampling [56], meaning that these individuals nominated future interviewees from among their acquaintances.

The majority of interviews were semi-structured [57], yet flexible enough to allow follow-up questions and improvisation. Interviews with our key institutional entrepreneur in the WNP (described in Section 3.3) were open-ended with a partially planned structure [55], meaning that we introduced a topic or a problem, and then followed up on the informant's answers to seek new information and angles on the issue at hand. Interviews with informants from Wakatobi were designed to elicit information on local conservation strategies and activities, whereas interviews with informants operating at higher institutional levels were designed to elicit information on their involvement in such activities or on regional conservation initiatives to promote sustainable use of marine resources in the WNP. All interviewees were asked to elaborate on the role of key individuals and their strategies (Appendix B). Interviews were transcribed and digitally recorded when respondents gave their consent. The quotations that appear in the result section are from the transcripts. All interviews were conducted in English. Some interviews with residents from Wakatobi were conducted with the help of a translator from the local community.

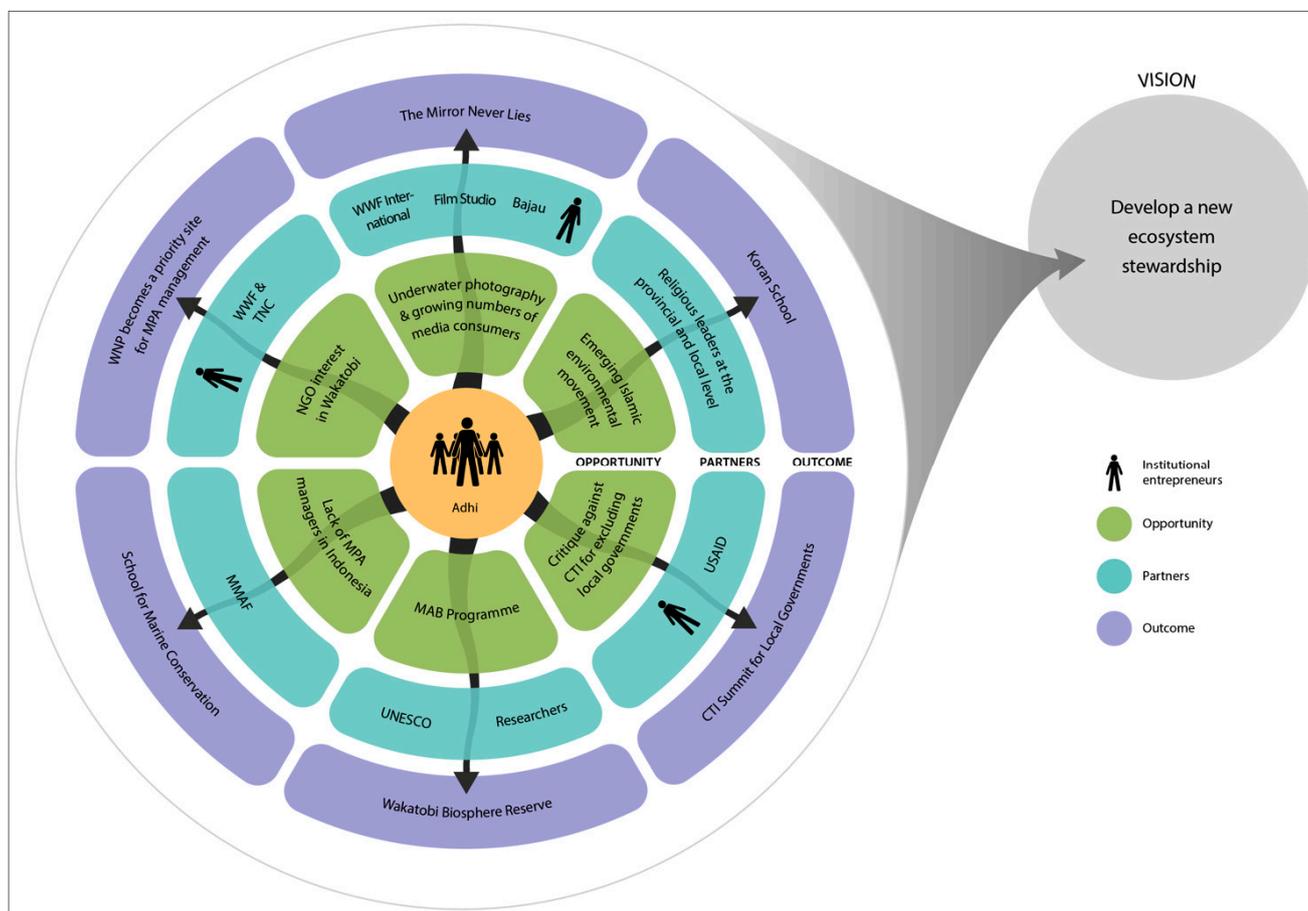
We also observed and participated in a number of meetings and events that we identified as important to institutional entrepreneurship and district level leadership (Appendix C). At one such event—a fish auction—we also conducted a small number of interviews with fishers and fish retailers. These interviews were conducted with a resident individual being employed as translator. To complement research interviews and participant observation we collected a wide range of documents, including agendas and minutes from meetings, copies of presentations, private notes, brochures, mission statements, and press releases and progress reports of the CTI.

3.3. Analysis

By systematically analyzing all interview transcripts we identified a number of individuals and organizations that were actively involved in changing existing governance institutions in the WNP (Figure 2). One male individual was identified as being instrumental in these changes by all other interviewees (the interview sample includes 4 in-depth interviews with this person). To explore our research question, the remainder of this article centers around the key strategies of this individual, whom we identify as an institutional entrepreneur and call “Adhi” (presented in Section 4). By

exploring the strategies and activities of this person we unravel the larger context within which this person operates (e.g., this person's relationship to other key individuals and organizations and his embeddedness within networks).

Figure 2. Interplay between institutional entrepreneurship and context.



We do not claim that this individual alone is engineering the new institutional setting, but our evidence strongly suggests that this person is important in leading this process forward. We are aware that this person's identity cannot be fully disguised, hence all his quotations have been approved by him personally. An important part of the analysis has been to investigate how opportunity, which we identify as an important aspect of context [24], can be captured by using different strategies (Table 1). Therefore, the results section is structured according to six major opportunities derived from the empirical material. These opportunities relate to regional conservation initiatives; a lack of Indonesian MPA managers; international funding; UNESCO's Man and the Biosphere Program, religious environmental activism; and popular media. Figure 2 illustrates the relationship between strategies, context and opportunity. We do not aim to make normative evaluations of the strategies employed. Based on the empirical material, as illustrated in Figure 2, we suggest that examples of institutional entrepreneurship are also found within the two major NGOs working in the WNP—World Wide Fund for Nature (hereafter WWF) and The Nature Conservancy (TNC)—and within the United States Agency for International Development (USAID), all of which support broader marine conservation programs as part of the CTI.

Table 1. Key strategies of the district level leadership to promote a new ecosystem stewardship.

Vision: Develop a new ecosystem stewardship of the WNP by (1) fostering cultural change, (2) institutionalizing MPA management, and (3) transforming Wakatobi into a high-end tourist destination			
Opportunity	Outcome	District level strategies to reach outcome	Anticipated medium/long term impact
NGO interest in the establishment of MPAs in the Coral Triangle	WNP becomes a priority site for MPA management and a key site for the CTI	Informal pact with NGOs to build and market the WNP as a popular marine national park and dive site; Cooperate with NGOs on monitoring/patrolling; Co-production of “The Mirror Never Lies”	Better enforcement of park regulations; Promote marine-based tourism
Need for new MPA managers in Indonesia	The establishment of the “School for Marine Conservation”	Cooperative agreement with MMAF to start the school; Lease land to MMAF; Construction of the school building	Support to park management; Provide information to and put pressure on future local policy makers and politician; Promote cultural change among district government authorities and communities
UNESCO MAB Program	The creation of the “Wakatobi Biosphere Reserve”	Cooperate with researchers who provide ecological and socio-economic data and help preparing the application; Use existing ecological data by NGOs; Submit application to UNESCO	A new platform for park management where different actors can cooperate; Put pressure on the district government to prioritize marine governance; Help institutionalize MPA management; Attract researchers; Improve collaboration with central government; Support future fundraising
Critique against CTI for excluding district governments from the CTI planning and implementation process	The organizing of the “CTI Summit for Local Governments”	Step 1: Pilot a conference on coastal management for Indonesian district leaders; Cooperate with MMAF which provides funds Step 2: Enroll key person in USAID; Cooperate with USAID on a proposal for a Coral Triangle Summit; Key person gets it endorsed and helps with planning and logistics; Issue invitations to the guests	Influence regional policy; Attract future funding for park management; Create strategic alliances with other district governments to support knowledge exchange and learning

Table 1. Cont.

Vision: Develop a new ecosystem stewardship of the WNP by (1) fostering cultural change, (2) institutionalizing MPA management, and (3) transforming Wakatobi into a high-end tourist destination			
Opportunity	Outcome	District level strategies to reach outcome	Anticipated medium/long term impact
Emerging Islamic environmental movement	The creation of a new Koran school	Support and encouragement to local religious leaders to take an interest in marine resource management	Change in mental models hindering sustainable use of marine resources; Strengthen emotional attachment to marine resources among local communities
Underwater photography and increasing number of media consumers in Indonesia	The co-production of the “The Mirror Never Lies”	Sell the idea of a movie to WWF; WWF facilitates fundraising, helps to contact an Indonesian Film Studio and provides funds; Enroll a Bajau village where the movie can be filmed and where actors can be casted; District government acts as executive producer and sponsors the production; Organize an environmental film festival to promote the movie and raise marine issues; Show the movie at various international film festivals	Use as education material in schools; Raise awareness of marine degradation/conservation among local communities; Create a new partnership between the district government and the Bajau; Promote marine-based tourism

As the chief focus of this study is on Adhi (a locally elected politician and community leader), and interplay between the district government and higher institutional and administrative levels, the role of other types of local stakeholders (e.g., village heads) has not been explored. While beyond the scope of this study, we are aware that including other local stakeholders would add nuance and understanding of the complexity inherent in social change. We therefore recommend future research in the WNP to focus on the interplay between the district and sub-district level to investigate the impact of the strategies described in this study.

4. Results: Linking Strategy to Opportunity

Adhi is a locally elected politician who works in the Wakatobi district government and the management of WNP is central to his work. He has lived most of his life in Wakatobi but went to university in Kendari, the provincial capital of Southeast Sulawesi. After graduating from university Adhi went back to Wakatobi to start a local NGO, dealing with the provision of clean drinking water, with a classmate and friend from Wakatobi. The two friends would also run a small travel agency before Adhi decided to start a political career and candidate to the Wakatobi district government. Among colleagues, as well as conservationists and researchers, Adhi is often described as an open minded and entrepreneurial individual, whose voice always stands out and a person who other people naturally gravitate toward.

From Adhi's viewpoint, every attempt at change necessarily starts with a vision, and in a maritime area like Wakatobi the marine environment forms a basis for visioning. He describes his vision to develop a new ecosystem stewardship of the WNP as involving three essential steps. First, to foster a culture where local communities respect and value the marine environment. Second, to institutionalize MPA management in the WNP. Third, to transform the WNP into a high-end tourist destination.

MPA management was introduced in the WNP with the help of WWF and TNC in 2002, but the zonation plan produced with their assistance in 2009 has been perceived with skepticism, with political opponents accusing the district government of neglecting fishers' basic rights (Interview 10, 19). The kind of resistance against MPA management played out in the WNP has led Adhi to conclude that coral reefs and fisheries will not be preserved unless people begin to take greater pride in the islands' coastal and marine ecosystems, and receive economic benefits in return for protecting them. In his view, this means that the endeavor to encourage ecosystem stewardship must become part of a much broader conservation effort as the district government lacks the resources to implement marine conservation. From this, it follows that external actors have to recognize that protecting the islands' ecosystems is of global interest. In the following section we describe how Adhi has interacted with context and opportunity, and as such a broader network of change-oriented individuals and organizations, in seeking to encourage the development of a new ecosystem stewardship (Figure 2). Table 1 summarizes some of Adhi's key strategies.

4.1. A regional Marine Conservation Portfolio

Since the mid 1990s, WWF and TNC have operated marine conservation activities in WNP, whose high biodiversity renders it a priority site for the establishment of an operational MPA network in the Coral Triangle [58]. A national policy of governmental decentralization initiated in 2001 led to the redrawing of district government boundaries and the creation of new districts, including Wakatobi district, along with transferring responsibilities for national park management to the district level [37,45,46]. This period of great change provided an opportunity for conservation-oriented actors such as WWF and TNC to leverage support for new institutional arrangements within district governments (Interview 17). After assuming a high level position in the district government, Adhi was approached by the NGOs to investigate the opportunity to partner with him in preserving the WNP's coral reefs, as noted by an NGO official working in Wakatobi (Interview 17):

“When Adhi assumed his position we made an informal agreement with him that together we would make WNP the third most popular marine national park and tenth most popular dive site in Indonesia”.

To Adhi, improved management of the WNP is not only important to enhance protection of coastal and marine resources, but also to stimulate economic development. In his view, marine-based tourism is a development pathway that can encourage ecosystem stewardship by making linkages between economic development and marine conservation explicit. Indeed, the congruency between the district's administrative borders and those of the marine national park mean that the fate of the latter is inextricably linked in with economic development policies and priorities. Even though Indonesia is a popular destination for eco-tourism, including marine-based tourism, Southeast Sulawesi receives

relatively few tourists and receives little coverage in the travel literature (Interview 28, 45). Partnering with two major NGOs would thus help the district government to not only improve park management but also promote dive tourism, which as Adhi puts it, would be a strong tool to enhance the government's and the public's appreciation of marine biodiversity. This is also exemplified through labelling the area as one of Indonesia's only marine "Kabupaten Konservasi" or "conservation regency". The development of the tourism sector is also supported by investments in infrastructure, especially air transport, and marketing at Tourism Fairs (Interview 14, 40).

As a result of the partnership, WWF/TNC have together invested about US \$4 million in park management between 2002–2012 [37]. This support is critical to the district government bearing in mind the reductions in budget allocations from central government following decentralization [45,46]. Today, the NGOs' conservation activities in WNP have become part of a regional conservation strategy reflecting their involvement in the CTI to which coral reef conservation is a key objective [50]. Linking to this, a key strategy of the NGOs is to find and present "good examples" from which "best practices" can be generated and replicated across sites (Interview 17, 51). In this context, the WNP has been launched as a template for the establishment of MPA networks in the Coral Triangle [37] (p. 5). For the district government, the designation of the WNP as a priority site for the CTI ensures, at least to some extent, that external resources are likely to benefit park management into the future (Interview 9).

4.2. Lack of MPA Managers in Indonesia

A chief strategy of Adhi to encourage a scientific attitude among government authorities with a stake in the marine environment and ultimately the public is his support to the establishment of the "School for Marine Conservation". The school is a collaborative investment between the district government and the Ministry of Marine Affairs and Fisheries (MMAF), and the first group of students was enrolled in 2013. Whereas the district government is responsible for its construction and physical maintenance, MMAF will assume responsibility for managing the school. According to a government official in MMAF, Indonesia will need up to 5000 trained staff to manage its MPAs, which are planned to reach 20 million hectares by 2020 (Interview 21, 31). The school is thus an important national strategy to overcome, at least in part, the lack of trained MPA managers. At the same time, from Adhi's perspective, the rationale behind the school is linked to the electoral cycle, as illustrated in the following quote:

"We cannot entrust politicians to maintain the ecology. We have to encourage academics to come here to continuously remind us about the importance of our ecology. Leadership will change every 5 years, if not reelected for a second mandate period. There are no guarantees that future politicians will prioritize the marine environment. With the help of the new school we are better enabled to look at things from a long-term perspective and never forget about conservation".

In other words, once operationalized the school is believed to become instrumental in not only supporting MPA management, but also in helping to ensure that policy making operates on appropriate time scales and that conservation gets prioritized regardless of political fads. Given the hoped for

trickle-down effect, the school is also seen as a long-term strategy to promote cultural change among not only government institutions but also coastal communities. That is, a way to develop a culture in which coastal and marine resources are better protected and sustainably used. Apart from that, and from a national perspective, the establishment of the school links to a broader national strategy to position Indonesia as a leader in ocean issues. Efforts by President Yudhoyono to initiate the CTI, hosting the World Ocean Conference in 2009, and the World Coral Reef Conference in 2013 are examples of activities aimed at this goal (Interview 6).

4.3. US donor Support to the Coral Triangle Initiative (CTI)

As the fourth most populous country in the world, with a rapidly growing middle class and positive economic growth forecasts, US foreign policy has increasingly expressed an interest in enhancing cooperation with Indonesia within a range of areas, including climate change and environmental management (Interview 2, 6). The US Agency for International Development (USAID) is a major donor of the CTI. To support the Initiative it has set up the “Regional Exchange Program”, a mechanism to bring the six Coral Triangle countries (*i.e.*, Indonesia, the Philippines, Malaysia, Papua New Guinea, the Solomon Islands, and Timor Leste) together on specific thematic priorities to support planning and design processes and facilitate joint learning across all countries (Interview 47, 49, 50). In 2009, USAID conducted a Regional Exchange focusing on coastal management in the Philippines where Adhi and another district official from Wakatobi were two of the participants. The insight that the CTI could be linked up with to mobilize resources for marine governance in the WNP has strongly influenced the district government’s work to develop a strategy portfolio for the marine environment. A government official explains (Interview 10):

“Alone we don’t have enough power, or financial resources, to manage and protect Wakatobi’s marine resources from external threats. The CTI is a political unit that can be linked up with to mobilize such resources. As a pivotal part the CTI more people will pay attention and we need all [the] allies we can get”.

At the workshop some of the participants went scuba diving and that was when an idea about how the district of Wakatobi could attract donor interest started to materialize. To Adhi’s surprise many of the corals were bleached or damaged. The colleague of Adhi, who also participated at the workshop, recalls:

“During the dive Adhi promised himself that the situation would never become as severe [in the Wakatobi] as in the Philippines. The Philippine reefs were depleted and the coral cover was bad. We therefore decided to invite representatives of other local governments to Wakatobi to discuss the situation of coral reefs and come up with a charter on how to preserve them”.

A few months after the scuba dive, and with the support of the MMAF, the district government of Wakatobi invited a large group of Indonesian local government leaders to a conference on coastal management. The success of the initiative led the district government to contact a representative of USAID based in Jakarta, with whom Adhi and his colleague had made contact with during the workshop in the Philippines, to propose a “Coral Triangle Initiative Local Government Summit” for integrating local stakeholders into the CTI. The proposal was strategic considering that the CTI had been critiqued for being top-down and excluding district governments from participating in the CTI

planning process [59,60] (Interview 1, 20). After a series of meetings with USAID, the agenda for the summit was agreed upon and invitations were issued to district government across the Coral Triangle and other strategically important organizations. The four-day long meeting was held in Wakatobi in May 2011, and as a direct outcome of the summit delegates agreed to share information, experience and expertise on coastal management, and advocate policies to achieve the goals of the CTI [60]. Besides agreeing on developing local action plans for integrated coastal development, the delegates also voiced their interest to be represented in the CTI planning process in their respective countries. Meantime, the summit also provided an opportunity for the Wakatobi district government to stress its status as a priority site for global biodiversity conservation.

4.4. The Man and the Biosphere Program

From Adhi's viewpoint, the call for ecosystem stewardship needs to be pushed also from above by organizations that can inspire and put pressure on local authorities. This is why Adhi and his colleagues have worked together with researchers from the "Hoga Marine Research Center", located on one of Wakatobi's islands and co-managed by Essex University and Operation Wallacea which is a British eco-tourism operator, to establish a UNESCO Biosphere Reserve in the WNP. With their practical know-how, language skills and expert knowledge of ecosystems researchers were the main drivers of the application to UNESCO. A researcher explains that they meet Adhi three to four times a year to provide him with the newest data (Interview 11):

"Internally he is quite active. He goes to his staff with the data we provide him with to show them what is happening. With Adhi we don't need to push the argument very hard because he recognizes that Wakatobi's future depends on the marine environment".

According to UNESCO, Biosphere Reserves are sites for experimenting with sustainable development, and to encourage learning Biosphere Reserves can become part of ecosystem and theme-specific networks [61]. As a basic requirement all Biosphere Reserves need to adopt appropriate zonation plans (at hand through the help of NGOs since 2007 in the WNP) and ensure collaborative management mechanisms. After years of work, the WNP was certified a Biosphere Reserve in July 2012 because of its ambition to operationalize ecosystem-based management and become a learning laboratory for researchers, students, NGOs, tourism operators, and the public sector to ensure sustainable use of coastal and marine resources [62]. According to Adhi, the main contribution of the nomination is value creation: "UNESCO's recognition of the National Park will be crucial to future conservation and fundraising activities". He also says that the designation of the Biosphere Reserve can help to institutionalize MPA management and ensure that the marine environment remains prioritized by politicians. Moreover, it is also hoped that this will attract more researchers and improve collaboration with the central government. The central government has expressed an interest in supporting initiatives to develop the province as it ranks towards the bottom of most national socio-economic indicators, with a GDP per capita less than half that of the national average [63]. The process of creating a Biosphere Reserve was initiated after a failed attempt to become an UNESCO World Heritage Site. Adhi explains: "We could not meet UNESCO's designation procedures and complete the application because the data requirements were too extensive".

4.5. Greening Islam

In Wakatobi, the majority of people are Muslim and many families regularly visit the mosque. According to Adhi it is essential to change people's spiritual understanding of nature as the desire to care for the natural world is rooted in our faiths and emotions. He explains: "Many people are not aware that the Koran obliges us to include environmental considerations into all our actions as individual and communities". In fact, there are over 750 verses in the Koran that urge its practitioners to reflect on nature, to study the relationships between living organisms and their environment, and to take seriously human's role as khalifa (guardians) of the earth [64]. For example, the Koran holds water very high and introduces water as the origin and source of all life [65]. Across the Muslim world, there is an emerging Islamic environmental movement that is making itself responsible for mounting activism [66], and Turkey, Iran, Indonesia, and Malaysia are the leaders in this respect. This is why Adhi has supported a local religious initiative to form a new Koran School, which is part of a broader provincial effort. In part, the Koran School aims to capture the symbolism of water and re-interpret some of the Koran's central texts to put greater emphasis on the intimate link between human life and the ocean, as expressed by Adhi:

"A reading of, for example, Moses can help us to understand that the sea is the center of everything and that all life depends upon it, and by using religious symbols we can build protective value for the WNP. People need to take pride in local ecosystem in order to preserve them".

4.6. Media and Underwater Photography

Over the last years, images of coral reefs have played a key role in the district government's communication strategy to improve business opportunities and partnership building (Interview 28, 30, 45). Partly, as a response to the rapidly growing number of media consumers in Indonesia, itself a reflection of its growing middle class, but also as a way of communicating with international tourists. A recent initiative to use photography is the movie "The Mirror Never Lies" (in Indonesian "Reflection of the Sea"), a love story that communicates a conservation message. The movie was filmed in Wakatobi and centers around the Bajau, who are portrayed as living a nomadic fishing-based lifestyle, and has been praised for its underwater scenery:

"Even cosmopolitan urbanites will be hard-pressed not to fall for this exotic gem. Glossily shot in pristine marine locations, every frame is a feast for the eyes. [...] this film will be remembered for the breathtaking underwater cinematography that shows the sea teeming with wonders like a parallel universe" [67].

For the district government the movie is expected to raise awareness about marine degradation and encourage people's involvement in marine biodiversity protection. It is especially planned to become an education material for teachers. In Adhi's eyes "visual images are important to communicate and increase people's appreciation of the sea as most people, except spear fishers, only see the sea from the above". Looking back, he describes that he first realized the potential of film to engage with stakeholders when watching an environmental documentary of Garin Nugroho, one of Indonesia's

most prominent directors and scriptwriters. However, in order to produce a movie the district government needed allies with resources to enable such a project. The government saw an ally in WWF that over the last decade had invested substantial resources in the WNP. They in turn saw the potential of such project to become a powerful communication tool for their regional conservation strategy in the Coral Triangle (Interview 8, 27). Favoring the idea, WWF agreed to the role of co-producer and helped to mobilize an Indonesian film production company (SET Film Production). The daughter of Garin Nugroho later agreed to direct the movie. WWF also played a crucial role in raising funds for the production, for example from the Canadian International Development Agency. The movie is notable in that the film team comprised of 40 staff from Jakarta and the Bajau community respectively, and while the two main characters are performed by nationally awarded actors the remaining actors are local (Interview 8, 40). A young Bajau actress later won the award for Best Talented at the Indonesia Film Festival in 2012. It has also been awarded six international awards and four national awards at various film festivals between 2010–2012 (Interview 8).

As a way of promoting the movie and bring visitors to Wakatobi, an international environmental film festival was arranged with the help of Garin Nugroho in October 2011. The festival was part of the broader “Sail Wakatobi Initiative”, an event organized in cooperation with the central government (e.g., MMAF, Ministry of Sports and Ministry of Health, and Ministry of Culture and Tourism) between May and October 2011. While centering around a yacht race with international participants, “Sail Wakatobi” also included, for example, a three-day long beach cleanup with the Indonesian Youth Movement, cultural festivities, and an underwater photography contest. A high school student from Wakatobi explains: “In preparing for Sail Wakatobi high-school students were trained to become ambassadors for the WNP and teach visitors about the important role of corals, seagrasses and mangroves” (Interview 29). National media coverage of the event also helped to focus attention on Wakatobi among potential consumers beyond the local and to cement the idea of the Wakatobi as a “Kabupaten Konservasi” or “conservation district”, reflecting the congruence between the administrative and park boundaries

5. Discussion

The purpose of this study was to use an empirical case study of the WNP to investigate how institutional entrepreneurs working at the district level can pursue different strategies to purposefully navigate the broader governance context so as to enable the emergence of a new ecosystem stewardship. In particular, we were interested in the interplay between the different strategies that entrepreneurs use and the broader system dynamics that influence the context in which they are working. We have unraveled this dynamic interplay by following a particular institutional entrepreneur and the networks in which this person is embedded in their pursuit of ecosystem stewardship, including how strategies link to opportunity. Although there are examples of institutional entrepreneurship in the WNP we do not suggest that this activity has yet led to an improved stewardship of coastal and marine resources. Nevertheless, the results comprise interesting findings about interplay and its outcomes which we elaborate on in the following six paragraphs. These relate to (1) a trial and error approach; (2) cultural and emotional embeddedness; (3) going to scale; (4) knowledge production; (5) enabling conditions; and (6) media.

Firstly, this study reinforces evidence that institutional entrepreneurs play an important role in capturing and managing opportunity to open up space for experimentation and novel ideas [10]. This seems to be linked to the ability of institutional entrepreneurs to strategically connect to other networks of individuals and organizations in order to improve access to vital resources (e.g., knowledge, reputation, financial capital, or other important assets). As shown in the literature on institutional entrepreneurship, individuals such as Adhi not only use a flexible, trial and error approach but also have a portfolio of various strategies ready to be launched when opportunity opens up [19]. An example of this is the failure to meet the designation procedures for becoming an UNESCO World Heritage Site. Failure meant that existing resources and relationships were combined in a novel way to capture another opportunity, namely, the opportunity to submit proposals for new Biosphere Reserves. However, it is much more than opportunity that needs to be understood in order to navigate the broader context in which ecosystem stewardship may emerge. With opportunity also comes considerable risk, which we will come back to in later paragraphs.

Secondly, we suggest that the emergence of ecosystem stewardship may be reinvigorated by creating links between different social spheres, for example between natural resource management and spirituality/religion, as illustrated by the initiative to open a new Koran school. In many places around the world religion is a central aspect of everyday life influencing human-environment interaction as it shapes how people perceive nature, how they feel about it, and how they treat it [68,69]. Using religious symbols and metaphors to communicate the value of ecosystems and their importance for human well being can therefore strengthen the call for ecosystem stewardship. This is important since the scientific jargon and arguments of conservation-based organizations often have little emotional and logical resonance among local communities [70]. As highlighted by Westley [71] and Garofalo [72], emotion is a neglected aspect of our understanding of organizational life, reflecting the separation between reason and emotion, including the superiority given to the former, in Western philosophy [73]. Yet, sensitivity to context means that the strategies of institutional entrepreneurs must be culturally embedded [10] and address emotional and spiritual aspects of people's lives. Building on AtKisson [74], institutional entrepreneurship also involves providing people with outlets or interactive spaces [31] for expressing strong emotions associated with resource politics or environmental degradation. These are spaces where people are brought together around shared life circumstances and over time can develop meaningful connections that can amplify change [28–30]. In the context of MPA management, the lack of spaces where people can express emotions and solve conflicts associated with resource politics may erode support for MPAs amongst local communities [75]. In WNP such a space would be important considering local fishers' perceptions of inappropriate restrictions on their activity. The new Koran school and the Wakatobi Biosphere Reserve (an important point with a Biosphere Reserve is to increase the participation of local communities and ensure collaborative management mechanisms) could provide new space for sense-making, sharing experiences and forming opinions and where resident communities can co-create knowledge and solutions. The CTI Local Government Summit could also provide a new space for learning, yet at higher institutional level.

Thirdly, in order to scale-up institutional entrepreneurs must formulate their ideas to resonate with other actors' efforts to meet specific goals [76], and add value to their organizations and businesses. The strategy to form the School for Marine Conservation was to offer a way to address the lack of trained people to manage Indonesia's expanding MPA estate and form a long-term, strategic

relationship between the district government and the central government. Considering Wakatobi's remote location and little political significance in a national context, such relationship is of vital importance for the potential to "go to scale" and influence financial flows and political priorities beyond the local. Drawing on Antadze and Westley [77], this shows that institutional entrepreneurs must stimulate "buyers" to purchase innovations and that they can do so by filling unexploited niches in the institutional landscape. In Wakatobi, the need to mobilize funds has shifted the focus of institutional entrepreneurship from "managing out" to community groups and other relevant local stakeholders or "managing in" to peers within the district government toward a process of "managing up" to elites such as NGOs and the CTI [78]. This risks reducing a sense of purpose and inspiration among government officials and the public. It also opens up for powerful discourses and narrow political interests to capture the policy and management process [44]. For example, efforts at scaling up are carried forward by the discourse that MPA management can be replicated across sites [32] and that the WNP constitutes a "good example" of MPA management [37]. This risks creating a "praise culture" where critical analysis is avoided in favor of providing a more favorable impression of park management [79] (pp. 30,31). Yet the capacity of local management authorities and NGOs to sustainably manage the park is unclear [50]. It also risks creating a culture where students at the School for Marine Conservation are passive recipients of knowledge, thereby uncritically stabilizing the discourse.

Fourthly, the argument that the School for Marine Conservation is needed to produce research-based knowledge is also dubious. It is not necessarily more scientific information per se that is needed for ecosystem stewardship to emerge in the WNP (although such information is important to management), but better integration among actors with a stake in governance, including novel ways of communicating ecology. There is already an international research center in one of Wakatobi's islands—the Hoga Marine Research Center, but opportunities to engage with researchers have not always been explored by the institutional entrepreneurs. The research centre is operated by Operation Wallacea (*i.e.*, an ecotourism organization) and the University of Essex which have in common with the district government that they require intact reefs to run their operations and further their interests [80]. The interest in raising the Wakatobi profile internationally is therefore a shared and mutual interest. That this collaborative potential has not been explored could reflect the fact that institutional entrepreneurs, such as Adhi or the ones situated in NGOs, have committed significant resources in certain assumptions and the development of specific institutional arrangements (e.g., existing management plans), and that researchers would not necessarily "fall in line" and support these assumptions [81]. The suggestion that institutional entrepreneurs have vested interests which may forsake experimentation and contestation has not been covered in the literature on institutional entrepreneurship and is certainly worth taking into greater consideration. To mobilize energy for ecosystem stewardship in the WNP, institutional entrepreneurs will have to encourage experimentation with different approaches to park management, and create interactive space where different stakeholders (e.g., community groups, government authorities, NGOs and researchers) can generate communication on fisheries and park management and can create meaningful connections. In particular, there is a need to promote strategies by which the district level leadership can engage more actively with different types of local stakeholders, such as village leaders, community groups and local NGOs.

Fifthly, an understanding of how context, including opportunity, has developed over time is important to distinguish areas where entrepreneurship is likely to emerge [10,27]. Although in-depth contact between the district government and the Hoga Marine Research Centre is only sporadic, its operation in the WNP has been instrumental in bringing about new governance institutions. Operation Wallacea and researchers were not only the main drivers of the Biosphere Reserve application to UNESCO, but also deeply engaged in lobbying for the WNP to be established back in the 1990s [34]. Another enabling factor was the organizational ability of the two NGOs to fill the vacuum created in 2002 by the new decentralization act. Their presence and interest in supporting park management has been critical to the district government's (as well as to other change-oriented individuals' operating outside the district government) ability to pursue various marine conservation strategies. The NGOs' marine expeditions and scientific surveys have formed and over time consolidated a "protective story" [82], emphasizing the unique position of Wakatobi in global conservation efforts. The story could later be re-used and elaborated by other entrepreneurs such as Adhi to promote conservation and tourism more generally. However, because of their investments in WNP, the NGOs can exercise considerable influence over park management. This is problematic considering that many NGOs are skeptical about "the need and purpose of evaluation" as their emphasis is on action, targets and outcomes rather than analysis of process [83] (p. 224). As emphasized in the previous paragraph, it is therefore possible that dominant discourses are steering marine governance in directions which lessen critical engagement and discussion, and that, at least to some extent, actors such as Adhi, while acting on his own initiative, can sometimes be used as pawns to support regional conservation agendas. This suggests that it is more difficult to change structures of power than structures of resources, and that institutional entrepreneurs are involved in a kind of horse-trading (among themselves) where different interests, ideas and preferences are traded to reach common goals.

Finally, making use of the media has significant potential to show alternative futures, new forms of behavior, and influence innovation through agenda-setting and directing public attention [84]. Attempts to use media in this way is a tactic tried by many NGOs seeking to communicate with both the general public, governments, and foundations in order to transform existing institutional arrangements [77]. In Wakatobi, underwater photography has become an important tool for resource mobilization and communicating ecological challenges. "The Mirror Never Lies" illustrates an example of how media has been deployed to sway public opinion and instill a new impetus for ecosystem stewardship among resident communities. This could contribute to attitudinal changes and help opening new lines of communication between the district government and some segments of the Bajau community. This way, artifacts of popular culture, and the events through which these are produced, can play an important role in engaging people in an interactive space. For example, Drath [85] argues that artifacts can help people to construct new realities through enabling people to interact through thought, word, and action or by explaining things to one another, sharing stories, and creating new models and theories (see also [86]). However, media may also reproduce stereotypes undermining ecosystem stewardship. For example, Breulin and Regis [87] show that communities flooded by hurricane Katrina after being evacuated were upset to see themselves becoming a metaphor for poverty, race, and neglect and living in an area with nothing left to salvage in the national media coverage. The use of media to encourage ecosystem stewardship could thus serve to objectify the Bajau, making them an icon of a disappearing lifestyle rather than authentic political actors or a vibrant

community with a unique knowledge about the social-ecological characteristics of the WNP, thus perpetuating the perception of the Bajau as outsiders. Because of such perceptions the Bajau have often become the culprit of marine decline and the prime target of enforcement agencies [88], rather than a possible ally in combating the forces behind this decline [89]. Such images may also “obscure rather than reveal existing structures of domination” [90] (p. 280), see also Kortschak [91]. While acknowledging the potential of media, we argue that media may add complexity to the dynamics of already complex social-ecological systems, possibly leading to unintended consequences for marine governance and social-ecological resilience more generally.

6. Conclusions

We believe that institutional entrepreneurship is a useful framework to examine the strategic and relational character of institutional change. We have shown the complex social context that needs to be addressed in order to set out on a new trajectory of ecosystem stewardship. By matching strategy with opportunity, institutional entrepreneurs can enhance the potential for institutional change to occur. This study has demonstrated that institutional entrepreneurs must attempt to capture and scale down opportunities from higher institutional levels whilst simultaneously scaling up local initiatives and potential. One way of doing so may be to create new space, such as the Biosphere Reserve or the Koran school, for co-creation of solutions to common problems. However, in the WNP it seems that the focus of district level institutional entrepreneurship has often been on “managing up” to elites that can provide critical resources rather than “out” to local stakeholders. We have also shown that interplay between strategy and opportunity may hold back experimentation and public engagement, such as the participation of local communities and researchers, due to vested interests in certain management solutions. This underlines the importance of critically analyzing institutional entrepreneurship, its strategies, and outcomes. It also reinforces the need for further studies to monitor the ecosystem outcomes of institutional entrepreneurship, along with the social or psychological impacts of institutional entrepreneurship on different types of local stakeholders.

Acknowledgments

This research was supported by Mistra through a core grant to the Stockholm Resilience Center, a cross-faculty research center at Stockholm University. We are grateful to Jerker Lokrantz at Azote for the graphic illustration.

Appendix

Appendix A: List of Interviews

- 1 Coral Triangle Initiative Secretariat, Jakarta, Indonesia
- 2 The Nature Conservancy (TNC), US (Skype)
- 3 Wakatobi Regency Government
- 4 WWF, Wakatobi
- 5 Researcher, Wollongong University, Australia
- 6 TNC, Australia
- 7 Researcher, James Cook University, Australia

- 8 WWF, Jakarta
- 9 Regency government, Wakatobi
- 10 Regency government, Wakatobi
- 11 Researcher, Essex University, Wakatobi
- 12 Regency government, Wakatobi
- 13 Regency government, Wakatobi
- 14 Regency government, Wakatobi
- 15 TNC, Bali, Indonesia
- 16 TNC, Jakarta
- 17 WWF Wakatobi
- 18 Tourism operator
- 19 Local NGO, Wakatobi
- 20 Local NGO Jakarta/consultant USAID
- 21 USAID, Jakarta
- 22 Central government Indonesia, Ministry of Marine Affairs and Fisheries, Jakarta
- 23 Central government Indonesia, Ministry of Foreign Affairs, Jakarta
- 24 WWF Indonesia, Jakarta
- 25 Central government Indonesia, Directorate General Marine, Coasts and Small Islands/Researcher, Jakarta.
- 26 WWF, Wakatobi
- 27 WWF, Malayisa (Skype)
- 28 Wakatobi Regency government, Wakatobi
- 29 Highschool student, Wakatobi (ambassador at Sail Wakatobi)
- 30 Tourism operator, Wakatobi
- 31 Central government Indonesia, Department of Marine Affairs and Fisheries/ Coral Triangle Initiative Secretariat, Jakarta
- 32 Central government Indonesia, The Agency of Development Assistance Planning, Jakarta
- 33 Asian Development Bank (ADB), Jakarta
- 34 ADB, Manila, the Philippines
- 35 ADB, Manila
- 36 ADB, Jakarta
- 37 ADB, Jakarta
- 38 Central government the Philippines, Sulu-Celebes Sea Sustainable Fisheries Management, Quezon City, the Philippines
- 39 Conservation International, Quezon City
- 40 Regency government, Wakatobi
- 41 Researcher, Southeast Asian Regional Center for Graduate Study and Research in Agriculture, Los Banos, the Philippines
- 42 WorldFish, Los Banos
- 43 WWF, Quezon City
- 44 Researcher, Marine Science Institute, Quezon City
- 45 Regency government, Wakatobi
- 46 WWF, Quezon City
- 47 US Coral Triangle Initiative Support Partnership, Bangkok, Thailand
- 48 United Nations Development Programme, Bangkok
- 49 USAID, Bangkok

50 US Coral Triangle Initiative Support Partnership, Bangkok

Appendix B: Interview template

Background information

Location

Date

Name

Title

Gender

Nationality

Thematic areas to be covered

-Describe present conservation strategies and concrete activities in the WNP

-Impression of park management

-Management barriers

-Main actors involved in management/governance of the WNP

-Relations between different actors

-Impression of the present leadership

-The role of key individuals (who are they)

-Visions for change

-Key individuals' strategies

-Links between key individuals, organizations and networks

-Major drivers for change in the past and now

-Opportunities for change

-The role of regional conservation initiatives/activities

-Zooming out: The WNP in a broader context

Appendix C: Observed meetings and events

1. Film recording of The Mirror Never Lies, Wakatobi

2. UNESCO Man and the Biosphere Meeting, Wakatobi

3. Planning meeting for the Coral Triangle Initiative Local Government Summit, Jakarta

4. Fish auction, Wanci, Wakatobi, including five interviews with resident individuals working in the market:

a. Retailer

b. Fisher

c. Fisher

d. Bajau family

e. Fisher

5. Diving excursion, Wakatobi

6. Diving excursion, Wakatobi

Conflicts of Interest

The authors declare no conflict of interest.

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