THE CHALLENGES OF THE AGRARIAN TRANSITION IN SOUTHEAST ASIA

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Livelihood Change around Marine Protected Areas in Vietnam: a Case Study of Cu Lao Cham

by

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LIVELIHOOD CHANGE AROUND MARINE PROTECTED AREAS IN VIETNAM: A CASE STUDY OF CU LAO CHAM

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Abstract

This paper focuses on how marine protected areas (MPAs) impact on livelihoods in Vietnam. The paper turns the MPA focus away from the traditional focus upon biodiversity conservation and toward the livelihood implications of MPA regulation. Empirical evidence is used to explore livelihood impacts of MPA intervention through regulation of fishing as well as livelihood replacement. The agrarian transition lens is broadened beyond its traditional land-based focus to consider “aquarian transitions” occurring in the coastal zone. Aquarian transition is used as an analogue of agrarian transition to examine the specific influences of the aquatic context upon livelihoods regulation and change.

MPA-associated livelihood interventions occur against a backdrop of dynamic change taking place in the coastal zones of developing countries that form a dominant influence on local economies. Past experience shows that alternative livelihoods interventions may fail to take into account of how such broader forces might shape people’s livelihood choices in the coastal zone. This study examines how these livelihood dynamics play out at the local level via empirical results from one case study site, and is complemented by ethnographic research on national policy development. The implications of the study are considered in relation to recent MPA and small scale fisheries policy developments in Vietnam, as well as to broader MPA livelihood practice in developing country contexts.

Keywords

Agrarian change, aquarian transitions, small scale fisheries, alternative livelihoods, marine protected area, Vietnam, livelihood change.
Introduction

This paper will focus on how marine protected areas (MPAs) regulate coastal resource impact on livelihood change in Vietnam, through the constraints that they place on livelihoods and through the livelihood initiatives they bring to coastal communities. Most studies of MPAs view them from the perspective of their primary concern, “to conserve the biological diversity and productivity (including ecological life support systems) of the oceans” (Kelleher 1999). However in pursuit of this conservation goal, MPAs can have significant impact on coastal livelihoods through fishing restrictions in core protection zones, as well as the introduction of livelihood alternatives intended to replace fishing as a livelihood strategy. The MPA literature promotes the widespread use of alternative livelihood programs as a means of reducing local dependence on fishing, however few studies of MPAs explore the dynamics of such livelihood impacts through reduction in fishing or attempts at livelihood replacement.

This paper turns the MPA focus away from biodiversity conservation towards livelihood implications of MPA regulation. The themes of livelihoods and regulation around environmental change are integral to examination of agrarian change, and within this paper the agrarian transition lens is broadened beyond its traditional land-based focus to consider “aquarian transitions” occurring in the coastal zone. In this context, aquarian transition is used as an analogue of agrarian transition as described by Fougeres (2008)

...processes of capitalist development in both fishing and aquaculture are analogous but not reducible to those in agriculture, because these two industries are biogeochemically and biophysically based in water rather than in land. This basis in water affects uncertainty and risk...as well as enclosure and state intervention in specific ways, and these nature-based differences...merit the theoretical recognition of distinctly aquarian questions of capitalism and transition (Fougeres 2008, pp. 162-3).

The same processes of change operate in an agrarian context as in an aquatic landscape – processes of regulatory, environmental and livelihood change. These lenses of examination can be used across both agrarian and aquatic contexts to examine how the operation of underlying processes have changed on account of new influences and interventions. The lenses of agrarian analysis, of class and social relations, and their interactions with access to resources, can be applied to the rural coastal landscape of the MPA to shed light on how such natural resource management practices affect the local context.

In this paper, the lenses of regulation and livelihoods are used to examine the livelihood impacts of marine protected area (MPA) interventions. Examination of these factors is critical to evaluation of an MPA’s success as poor fit of regulation with local people’s livelihood needs can make the MPA difficult to enforce, and potentially ineffective in meeting its biodiversity conservation goals. Similarly, livelihood assistance programs that do not fit the local context can result in loss of local benefit from and support for the MPA. This study looks at MPAs as an example of regulatory approaches to the use of coastal resources, in terms of their implications for livelihood change, both through the constraints they put on pre-existing livelihoods like small scale fisheries, and through the livelihood initiatives they bring with them. This paper examines how these livelihood dynamics play out at the local level via examination of empirical results from one case study site.

MPAs: Global Drivers, Local Challenges

MPAs are generally defined by the following CBD (Convention on Biological Diversity) definition (COP 7 (Conference of the Parties), Decision VII/5, 2004):

‘Marine and coastal protected area' means any defined area within or adjacent to the marine environment, together
with its overlying waters and associated flora, fauna and historical and cultural features, which has been reserved by legislation or other effective means, including custom, with the effect that its marine and/or coastal biodiversity enjoys a higher level of protection that its surroundings.

The global expansion of MPA projects and programs has increased over the last decade with increasing commitment to achievement of marine biodiversity conservation targets. These targets are largely set by collaboration between large international conservation non-government organizations (NGOs) such as IUCN, The Nature Conservancy, and WWF in conjunction with representatives of nation state conservation agencies. The 2002 Plan of Implementation of the World Summit on Sustainable Development (WSSD) committed to establishing a representative global network of marine protected areas by 2012 (Wood et al 2008). Goals for the achievement of increased marine biodiversity conservation have been reiterated and expanded upon at global conservation policy forums since, including the Vth World Parks Congress (Durban) in 2003, the CBD COP 7 meeting (Kuala Lumpur) 2004, the IUCN World Conservation Congress (Barcelona) in 2008, and the World Congress of Marine Biodiversity (Valencia) 2008. These international agreements seek agreement on implementation of biodiversity conservation from the global to the national levels, which often occurs through donor commitments between developed and developing countries.

MPAs as Islands in a Sea of Change

When viewed from the broader coastal zone perspective, MPAs constitute another form of regulatory influence operating in an already-complex set of natural resource management systems. They are embedded within an existing matrix of social interactions, livelihood activities and surrounding contexts of environmental change. From this viewpoint, it is easy to see how MPAs might be perceived as “islands of protection surrounded by uncontrolled areas of threat” (Salm et al. 2000) in (Cicin-Sain & Belfiore 2005, p. 848). Traditionally MPAs are seen to be threatened by the effects of factors outside of park boundaries such as overfishing, pollution and habitat destruction (Ehler 2005) rather than viewing such management issues as a partial result of the MPA’s own isolated and internally focused management. When viewed
from a high point on the adjacent coastline, an MPA could appear to be an island of protection surrounded by a sea of unrelated activities, and this lack of connectivity with its surrounding context weakens its effectiveness. The MPA is but one component in the broader coastal mosaic of interconnecting activities and ecosystems, and MPA management needs to connect with this surrounding context appropriately in order to be effective.

In order to increase this connectivity, MPAs should be embedded within an integrated coastal zone management (ICZM) framework that should ideally support the MPA’s management objectives and its regulatory mechanisms (Cicin-Sain & Belfiore 2005). ICZM approaches provide a common management framework for all land and water use activities occurring in the coastal zone. In such situations, it is the role of the ICZM framework to provide the linkages between the MPA and the broader natural resource framework for that area. However an ICZM framework is of little assistance to local people whose sphere of influence does not extend to networks of power, yet whose livelihoods may be impacted by natural resource management decisions. This paper reveals that a gap exists in MPA practice between the management of local livelihoods through MPAs and the reality of the surrounding coastal livelihood context.

**Biodiversity vs. Livelihoods?**

The common assumption that local livelihoods should change to accommodate the MPA, and flex even further with the introduction of alternative or additional livelihood activities is problematic. Firstly it assumes the willingness of local people to give up the extractive fishing activity that they were previously engaged in. Two assumptions underlie this: that substitution of existing extractive livelihood activities with a new income generating opportunity that does not depend on the resources within a protected area will result in reduced reliance on resources from within that area, and further, that poor people will not need to get resources from protected areas if they have increased income (Fisher 2001).

The recurrent issues with alternative income generation activities are that they are often not sufficient to replace the protected area-dependent livelihood activity, they are not viable, not socially appropriate, and often not wanted as a result. Most importantly, they are often not an alternative at all, but an additional income generating activity. Fisher (2001) states that “what is ignored is the possibility that new sources of income will complement rather than replace income obtained from protected areas” (pp. 84-85). Fisher (2001) elaborates that, for alternative forms of income to replace protected area-derived income, they must be attractive in terms of relative value and inputs of time and labour, but if they leave sufficient periods of time or seasons when people can continue to earn income from a protected area, then local people are likely to continue to exploit the resources in the protected area (p. 85).

Livelihood change programs implemented through MPA interventions can also fail to take into consideration how broader regional or global forces might shape people’s livelihood choices in the coastal zone - how they may be aspiring to achieve different quite unrelated goals and use a suite of livelihood opportunities to achieve these goals, and how these goals might be in conflict with the objectives of the MPA. It may fail to take account of whether they have the ability to make a livelihood transfer in the first place, as a range of personal constraints could limit their ability to take such an opportunity even if they were provided with access to training and credit. The promotion of alternative livelihoods often denies a very basic and obvious fact – that fishing people make reasonable and stable livelihoods from fishing, “enough for living” in the words of many of my key informants, and that in the places where they live, there may not be another livelihood option that can provide them with an equally stable and reliable income.

Exploration of these issues touches on a deeper issue at the heart of MPA practice – that MPAs operate in opposition to livelihoods, and
that this issue is largely unaddressed in the MPA literature. It has been recognized for some time that MPAs have the potential to operate in isolation of their surrounding context, and it has been suggested that MPAs should become more regionally networked through more broadly mandated management initiatives such as integrated coastal zone management (Ehler 2005). However this recognition has not been extended to examine how the livelihood implications of MPAs are inadequately considered.

The longevity of terrestrial protected area management is considerable and the case history of livelihood management and mismanagement around land based parks is extensive. As a result potential livelihood impacts of terrestrial protected areas have been extensively debated for some time, and practices adapted with common recognition of the futility of assuming that conservation can be successful through significant livelihood restrictions. The provision of alternative livelihoods to address the impacts of access restrictions caused by protected areas is a legacy of the integrated conservation and development programs (ICDPs) of recent decades. Unfortunately the terrestrial experience with livelihood alternatives in ICDPs has shown limited success (Fisher et al. 2008, p. 9) yet these lessons learned do not seem to have been translated into the MPA realm along with use of the alternative livelihood concept in the aquatic sphere.

Complicating the implementation of marine conservation interventions is the fact that enforcement of boundarised regulation is more difficult in the aquatic environment than on land. Aquatic coastal areas can be open access, or they may be subject to locally agreed norms around resource use that are not recognised by formal legal arrangements. This increased complexity is identified in a recent review of the IUCN protected area categories which states that “more often than not, marine areas are considered to be the commons to which all users have a right to both use and access, and that tenure is rarely applicable in the marine environment;” and “Controlling entry to, and activities in, MPAs is frequently particularly difficult (and often impossible) to regulate or enforce, and boundaries or restrictions over external influences can rarely be applied” (WCPA 2008, p. 69).

Overview of the Paper

This paper commences with a review of the methodology for this research and the broader PhD research it is drawn from. The context of coastal transitions relating to MPAs and small scale fisheries in Vietnam is then discussed with reference to broader influences affecting the coastal zone. The context of coastal livelihoods is presented in relation to one field site, and local responses to the introduction of MPA regulations are explored. Alternative livelihood programs associated with MPAs are discussed in relation to both the field site and the broader context of national policy development. “Postscript - Summer 2010” reveals how MPA management and the aspirations of local people have been shaped in recent years by both development interventions and broader drivers of economic change. The implications of this study are considered in relation to recent MPA and small scale fisheries policy developments in Vietnam, as well as to broader MPA livelihood practice in developing country contexts.

Methodology

This paper captures a fragment of a broader PhD research project entitled “Marine Protected Area (MPA) co-management as driver of livelihood change: experiences from Vietnam”. The research explores how new forms of regulation implemented through MPAs affect local livelihoods of small scale fishing communities, as well as how the new regulatory regimes take effect within the socialist context of Vietnam. Research commenced in mid-2005, with eighteen months’ field work undertaken in Vietnam between January 2006 and December 2007. A final “snapshot” field trip was undertaken in June 2010 to capture a glimpse of the livelihood changes that occurred since December 2007. The case study results presented here are mainly based on fieldwork in mid-2007 and mid-2010.

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This paper presents empirical results from fieldwork undertaken from June to August of 2007 focusing on livelihood change at one MPA site, the Cham Islands or Cu Lao Cham as it is known in Vietnam. Cu Lao Cham consists of a group of eight islands, of which only one is permanently inhabited by a population of 3000 in two main settlements (Figure 1). The islands are located approximately twenty kilometres off the coast adjacent to Hoi An in central Vietnam, and are close to world heritage sites, international and domestic tourism, and large regional centres such as Da Nang. At the same time they are isolated by socio-economic and geographic factors linked to their island status. Between eighty and ninety percent of household heads’ incomes are derived from small scale fishing (Tri 2007).

The MPA was established in late 2005 under the authority of the Provincial People’s Committee of Quang Nam Province, and was the outcome of the Cham Island MPA project that operated under an agreement between the Government of Vietnam and the Government of Denmark from October 2003 to December 2006. Throughout this paper the term “Cham Islands”, “Cu Lao Cham”, “the islands” and “the island” are used interchangeably and generally refer to the island where the population resides.

In July 2007 I joined a study tour of fish sauce producers from the island as they journeyed down the coast of south-central Vietnam, learning about fish sauce production, marketing and distribution along the way. These women were fishermen’s wives who had been assisted to learn fish sauce production through an official MPA alternative livelihood activity, of which this study tour was one component. As a participant in the tour, I was able to discuss the trainees’ perceptions of livelihood change relating to their island and the MPA on an informal basis. I was already known to these women due to previous attendance at their training activities on the island, however the study tour gave them greater opportunity to learn about the focus of my study, and by the end of the tour they were quite comfortable to volunteer information to me that they thought useful and relevant, or simply worthwhile gossip.

After the study tour, I returned to the island with the group to conduct a series of producer interviews, to dig deeper into the livelihood strategies of trainees involved in alternative income generating projects implemented through the MPA. I used snowballing techniques with these interviews, starting with the fish sauce producers from the study tour and branching out to interview their friends and relatives through their introductions. This way, I was able to contact many of the livelihoods trainees who had been involved in other training activities apart from the fish sauce and dried fish groups. On return in 2010, I again sought interviews with the fish sauce and dried fish trainees to find out what was influencing the livelihood activities of their households in the context of change that had occurred on the island since 2007.

In 2007, my experience in MPA field sites and livelihood change programs was complemented by participation in livelihood policy development workshops in Hanoi, where I attended as a participant observer with knowledge of State and NGO-administered MPA programs. My role in these different activities varied from observer to active participant and contributor of policy advice depending on the formality of the context and my relationship with the host organisation. This paper contains empirical evidence from MPA site-specific and policy development activities, as well as secondary background information from MPA project reports and consultants’ reports produced for MPA authorities. Where information is drawn from MPA reports it is cited as such; all other facts are either commonly available information or outcomes from my fieldwork.

**Vietnam’s Coastal Transition**

The study is set within the context of Vietnam, where recent rapid economic development has set the stage for explosive growth in coastal development, tourism, aquaculture and demand for fish products. Changes to coastal industries bring corresponding changes to so-
cial relations and flows of capital to coastal communities. Change is also occurring at the macro scale, where new policy influences accompany global change and generate impacts at the national and regional levels. These factors create an additional layer of outlying context around MPAs in Vietnam that influence the interaction occurring within the MPA management intervention sphere in both positive and negative ways.

The coastal zone of Vietnam is currently experiencing considerable change in the management of natural resources. Rural coastal environments were traditionally considered to be marginal landscapes, the domain of poor coastal fishers and others dependent on livelihoods based on the collection of open access resources. The coastal zone has now transitioned into a high value environment as the result of new industries such as tourism and shrimp farming, in part driven by Vietnam’s significant economic reforms and growth in recent decades. The economic reforms such as the encouragement of privatization and market liberalization associated with the national government’s doi moi policy have resulted in improved rural living conditions as evidenced through basic indicators like brick houses, electricity and televisions (Le 2008). However some authors note that the shift away from production requiring communal activities has resulted in the disappearance of rice agriculture from some areas and the marginalisation of vulnerable groups, particularly around aquaculture (Luttrell 2001). Thus the market economy has brought both positive and negative changes to coastal communities.

Small scale coastal fisheries sit at the centre of this vortex of surrounding change in coastal Vietnam, and have also been affected by globalised changes to fisheries industries over the same period. Formerly isolated fishers are now connected with global commodity networks that move fisheries products from areas of regional supply to global demand. The impact of these global changes is compounded by corresponding increases in fishing efficiency, resulting from the increased effectiveness of fishing gears and techniques, and the spread of highly efficient low-cost fishing technologies into small scale fisheries. Thus the methods of both fish capture and transport to market have improved over the same time period, resulting in unprecedented rapid increases in fishing effort by this fishing sector. The increases in fishing effort and efficiency of the last twenty years are common to many coastal areas in the Asia-Pacific region.

The inshore fishing sector along Vietnam’s coast shows evidence of such increases in fishing effort. Marine fisheries production rose from 800,000 to 1.5 million tons over the period 1990 to 2003 (Ministry of Fisheries Vietnam & The World Bank 2005). Vietnam’s small scale fishing sector has seen considerable increase in the number of boats in recent years, with the number of mechanized boats increasing from 44,000 in 1991 to 77,000 in 2002 (by an average of 4.6% per year), and the average power of vessels has increased by twelve percent per year to reach forty eight horsepower (HP) over the same time period (Ministry of Fisheries Vietnam & The World Bank 2005).

In 2008, Vietnam’s Vice-Minister for Fisheries reported that overexploitation over a total allowable catch (TAC) of 582,000 t has been occurring in coastal waters (depth less than 50m) since 1991 (Thang 2008). According to Thang (2008), the average catch per unit of horsepower (HP) per year has decreased from 1.11 t/HP in 1985 to 0.34 t/HP in 2005\(^1\), and the number of small fishing boats was increasing annually by 2300 per year. This decrease in average catch results in fishing practices that reflect increased fishing effort such as increased number of net hauls per day, increasing number of fishing days, reduced mesh size, fishing in forbidden areas and use of harmful fishing gears or fishing techniques (Thang 2008). In addition, fisheries regulation in Vietnam is plagued by poor enforcement: highly effective fishing gears are used in estuarine environments to the detriment of juvenile species, many fishing gears violate

\(^1\) It is not clear from Thang 2008 whether the figures refer to imperial tons or metric tons (tonnes).

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the mesh size regulations, and destructive fishing techniques using explosives and chemicals still occur (Thang 2008). In the context of Vietnam, these increases have resulted in declaration of the inshore fishery sector as overfished by commentators from within the Government of Viet Nam, as well as external NGOs and research institutes (Ministry of Fisheries Vietnam & The World Bank 2005; Pomeroy et al. 2009; Thuy & Symington 2008).

The increase in fishing effort in Vietnam is a reflection of the intense livelihood demand placed upon these resources by people living in coastal areas. The inshore fishery (often up to five miles from the coast) utilizes a fleet of about 28,000 non-mechanized canoes and boats, and approximately 45,000 smaller mechanized boats with long-tail or one-cylinder diesel engines up to approximately twenty horsepower (Ministry of Fisheries Vietnam & The World Bank 2005). It is estimated that eight million people depend on fisheries as the household primary income source, and an additional twelve million get part of their income or subsistence from fisheries (Ministry of Fisheries Vietnam & The World Bank 2005). Raakjaer et al. (2007) note that estimates of the fisheries-dependent population are probably growing due to migration to coastal areas and with expansion of the fisheries sector, which was estimated in 2005 to be growing by 26,000 entrants per year (Ministry of Fisheries Vietnam & The World Bank 2005).

Coastal fishing is recognized as an easy-to-access source of new or additional income for those seeking such opportunities, such as landless people, wage labourers seeking employment outside of agricultural harvest seasons, or coastal people seeking additional household income through capture fisheries activities. The coastal zone is also an area where property rights are more fluid, and the exclusion of new entrants from a fishing activity is near impossible. People often move in and out of small scale fishing opportunistically or seasonally, depending on the availability of fish, the price of petrol which affects the profitability of fishing operations, or other livelihood opportunities such as wage labour. People who live near the coast might seek to supplement household income through simple, effective and destructive fishing methods like electric fishing or use of small mesh nets that capture undersize or juvenile fish. This places increased pressure on inshore fisheries as inshore areas are most easily accessed using small scale fishing gears.

However not all inshore fishers are small-scale, using smaller gears and lower powered vessels. At the opposite end of the spectrum, a fishing household might have significant investments in fishing equipment in the form of motorized boats and an array of different fishing gears. Coastal fishers can represent a range of socio-economic situations, from full household income dependence on use of small scale fishing gears with labour drawn from within the household only, to larger scale investors in larger vessels and gear types that require employment of external labour sources to operate, and may obtain much larger profits. Thus it is difficult to generalize about small scale fishers in Vietnam or anywhere, a fact that is recognized by Pollnac et al. (2001) through their conclusion that globally, “…fishers may no longer be the poorest of the poor” (Pollnac et al. 2001, p. 543).

In the case of Vietnam, while small scale fishers may not always be the poorest people along the coast, they are generally confined to an income level that is “enough for living”; that is, they are able to pay household expenses, children’s school fees, and the occasional new household items such as a rice cooker, however they do not have sufficient income surplus to
permit them to move out of fishing and into another livelihood activity. The poorest may move into fishing as a way of increasing household income either as a livelihood improvement away from wage labouring or wood collection for example, or as an additional livelihood activity within the household, while those with a longer association with small scale fishing rarely move out of this sector and into another, resulting in an overall net increase in numbers of small scale fishers and fishing effort from this sector.

At this point it is important to differentiate between small scale fishing and aquaculture³. In Vietnam coastal aquaculture is often grouped with the fisheries sector due to geographical proximity of the activities in question and the households that undertake them, as well as their combined management within the same national ministry. However the socio-economic circumstances of households involved in aquaculture are vastly different to those involved in small scale fishing only. Significant aquaculture development has occurred along Vietnam’s coasts in the last twenty years, the most prevalent forms being shrimp culture in ponds, and fish or lobster rearing in cages. While it is true that some households may shift from small scale fishing to aquaculture or engage in both, there is significantly higher potential risk associated with aquaculture that prevents many small scale fishing households from making this livelihood transition.

A high level of capital investment is required to enter the aquaculture industry to pay for feed, seed, security (from poachers) and labour for harvesting, and such capital is often acquired through loans, a situation that low income households will not enter into with confidence due to fears around not being able to meet loan repayments. By comparison, entry into small scale fishing may be as simple as purchasing a set of electric fishing gears and sneaking into a near-shore area under cover of darkness to engage in this illegal but effective method of fishing. Thus there is often a significant difference in the socio-economic capability of households investing in coastal aquaculture and those who undertake only small scale fishing, factors which become important when livelihood alternatives are considered for fishing households. Despite this reality, aquaculture is often suggested to be a viable alternative livelihood option for poverty alleviation, “particularly for poor inshore fishers” (Ministry of Fisheries Vietnam & The World Bank 2005, p. 45).

The Government of Vietnam has clearly identified the need to reduce fishing effort in the near-shore fishing sector, and recognised that alternatives are needed in order to reduce this effort (Ministry of Fisheries Vietnam & The World Bank 2005). Decision No. 10/2006/QD-TTG of January 11, 2006, the Fisheries Master Plan to 2010 proposes a reduction of about 30,000 vessels with engines under forty five horsepower compared to the present fleet of about 64,000 by the year 2010 (Ministry of Fisheries Vietnam & The World Bank 2005). The Master Plan also specifies the switch from inshore to offshore fishing and aquaculture, and service provision or tourist service jobs as possible employment options to reduce inshore fishing effort (Ministry of Fisheries Vietnam 2006). The recently approved guidelines for fisheries co-management (June 2010) refer to “community livelihood improvement” as a component of co-management plans, and discussion of applying fisheries co-management in Vietnam has focussed strongly around the issue of alternative or additional livelihoods for small scale fishers (Lai 2010).

The issue of effort reduction in inshore fishing and creation of new livelihood opportunities is thus firmly on the fisheries policy agenda. However examples of successful alternatives are scarce. Vietnam’s experience to date in the push for offshore fishing is a case in point. Offshore fisheries have been strongly promoted by the Government since 1997 (Ministry of Fisher-

³ Aquaculture is defined as the farming of aquatic organisms. Farming implies intervention in the rearing process to enhance production, as well as individual or corporate ownership of the stock being cultivated (Coordinating Working Party on Fishery Statistics 2010).
ies Vietnam & The World Bank 2005). However vessels financed under the Government’s off-
shore fishing vessel subsidized credit scheme have performed poorly, with only around ten per-
cent meeting their repayment schedules, re-
sulting in repossession and reallocation of
poorly performing vessels (Ministry of Fisheries
Vietnam & The World Bank 2005). In addition,
many of these larger offshore vessels have been
fishing in inshore waters, with the Ministry of
Agriculture and Rural Development citing
10,000 of 14,000 offshore vessels continuing to
exploit seafood in coastal waters (Ministry of
Agriculture and Rural Development 2009).
Thuy and Symington note that there is no evi-
dence that the promotion of offshore programs
has in any way reduced pressures on near-shore
resources or measurably reduced fishing effort
(Thuy & Symington 2008). What was intended
to be an effort reduction measure has instead resulted in increased overexploitation and exac-
erbation of existing resource management prob-
lems.

Case evidence from Vietnam clearly demon-
strates how small fisher families experience dif-
ficulties in finding alternative livelihoods
(Ministry of Fisheries Vietnam & The World
Bank 2005), how very rarely fishing people
think about other livelihoods since they only
have experience in fishing, and that their overall
lack of skills and education limits their ability to
realistically pursue alternative incomes and/or
make these new livelihoods effective (Thuy &
Symington 2008). The need for effort reduction
in the near-shore fishing sector has been clearly
identified as a priority by the Government of
Vietnam, but the need to achieve such reduc-
tions remain unidentified thus far.

The Arrival of MPAs in Vietnam

The impact of the small scale fisheries sector
on fisheries’ sustainability has increased at a
time when competing conservation agendas
have increased in significance. Marine protected
areas (MPAs), driven by commitments to global
marine conservation targets made at national
and international policy levels, are a recent ad-
dition to this changing landscape in the coastal
zone. After several pilot projects in the last de-
cade and the more recent expansion of a national
MPA system, MPAs are now a major policy
driver in Vietnam’s coastal zone.

The establishment of the national system of
MPAs initially commenced in 1999 with fifteen
MPAs identified for inclusion in the national
system (Thu & Bourne 2008). The proposal for
fifteen MPA sites in the national network was
submitted to the national government, and in
2000 the Prime Minister assigned the former
Ministry of Fishery (MOFI) a mission to revise
and complete the master plan and management
regulations for the MPA network to 2020 in co-
operation with former Ministry of Science
Technology and Environment (MOSTE) and
other related agencies (Bourne et al. 2008). In
2003 the government officially provided MOFI
with the power to regulate MPA and inland wa-
ters by issuing Decree 43/2003/ND-CP, and the
enactment of the Fishery Law from July 2004
gave official approval for establishment of the
fifteen MPA sites in the national system (Bourne
et al. 2008). The fifteen MPA sites proposed for
establishment in Vietnam by 2010 are listed in
Table 1.

The Hon Mun Pilot MPA Project (now Nha
Trang Bay MPA) commenced in Khanh Hoa
Province in 2000 and Cu Lao Cham MPA com-
 menced in Quang Nam Province in 2005 were
both established as demonstration MPA pro-
jects under donor funding arrangements (Royal
Danish Embassy & DANIDA 2004). Two subse-
quent MPAs (Phu Quoc MPA in Kien Giang
province in 2007 and Con Co MPA in Quang Tri
province in 2008) were established under the
effort of the provincial governments with tech-
nical support from DANIDA (Anon 2009). All
these MPAs form part of the proposed national
MPA network of Vietnam.

In addition to the government-facilitated
MPAs the Trao Reef marine reserve (TRMR)
was established in 2002 by efforts of Van Hung
Commune People’s Committee and with the
technical and financial supports of MCD Viet-
nam (Anon 2009), a Vietnamese NGO that spe-
cialises in coastal resources conservation.
Table 1. Fifteen MPA Sites Proposed for Establishment by 2010

<table>
<thead>
<tr>
<th>Name of the Protected Area</th>
<th>Province</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tran Island (Đảo Trần)</td>
<td>Quang Ninh</td>
</tr>
<tr>
<td>Co To (Cô Tờ)</td>
<td>Quang Ninh</td>
</tr>
<tr>
<td>Bach Long Vị (Bạch Long Vị)</td>
<td>Hai Phong</td>
</tr>
<tr>
<td>Cat Ba (Cát Ba)</td>
<td>Hai Phong</td>
</tr>
<tr>
<td>Hon Me (Hòn Mế)</td>
<td>Thanh Hoa</td>
</tr>
<tr>
<td>Con Co (Cồn Cô)</td>
<td>Quang Tri</td>
</tr>
<tr>
<td>Son Tra - Hai Van (Sơn Trà - Hải Vân)</td>
<td>Thua Thien Hue - Đa Nang</td>
</tr>
<tr>
<td>Cu Lao Cham (Cù Lao Chàm)</td>
<td>Quang Nam</td>
</tr>
<tr>
<td>Ly Son Island (Đảo Lý Sơn)</td>
<td>Quang Ngai</td>
</tr>
<tr>
<td>Nha Trang Bay (Vịnh Nha Trang)</td>
<td>Khanh Hoa</td>
</tr>
<tr>
<td>Truong Sa (Trường Sa)</td>
<td>Khanh Hoa</td>
</tr>
<tr>
<td>Phu Quy (Phú Quy)</td>
<td>Binh Thuan</td>
</tr>
<tr>
<td>Hon Cau (Hòn Cau)</td>
<td>Binh Thuan</td>
</tr>
<tr>
<td>Con Dao (Cồn Đảo)</td>
<td>Ba Ria – Vung Tau</td>
</tr>
<tr>
<td>Phu Quoc (Phú Quốc)</td>
<td>Kien Giang</td>
</tr>
</tbody>
</table>

Source: Ministry of Fisheries Vietnam 2007

through partnership with local stakeholders. The Trao Reef marine reserve sits outside the national system but holds an important position as an example of localised marine resource management in the debate about MPA practice in Vietnam.

In June 2010 and after 10 years' development, the Government of Vietnam finally approved the Master Plan for MPAs to 2015 and vision to 2020. The Master Plan includes the designation of eleven new marine reserves by 2015 (Thong 2010). Thus the next five years will see an increasing focus on MPA establishment and associated community development impacts, both positive and negative.

The Livelihoods in and around Marine Protected Areas (LMPA) Component commenced in 2005 as part of the Development Cooperation for the Environment (DCE) Programme funded by DANIDA and implemented by the Ministry of Agriculture and Rural Development (MARD) (LMPA 2008). The Development objective of this component is: “valuable habitats and their associated biodiversity in Vietnam’s coastal and marine waters are being protected and restored without compromising the livelihood requirements of poor and vulnerable communities” (LMPA 2008). The LMPA Program has pursued three principal objectives since its inception in 2005, namely:

1. “An MPA network that covers the priority areas of Vietnam’s coastal waters is strengthened and effective management systems are in place.
2. “Vulnerable communities living in and around selected demonstration MPA sites are able to meet their livelihood requirements without having to deplete marine resources or degrade the environment.
3. “Vietnam fulfils its commitment to the international effort to develop MPA networks and contributes experiences of addressing the needs of vulnerable communities” (LMPA 2008, p. 5).

The LMPA Program has been the main driver of proactive livelihood change around MPAs in Vietnam since 2005. Of the six outputs governing the program, one addresses livelihoods as follows: “Improved socio-economic security for inhabitants living in and around selected demonstration MPA sites based on sound natural resources management and more diversified income generation” (LMPA 2008, p. 5). As the program will reach the end of its funding cycle in late 2010/early 2011, it will no longer drive livelihood management during the establishment of the eleven new national system MPAs over the next five years. However the experience gained during this program’s

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duration has shaped current livelihood management practice around MPAs in Vietnam, and forms a benchmark that future livelihood management practice will be referenced against.

In Vietnam, the first MPAs to appear in the last decade have fitted somewhat awkwardly within the surrounding context of existing livelihoods and socio-economic change. MPAs use regulation to limit access to areas of high biodiversity value, and often attempt to offset the livelihood impacts of such spatial restrictions through alternative livelihood programs. In Vietnam, most proposed MPAs are located in relatively isolated areas with high local dependence on fishing-based livelihoods. Fishing restrictions have thus clashed with local livelihood strategies and attempts to address these conflicts have produced mixed results.

Regulating the Marine Environment in Vietnam

The physical environment of MPAs is difficult to regulate as the aquatic environment lends itself readily to open access. The fluidity of the coastal environment, the complexity of coastal habitats, and the richness of the natural resources occurring there make these areas inherently attractive for subsistence or income generating activities, whatever the regulatory regime may be. The developed-world origin of MPAs in the currently popular “national system” form is made evident when the issue of MPA regulation is examined critically and pragmatically. The effectiveness of an MPA in achieving its biodiversity conservation goals is dependent on the effective restriction or prohibition of extractive activities such as fishing. Developed countries typically have larger budgets for MPA operations such as compliance in order to enforce regulations, as well as to fund buy-out of displaced fishing effort around MPAs, than do developing countries. Enforcement of regulations governing aquatic resource use in developing countries is also complicated by the local population’s high dependence on the use of these resources for subsistence and livelihood needs.

Adding further complication to this picture is the fact that existing fisheries regulations are already recognised to be poorly enforced, as acknowledged earlier by Thang (2008), and that MPAs rely heavily on a lot of new regulations to be able to work. It is a common scenario in Vietnam that fisheries management regulations reflect best practice, but that some part of the management system lacks the will to implement them on the ground. Some practitioners assert that there is poor awareness of existing regulations at the grassroots level; that where there is a “good legal decision, no one knows” (key informant from a Vietnamese NGO). Some authors also reported evidence of fishers justifying non-compliance with fisheries regulations as the benefit to be gained is greater than the cost of the fines incurred from doing so (Boonstra & Bach Dang 2010). In a coastal country like Vietnam where such a large number of people derive part of their household income from fisheries resources, implementing MPA-associated regulation is confounded from the outset.

Vietnam also possesses a long tradition, extending back to the collectivised agriculture period from the colonial era, of people appearing to agree to rules from above, while bending regulation to meet local needs. Kerkvliet describes this behaviour as “everyday politics” — “people embracing, adjusting and/or contesting norms and rules regarding authority over, production of, or allocation of, resources” (Kerkvliet 2006, p. 291). Kerkvliet’s use of the term everyday politics relates to the reaction by peasants to collectivisation of agriculture but its prevalence extends beyond this context to be visible in other forms of response to natural resource management regimes. The acceptability

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4 The term aquatic is commonly used in this paper as the fluidity of aquatic biota, processes and open access resources is not just restricted to the marine environment but can also apply to estuarine and freshwater environments. An exception to this wider classification would be enclosed inland water bodies such as lakes and dams that may be physically disconnected from broader scale aquatic processes and are more easily and commonly contained through assignment of private property rights.
of this kind of lip service to regulatory compliance at the local level has implications to how communities may react to new regulations with the introduction of MPAs. This local context of non-compliance with regulations creates yet another layer of complexity to be unravelled in understanding how MPAs interact with livelihoods in Vietnam, to unpack whether local community agreement with MPA conservation principles and regulations truly represents support for their implementation, or otherwise.

**Context of Coastal Livelihoods – Cu Lao Cham**

Cu Lao Cham (CLC) forms a microcosm for study of livelihood change in a small-scale fishing community affected by conservation-associated regulations. The community’s livelihood strategies have changed in recent decades with successive waves of external change, from in-migration of people and technology, to impacts of globalised fish supply chains and globally-driven conservation agendas. Over the last fifty years, the island has changed from being a sparsely populated island port of seventy agriculture-dependent households with few external trade links, to a 500 household settlement with links to global fisheries and tourism industries, and connected to the adjacent mainland city of Hoi An and its world heritage tourism status. Overlying these dynamics is the impact of the MPA declaration on CLC in late 2005, and the gradual influence on livelihoods through regulated fishing restrictions and the proposition of livelihood alternatives. In order to understand how MPAs affect livelihoods of the people of Cu Lao Cham, first I present the context for its location – the history of the community, and the existing livelihoods undertaken there.

**History of Cu Lao Cham**

The islands have been settled in several distinct waves of in-migration since migrants from the north of Vietnam moved south and displaced the islands’ original Cham inhabitants some 400 years ago. According to elder resi-

---

**Figure 1. Cu Lao Cham Archipelago, Quang Nam Province, Vietnam**

*Source: Ashton 2004*
Residents of the island, people lived closer to the mountains, caught fish from streams, and did agriculture and not sea fishing. The first wave of immigrants arrived in 1945 when ten households migrated to the island in sampan boats without engines. According to one elder resident, there were about ninety households on Cu Lao Cham at that time, and fishing was restricted to use of coracle/basket boats and boats without engines close to the island, but that only about ten boats were owned between these households which suggests low participation in fishing.

Small scale fish trade with Hoi An existed prior to the larger scale in-migration of people from the adjacent mainland in the 1960s, but elders recall that “there were a lot of fish but no one bought them”. At this time, the island’s inhabitants were mainly involved with agriculture, with minimal import and export of products. According to some of the original families who can still recall life at this time, the main import to the island was sugar, as people cultivated and harvested vegetables in the forest, and the only export product was wood cut from the forest which was transported and sold in Hoi An.

A report published in 1963 on Cam An village identifies a population of 325 people on the Cham Islands around that time (Donoghue 1963). At the time of this survey, the author notes that nearly one half of the households owned strips of paddy field, and the other half worked as farm labourers for the former. He noted that “lumbering and agriculture are at least, if not more important” than fishing, that “cash was scarce, and people generally ate what they grew in the fields or catch from the sea” (Donoghue 1963, p. 30). Donoghue did not consider fishing to be a significant occupation on the island at the time of the survey, observing that “occasionally, middlemen visit the island to buy fish but that the amount sold is negligible” (ibid).

Migration to the island was stimulated by the desire of mainland people to escape being drafted into fighting in the war, with migrants mainly drawn from the agricultural village of Cam Thanh, and the fishing village of Cam An, both located in the outlying rural areas around Hoi An. The population of CLC had been reasonably stable for at least a century before this in-migration commenced (Donoghue 1963). One village elder recalls that fishing migrants began arriving at Ton Cam village in 1968, and the first settlement land for these incomers was the land on which the port and arrival hall/museum is situated today. He noted that at this time, new boatloads of migrants would arrive at the rate of one every four days. The influx of new arrivals stimulated the expansion of fishing among all households on the island. The formerly agricultural “original inhabitants” saw other islanders making reasonable livelihoods from fishing and made small investments in fishing gear such as basket boats and nets.

The expanded interest in fishing also stimulated interest in the use of new types of fishing gears. The fishing migrants from Cam An village were formerly long-line fishers however their in-migration did not limit the expansion of fishing to long-lining only. People quickly expanded their fishing activities to include manh den nets (lift net with lights) (McEwin 2006) as they could fish at night and avoid more tiring work in the sun, and also continue to fish in windy weather which inhibited long line fishing. Over time, people transferred knowledge of net making from mainland fisher relatives in Danang, and this knowledge then spread from one village to another on the island.

After 1975, many of the temporary migrants returned to the mainland, particularly those people who were traditionally involved in agriculture. Of the fisher-migrants who migrated to CLC as a result of the war, approximately thirty percent returned to the mainland and sixty percent remained on the island. One village elder suggested that people with larger boats returned to the mainland, whereas people with smaller boats remained on the island as the calm waters around the island in winter would permit them to fish all year round. Those who remained have however maintained a strong sense of identity with their mainland origin villages as their “home town”, one example of this.
being that many old people request to be buried back in their home village on the mainland. An additional influence on the island’s connection to the wider region was its military significance. During the 1980’s many people from mainland Vietnam tried to leave the country via escape from Cu Lao Cham. As a result of the island’s proximity to the national maritime border, the island is a site of significance for the Border Guard and travel to the island was heavily controlled, particularly for foreigners.

CLC Livelihoods

Today, the main economic activity on Cu Lao Cham is fishing, with over ninety percent of household heads’ occupation related to fishing (Tri 2007). Fish is the only product exported from the island to the mainland and almost all other household requirements are imported. A large proportion of the fish caught by CLC fishermen is sold to fish dealer boats at sea and directly to the Hoi An market, so the local sale of fish is very small. There are a small number of local residents who act as fish traders or middlemen on the island, and little fish processing occurs on the island apart from a few households involved in fish drying. The most common non-fishing related occupations undertaken by villagers are small shops or trading, construction, wood collecting, livestock raising (typically by women), as well as a small number of professional jobs associated with the local government and schools. Usually these occupations are undertaken in addition and as a complement to fishing.

In 2007 tourism was beginning to have a larger presence on Cu Lao Cham, although tourist activities were mainly restricted to day trips of organised tour groups. According to government sources, in 1999 the island received only 593 tourists, while the figure rose to 10,000 in 2006, sixty percent of whom were foreign tourists (Hai Chau 2007). While the number of visitors has increased, these day visitors had little interaction with the local people or businesses. A small amount of home stay tourism took place in private homes, and some locals had employment generated by the scuba diving industry’s use of Bai Chong beach as a lunch stop on their day’s diving. As this beach is remote from the island’s villages, the majority of dive tourists had no opportunity to interact with the local community, thus their impact on local livelihoods was also minimal. A private five star resort development has been proposed for one of the prettiest beaches on the Island for some time, and local people were hopeful that it may generate new employment in the form of construction and security labour.

Limitations

CLC is a landscape of limitations, which affect all local residents’ lives and livelihoods. The island faces limitations on transport to the mainland and local fishing due to the typhoon season that runs for several months a year and during which time travel between the island and the mainland can be limited for weeks or even months. The supply of household products is in turn limited as almost all food and goods are imported by public boat. Land availability is also limited as the island’s topography is steep and the upland areas are restricted by military and forestry regulations. The island is the site of a base for the Border Guard that is responsible for national security, and formal permission is required to access land above 200m elevation. This restricts access of local people and visitors alike to the coastal fringe, a very small proportion of the total land area as the island of Hon Lao is a steeply rising granite island. Around one third of the island is forestry land with limited harvest use permitted by law, although in practice many local people utilize the forest for subsistence collection activities including non-timber forest products and firewood.

Supply of local government utilities is also limited. In 2007 electricity supply was limited to five hours’ generator operation in the evenings, and water supply was already at its maximum capacity meeting existing household demand and could not accommodate any additional industrial needs. Existing garbage disposal is lim-
Regulation of Cham Islands MPA

The traditional approach to MPA biodiversity conservation is to spatially demarcate and enforce a series of graduated protected zones, typically ranging from lesser protection in the periphery to greatest protection in a core zone. These zones are identified on the basis of biodiversity mapping, and the zones that are implemented under regulation are often a compromise between initial zoning proposals and accommodation of community livelihood needs. In CLC, the draft zoning proposal was developed during the project phase of the MPA from 2003 to 2005. The final zoning plan (Figure 2) was divided into the following categories of core zone, ecological rehabilitation zone, and controlled development zone, comprised of the tourism development zone, community development zone, and reasonable fishing zone (Table 2). According to the MPA Project Completion Report, 270 of the island’s 500 households were involved in some way in discussions about the draft zoning plan and regulations (Management Board of Cham Islands MPA Project 2006). The types of fishing that were most likely to be adversely affected by the zoning plan and regulations were those that were most closely associated with the physical locations also targeted by the core zone, the nearshore coral reefs. As a result, diving fishing and use of some kinds of nets that were positioned on or immediately adjacent to the coral reef were predicted to be the most affected from the outset.

Each zone is regulated according to a range of permitted activities, some of which are prohibited within the entire MPA area, with the most stringent controls evident in the core zone. The prohibited activities are listed in Table 3. The MPA regulations are enforced by the MPA enforcement team based in Tan Hiep commune on the island. In 2006, ten enforcement staff were employed by the MPA Authority to undertake enforcement patrols by speedboat and wooden boat, and also to manage tourist activities and the MPA Visitor Centre (Management Board of Cham Islands MPA Project 2006). The

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ited to collection and disposal at key locations, either adjacent to the road or the sea, at which point it may be buried, burnt or simply dumped. A consultants’ report commissioned for the MPA Authority in 2007 found that the existing garbage disposal system could not sustain any permanent significant increase in garbage production, and as a result any large scale tourism developments would have to consider high tech incineration or transport to the mainland (Viet & Berntsen 2007).

The collection of birds’ nests from caves in several islands of the Cu Lao Cham archipelago is wholly controlled by the Birds Nest Company who employs up to seventy people but none of them from CLC. According to McEwin (2006), all profits from this lucrative enterprise accrue at the Hoi An District level and not to Tan Hiep commune or local residents.

Some hamlets on the island face more limitations than others due to lack of facilities and distance from other villages. Bai Huong hamlet, often noted as the most picturesque of all the villages on CLC, is isolated from the other three hamlets which results in limited access to schooling, supplies, goods sold at other hamlets (including fish at local markets), transport to the mainland and this has flow on effects to business opportunities.

The local people also have poor access to information: there is no internet access, only limited electricity for access to television in the evenings, and the distance from the mainland limits access to newspapers, which are otherwise a staple of information dissemination in Vietnam. It has been recognised by the MPA Authority that education levels of the local people have been decreasing over time due to the limited occupational and educational opportunities available on the island, and distance from the mainland (Management Board of Cham Islands MPA Project 2006). All of these factors limit the livelihood diversification options available to local people, and the likelihood of their compliance with MPA regulations.
**Figure 2. Regulated Zones of Protection of CLC MPA**

![Regulated Zones of Protection of CLC MPA](Image)

*Source: Chu Manh Trinh 2009*

<table>
<thead>
<tr>
<th>MPA Zone</th>
<th>Zone Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Core Zone”</td>
<td>totally conserved, managed and carefully protected, maximum restriction of use to prevent negative impacts on habitats, may be used for scientific research, training and education</td>
</tr>
<tr>
<td>“Ecological Rehabilitation Zone”</td>
<td>managed, protected and well organized activities for recovering ecological habitats, biodiversity and natural marine resources in order to economically benefit communities</td>
</tr>
<tr>
<td>“Controlled Development Zone”:</td>
<td></td>
</tr>
<tr>
<td>“Tourism Development Zone”</td>
<td>tourism activities which are able to generate income for the local people, and controlled by the Management Board of MPA and include: scuba diving, coral reefs viewing by glass bottom boat, surfing, sailing, swimming, research, education, training, community entertainment</td>
</tr>
<tr>
<td>“Community Development Zone”</td>
<td>located on lands where people are living in Bai Lang, Thon Cam, Bai Ong, and Bai Huong villages of Cham islands</td>
</tr>
<tr>
<td>“Reasonable Fishing Zone”</td>
<td>Reserved for organizing reasonable marine resources exploitation, developing relevant activities (fishing, aquaculture and other suitable gears) in order to increase income, improve living standards and alternative income generation for MPA communities. The reasonable fishing zone surrounds the extremely protected zone, the ecological rehabilitation zone, and the controlled development zone</td>
</tr>
</tbody>
</table>

*Source: Management Board of Cham Islands MPA Project 2006*
Table 3. Prohibited activities within the CLC MPA and associated zones

<table>
<thead>
<tr>
<th>Zone</th>
<th>Prohibited Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire CLC MPA</td>
<td>a) Activities disturbing the environment, landscapes; destroying stratum rock, coral reefs, flora and other ecosystems; negatively impact on marine species’ communities, habitats, breeding and growth areas.</td>
</tr>
<tr>
<td></td>
<td>b) Fishing activities by dynamite, chemicals, electricity, poison and other destructive methods.</td>
</tr>
<tr>
<td></td>
<td>c) Hunting of fauna and flora species which are named on the protected list.</td>
</tr>
<tr>
<td></td>
<td>d) Exploiting activities which are named on the banned list including seasonal ban, except for in cases of research purposes permitted by the Government; Exploitation of marine animals which body size smaller than specified sizes, except for allowed catches for aquaculture purposes;</td>
</tr>
<tr>
<td></td>
<td>e) Industrial scale aquaculture;</td>
</tr>
<tr>
<td></td>
<td>f) Any kind of mining;</td>
</tr>
<tr>
<td></td>
<td>g) Activities that cause beach erosion around islands;</td>
</tr>
<tr>
<td></td>
<td>h) Activities that illegally occupy, convert land, or water use;</td>
</tr>
<tr>
<td></td>
<td>i) Activities that introduce non-endemic flora or fauna species that might cause damage to the environment, natural ecosystems, or biodiversity of the MPA;</td>
</tr>
<tr>
<td></td>
<td>k) Activities that pollute the environment including noise, vibration where the intensity is greater than permitted limit.</td>
</tr>
<tr>
<td>“Ecological Rehabilitation Zone”</td>
<td>In addition to all restrictions listed above:</td>
</tr>
<tr>
<td></td>
<td>a) Construction, housing, anchoring in coral reef areas;</td>
</tr>
<tr>
<td></td>
<td>b) Any kinds of exploitation of forestry or aquatic products.</td>
</tr>
<tr>
<td>“Core Zone”</td>
<td>In addition to all restrictions listed above, the following activities are also prohibited:</td>
</tr>
<tr>
<td></td>
<td>- Collecting mineral specimen, coral, wild animals, aquatic fauna and flora, microbiological samples;</td>
</tr>
<tr>
<td></td>
<td>- Any kinds of visiting or excursion, touring, swimming, snorkelling, diving.</td>
</tr>
</tbody>
</table>

Source: Management Board of Cham Islands MPA Project 2006

report also notes that the MPA Authority’s enforcement staff could be assisted by additional staff from the Border Patrol, Police, Commune Police and/or local people of Cham Island community who have had patrol training.

The delineation of the core zones of the MPA zoning plan by use of marker buoys has proved time and time again to be essential for the successful enforcement of these zones and to ensure the community’s compliance. This has been made evident on numerous occasions when the marker buoy system has been damaged by the annual typhoons that affect Cu Lao Cham, and local fishers claim they can no longer identify the area of the core zone or abide by its no take ruling. The marker buoy system has thus existed in various states of repair and disrepair since its inception in 2006, with corresponding impacts on compliance with the no take zones by local fishers.

Local Responses to Regulation

In practice, local people have a more flexible view of what is acceptable use of natural resources than what is specified by the zoning system and regulations. A blind eye is turned by the local community to hand gathering in the
core zones if local people have a decent reason for doing so, such as disability or lack of other employment. Children and teenagers are similarly excused as hand gathering is considered to be a normal part of their island lives. Fit and able fishermen might be restricted to hand gathering from near-shore areas to provide food or income for their families when boat-based fishing is made impossible due to storms. As the island can be subject to extended storm periods during the typhoon season, hand gathering might be the only income generating activity available for an extended period of time. All of these points reflect an overall tolerance to collection of marine resources for local use and benefit, and also reflect a larger issue – the expectation for local benefit to be available to local people. The denial of access to these baseline benefits goes against locals’ expectations of how they may reasonably interact with their environment. It represents another misfit between the expectations of MPA programs and those of local people, which are based on their traditional local use of natural resources.

Enforcement is also affected by these local expectations. The MPA staff responsible for patrolling and enforcing the zoning regulations is faced with negotiating a compromise between the MPA regulations and their personal relationships with the local community. In a relatively closed community such as CLC, success at most endeavours is heavily dependent on personal connections which affect all aspects of life, thus the ability of locally recruited MPA Authority staff to undertake their core functions such as zoning enforcement can be affected by their personal relationships. This issue cannot be avoided by bringing in non-local staff as outsiders posted to the island end up embedded in local relationships through marriage or from the simple tasks of living in a small and isolated community. An additional complication is that often such jobs are given to certain individuals as a result of their personal connections, an act which may lead to the creation of a subordinate enforcement team able to be controlled by its appointing patron. Such control of enforcement networks can also be used to apportion more benefit locally, though under the guise of the MPA structure.

In 2007, the potential benefit of the MPA as a source of tourism revenue was strongly voiced by a range of local authorities. This included discussion of access to the core zone for recreational tourist fishing activities by some despite the clear “no take” status of this zone. This was suggested to be an acceptable use of the core zone as the proponents of the idea believed the resource to be rich in these areas, and by implication able to support this resource use. Some MPA enforcement staff were already exercising their belief that fishing immediately adjacent to the core zone was acceptable by allowing tourist fishing to take place there. The local people saw the potential benefit of this activity as an additional livelihood that the MPA could provide to them. However they were aware of some higher authorities’ desire to develop this new economic activity, and that without personal connections to this network they would most likely be cut out from access to it. Through the declaration of the MPA at Cu Lao Cham, its coral reefs were re-valued by local people and authorities into a different form of benefit; where previously the reefs had only a fisheries value, now they had additional economic value via the potential benefit from tourism. The benefit was only framed in terms of economic value by both local people and authorities, and rarely in terms of biodiversity value, despite environmental education attempts to the contrary.

Local people who do comply with the MPA regulations are constantly frustrated by fishers who travel from other areas to fish in the CLC MPA area, and sometimes within the core zone. CLC has a long history as a regional fishing hub for fishers from adjacent provinces, thus it is important that the MPA regulations are upheld by non-local fishers as much as the locals for them to be effective. Unfortunately there is evidence that many of these non-local fishers regularly ignore the MPA regulations, and sometimes run the risk of being caught undertaking prohibited fishing activities by MPA officers due to the large potential for profit vs. the small

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size of infringement fines, particularly with more extractive fishing methods such as trawling. Local people reported that the potential benefit from trawling (banned from the CLC MPA area) could be as much as ten million VND, whereas the fine for trawling in a prohibited area might be only 300,000 VND\(^5\). Local fishers also claimed that fishers from Nui Thanh and Ly Son, locations on the mainland coast south of Cu Lao Cham, used illegal fishing methods such as explosives behind the islands where they were out of sight of enforcement officers. Some of the gear types used by these non-local fishers were also bigger and more effective than those used by local fishers, leaving local fishers unable to compete against the outsiders in terms of access to the fish resource. Not surprisingly, many locals were strongly supportive of increasing resources to the MPA enforcement team in order to target illegal fishing activities, particularly at night. It would be difficult for the local fishers to happily comply with the MPA regulations when non-local fishers are regularly ignoring them by using more efficient and profitable fishing methods, and reaping the rewards of their non-compliance in clear view of the local community.

**Interventions as Opportunities for Access to Resources**

Against this backdrop of regulation-induced livelihood change, an alternative livelihood program was commenced in 2006 as one of the last components of the project phase of the MPA. A job fair was arranged on the island in June 2006 for local people to consider a range of employment training options from mainland companies (Skov 2006). The livelihood activities presented at the job fair were the result of enquiries made to mainland businesses about the potential for their provision of training and employment opportunities for people from Cu Lao Cham (Skov 2006). A delegation of representatives from the mass organisations and each of the village heads attended a study tour of potential enterprises in Hoi An and Danang in May 2006 and the results of their meetings were used to compile the prospective employer list in attendance at the job fair in June, which included representatives from the handicraft industry, a food processing school from Da Nang, and an English language school. According to Skov, approximately twelve people from each village “volunteered” to attend the job fair and represent their fellow villagers who were either looking for additional or alternative livelihoods, or looking for any job\(^6\). Approximately sixty people attended the job fair, and of all the employment options considered, five were of the most interest to the local people: fish sauce production, dried fish production, broom making, edible mushroom production, and lantern making for the market in Hoi An (Skov 2006). Given the limitations on existing local livelihoods, these livelihood activities were new to the attendees of the job fair. A few households had experience in traditional methods of fish sauce or dried fish production, but these methods were limited in their use of preservatives or spices and were not geared for commercial sale.

A vocational training program was initiated based on the priorities that emerged from the job fair, in order to “satisfy the local community requirements and also to provide a new possible alternative income generation system...in order to reduce high pressure fishing and exploitation of marine resources, especially in the case of compliance with the zoning plan and MPA management regulations” (Management Board of Cham Islands MPA Project 2006, p. 52). This latter point is an important one as there was some debate after this time as to

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\(^5\) When fieldwork was conducted in 2007, 1 USD was worth approximately 16000 VND, thus 300000 VND had a US dollar value of around US $18.75.

\(^6\) It was originally intended that all local people interested in additional/alternative sources of income or unemployed would attend the job fair. However it was decided by the MPA Project and MPA club (local representatives facilitating the MPA Project’s activities at the local level) that this would be too difficult to manage. Instead, they asked village leaders to hold a village meeting to identify 12 suitable volunteers from their village to attend the job fair (Skov 2006).
Table 4. *Livelihood Training Activities Implemented with People of Cu Lao Cham in 2007*

<table>
<thead>
<tr>
<th>Activity</th>
<th>Number of Trainees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterprise initiation</td>
<td>20</td>
</tr>
<tr>
<td>Fish product processing (dried fish)</td>
<td>23</td>
</tr>
<tr>
<td>Fish sauce production</td>
<td>19</td>
</tr>
<tr>
<td>Mushroom cultivation</td>
<td>20</td>
</tr>
<tr>
<td>Broom making</td>
<td>30</td>
</tr>
<tr>
<td>Industrial garment making</td>
<td>16</td>
</tr>
<tr>
<td>Machine embroidering</td>
<td>8</td>
</tr>
<tr>
<td>Lantern making</td>
<td>21</td>
</tr>
</tbody>
</table>

*Source: Management Board of Cham Islands MPA Project 2006*

whether the livelihood program was intended to be provide “alternative” or “additional” livelihoods from the outset.

126 people took part in initial vocational training in the following activities: fish sauce production, dried fish production, broom making, lantern making, embroidery and mushroom cultivation (Management Board of Cham Islands MPA Project 2006). The training events took place in June and July of 2006 and were held at training institutions on the mainland with follow up practical exercises back on Cu Lao Cham for some courses. Of these initial activities, few were to prove successful as each encountered local limitations. The broom making proved uneconomical as the costs of materials transport to and from the mainland negated the small amount of profit per unit to the manufacturer. Lantern making and embroidery also faltered due to transport issues and remoteness from production hubs on the mainland. The high cost of mushroom products precluded their purchase on the local market, thus requiring transport to potential mainland markets which was made difficult by their perishability and irregularity of transport to the mainland. Other livelihood options such as livestock raising were often limited by the land available to potentially interested households. These types of livelihoods are often proposed as alternatives in development projects, but such a shopping list of approaches rarely accommodates local limitations adequately.

Of all the alternative livelihood trials initially implemented, only the fish sauce and dried fish making activities were to have any longevity into 2007. In addition to the logistical reasons given above for other activities’ failure to gain a foothold, there were implementation factors that influenced how people chose the training activities they joined. A few fish sauce or dried fish producers foresaw the potential for their chosen activity to fit with existing household activities or future financial plans. By and large however, many participants did not think critically about what choice of training to undertake, with reports of some trainees’ participating only to get the per diem payments for training on CLC and on the mainland. Some of these trainees would later regret their lack of foresight when they witnessed others achieve moderate success in their respective training activities.

In the summer of 2007, both fish sauce and dried fish production were still in operation, and the fish sauce producers were participating in a review of production techniques to improve the potential output of product. One component of this training was a study tour of fish sauce production in south-central Vietnam, a region known for its unique coastal fishing culture and fish sauce production. I joined with this tour group of fourteen fisherman’s wives as they travelled from Hoi An south to Phan Thiet in Binh Thuan Province, stopping to visit the Nha Trang Bay MPA and fish sauce production facilities in Nha Trang. The tour participants were eager for the opportunity to learn as they had little exposure to the world outside their island home. Most had travelled little outside of Hoi An or Danang, the capital of the neighbouring province, and usually only travelling for family reasons. Their knowledge of the broader world outside of Cu Lao Cham, including of private business, was limited; even the prices of basic items in a supermarket were new and interesting to them, as were their first experiences of riding the shopping centre escalator or hotel elevator.

The study tour provided them with the opportunity to see both small and large scale, traditional and commercial production of fish sauce, to ask questions of manufacturers about

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production, marketing, labelling, and sale. The group contained people with a cross-section of previous business experience as well as access to household capital for investment in future fish sauce production. They were also able to learn about the alternative livelihood experiences of MPA-affected households from Nha Trang Bay MPA. At Tri Nguyen village, they were able to meet with women undertaking new income generating activities such as sport net and shell curtain making, and through these meetings discovered that the activities were funded through loans from the national LMPA Authority. The study tour took place immediately prior to a business planning survey of each CLC woman’s household income, assets, and business plan for fish sauce production, to determine her eligibility for funding assistance for her business’s expansion. The fish sauce producers were under the impression that this funding would be a grant to assist their households’ livelihood transfer from fishing to the new activity, and this was the first news they had that the cost of the new livelihood’s development would be borne by them as a loan.

Some trainees complained that bearing the cost of livelihood change via a loan was unfair as they were being asked to pay twice for the MPA, once through the process of livelihood change (a direct result of the MPAs implementation) and then again through loan repayments associated with new livelihood activities. The project response to their complaints was that the fees were necessary to cover the expenses incurred by the Women’s Union which was to administer the loans. The trainees however had a keen eye for comparing the costs associated with microcredit offers, and recognised that the Farmers Union was making a better offer by guaranteeing loans through the agriculture bank than the one being proposed by the MPA’s livelihood support program. What became evident over the course of the study tour and field work back on the island was just how risk averse these fledgling fish sauce producers were. Consequently, their interest in cooperating with the up scaling of alternative livelihood activities was dependent on this representing minimal financial risk. Any suggestion of taking on loans with non-competitive or high interest rates very quickly cooled enthusiasm about household livelihood change.

The trainees also learned about the tourism values of MPA locations through their visit to Nha Trang Bay MPA visitor centre. This site on Hon Mun Island hosts day visitors who can swim, snorkel, take glass-bottomed boat trips to view the coral reef, or simply relax by the sea. From the ecological tourism area in front of the visitor centre they could also witness the large number of scuba divers who were visiting the area in tour boats from the Nha Trang mainland. Although CLC has the same natural resources as Hon Mun in the form of swimming beaches and coral reef, there is no comparable tourism industry based around these assets. Their visit to this tourist site shifted the trainees’ view of the coral reef and coastal landscape as simply a source of fishery income, to something potentially of higher value – a coastal tourism destination. This was the first time that any of the trainees had visited a coastal tourism destination so it represented a big shift in perception around values of the coastal zone. It also illustrated to them how difficult it was for them to access any benefit from this new value. Through their visit to Tri Nguyen village, the trainees learned that the local people had little access to livelihood benefits from the MPA apart from the glass bottom boat operator, and several local women who had changed jobs to operate coracles for tourists. By and large, the tourists visiting Nha Trang Bay MPA sailed by this village, taking any potential benefits to the local people with them.

The CLC trainees saw the potential value of their island home, but also understood that it was a benefit they could not access until tourism services developed to the point where local people could participate. None was in a position to develop a tourism enterprise such as scuba diving on their own, and the MPA restricted extractive activities that might otherwise interest tourists. In 2007, the tourists to Cu Lao Cham walked around the village, were transported to Bai Chong beach where they ate

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a meal provided by one local caterer, and then returned to the mainland. The locals’ opportunities to interact with the tourists or their money were severely restricted.

Alternative Livelihoods in Action on Cu Lao Cham

Recreational fishing represents a kind of “unofficial” alternative livelihood for the fishermen of CLC as they had the means to do so and the market demand from the existing tourist trade in 2007. The fish sauce trainees from CLC could see the greater potential of recreational fishing for tourists after their visit to Nha Trang Bay MPA, however they lacked official permission or encouragement to undertake such enterprises. Any treaty to this end was rejected on the grounds that it was against the biodiversity conservation principles of the MPA. These principles did not stop demand from both domestic and foreign tourists for recreational fishing, and reports of recreational fishing trips being undertaken both within and adjacent to the core zone abounded during the summer of 2007. Locals also reported recreational-tourist fishers casting their lines into the core zones from positions on the shore, and expressed their frustration with this as they believed access to these zones should be available either for all or none.

Locals also reported high demand for ornamental reef fish from tourists from Danang, who represented a large proportion of the domestic tourists at the time. In response to this demand, one local fisher asked MPA staff the following: “I know (the) regulation. But if Da Nang tourists want to buy 10,000VND/fish, can I catch fish outside (the) restricted area?” This example illustrates several things – how a price of 10,000 VND/fish is sufficient to tempt a fisherman into considering a breach of the MPA regulations, and also demonstrates an attempt to negotiate a way to compromise between a fishing based-livelihood and respecting the core zone. It also shows how the local community’s values associated with the coral reef are clearly themed around livelihood benefit; marine biodiversity conservation clearly does not compete against the potential benefit of selling access to said biodiversity, either via a temporary engagement as a day visitor, or through the more permanent arrangement of taking home Nemo the clown fish in a bag. The local people of the island are also fighting against the tide of absence of a broader environmental ethic when domestic tourists visit CLC and want to take a piece of its marine biodiversity home with them, as either a souvenir or in their stomachs. This has implications for the need for greater marine biodiversity conservation awareness among the general population, not just those communities who host marine protected areas in their backyards.

The potential profits to be made from fishing are much higher than the majority of livelihood opportunities available on the island. In 2007, wood cutters earned around 12,000 VND/day (less than $1 USD), cooking labour paid 50,000 VND/day ($3 USD), and wood carving labour 70,000 VND/day ($4 USD). By comparison, a squid fisher with a 3 layer net could earn around 1,000,000 VND/day ($62 USD). Locals who used to grow rice complained that they no longer did so as they couldn’t afford to pay for labour from the profit after the sale of rice. While this high level of profit from squid fishing is an extreme example, even the wood carving labour wage can be quickly replaced by a handful of ornamental reef fish, and captured in much less time than a day’s wage labour.

Those CLC fishers who previously used fishing methods and gears targeting the core zone reported overall lower profits in their fishing since the core zone was implemented. One household reported that before the MPA regulations, they could make profits of up to 700,000 VND/day\(^7\), and had savings of five ounces of gold. Since the core zone was enforced they claimed they no longer had household savings.

\(^7\) 10,000 VND was worth approx. 62 US cents at the time of fieldwork.

\(^8\) 700,000 VND was valued at about $44 USD at the time of fieldwork.

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Other households reported being able to make savings sufficient to build new houses, but that they just earned enough to pay for everything in life since the core zone was implemented and they were no longer able to fish in this area where “the resource is rich”. The high value of fishing-derived income sets a high standard for alternative livelihood activities to meet in terms of replacing existing household incomes. In a resource-limited landscape like the Cham Islands, there may simply be no replacement for high levels of fishing income. While these high incomes are not shared by all fishers on the island, they do challenge the notion that the poor are the most affected by the designation of a protected area. While this was not an assumption of the CLC livelihood program, it does have relevance to broader MPA livelihood practice as it influences who is targeted by livelihood programs from the outset.

Dried Fish and Fish Sauce

Of the livelihood activities supported by the MPA, the fish sauce and dried fish training groups were considerably more successful. However a range of experiences was discernable within each training group, and the reasons for this variation in success are worth unpacking as they have resonance beyond the example of this one MPA to other contexts where alternative livelihood interventions are considered. The most successful participants in both groups were risk takers, women who were already experimenting with different livelihoods, and seeking ways to increase their overall household income. Access to credit, often through family members, was another key factor as it enabled them to buy raw fish product at times when product was available. In the case of fish sauce, the raw input ca com (anchovy) had to be purchased from fishers outside of the producing household, and often in large amounts. Thus access to family-derived credit enabled producers to take advantage of raw product availability as well as having the finance to purchase larger quantities. The same scenario applied to dried fish production, as those with access to credit could buy raw fish when sale prices were low. Family connections were also advantageous to those trainees whose family networks extended to the mainland, as these connections could be used for sale or marketing of products from CLC.

One of the most important factors was that successful producers had pre-existing visions of the expansion of their household livelihood strategies based on predetermined goals. At the initial training activities in 2006, these participants chose the livelihood option that they could see fit well with their pre-existing plans for expanding their livelihoods to suit their household’s long-term needs. Despite the current importance of fishing as a livelihood to the island’s people, it was recognised as a limited livelihood option of the future, and thus for their children. The lack of secondary schooling on Cu Lao Cham is a significant limitation to broader employment opportunities for the island’s youth, and some parents try to bridge this limitation by sending their children to the mainland to complete their schooling. However children who boarded with relatives or in rented rooms had a reputation for poor performance away from the supervision of their parents, and the option that guaranteed the greatest chance for their children’s success was to buy land and build a house on the mainland.

Fish sauce production provided a means to increase household income and assist with achievement of this goal, with the added advantage that its production and sale could be transferred to the mainland when the family relocated.

It is important to note that these people did not see this transition to the mainland as one-way, rather they would be likely to maintain livelihood opportunities in both locations, and thus retain involvement in small scale fishing around the island. Their households’ fishing effort would not be reduced through fish sauce production, instead fish sauce would become an additional household livelihood activity while fishing was continued as the staple livelihood. This could increase household income for children’s education and so reduce future depend-
ence on fishing as children would be more likely to find non-fishing related employment if they completed their school education, however it would not result in an immediate reduction in fisheries dependency by the local community. This example also illustrates how the local people’s decision making around livelihood alternatives is influenced by dynamics much greater than the scope of the livelihood assistance program or the scale of the MPA, and that the MPA operates in relative isolation from these dynamics that affect its outcomes.

Examination of the motivations behind the less successful fish sauce and dried fish trainees is equally revealing about how alternative livelihood programs fail to provide adequate support. When a group of dried fish trainees were questioned by their trainer about they believed they had not been more successful, they answered that they could not buy enough fish locally to make products, and they could not obtain fish from neighbouring villages as those people only sold fish to people from their own village. When questioned whether they considered working together to increase their buying power with these neighbouring villages, they answered no, with the underlying reason that working outside of trusted family networks was undesirable. The trainer suggested that the more successful producers should employ the less successful ones as labour, but they declined, largely for the same unspoken reason. The trainees were all acutely aware of the limitations of their local island market, noting that if they all increased their dried fish production then there wouldn’t be enough demand locally for the product, and that local demand was already limited to special days such as ceremony days. The activity of drying the fish was difficult to do in wet weather as they lacked the space inside their houses to dry the fish indoors. The unstable supply and high price of the fish for drying were also raised as contributing factors to the unpopularity of this activity.

The trainees claimed that dried fish was unappealing as a livelihood activity on its own as it didn’t result in enough income for a profit return. Producers who were forced to sell their product to other sellers did so at a loss of a twenty percent cut to the on-seller, thereby reducing their profit even further. Some members of the dried fish training group had made enough profit for saving, however it appears that the level of profit was still not sufficient for them to consider it worthwhile. This is an important finding, as given the relatively high levels of return from fishing activities previously specified, it appears that the dried fish activity was by and large not able to compete against the appeal of existing livelihoods. To improve their profits they wanted to combine dried fish production with fish sauce production so they could take advantage of seasonal availability of different types of fish in both production processes. In August and September the trainees had access to low quality fish that they normally used for pig food, but that they could use in dried fish and fish sauce production. However under the rules of the livelihood support program they could only be supported with training in one livelihood option, thus denying support for what was a logical and locally appropriate livelihood solution. This finding draws attention to the trainees’ clear preference for multiple livelihoods, which also acts as a risk minimisation measure by increasing flexibility around livelihood options. However the MPA project was not able to offer this flexibility due to its own internal programmatic limitations.

Another significant contributor to the apprehension described above was the risk aversion of the local people as a result of limited education and life experience outside of the island. Many island residents have limited exposure to ways of business outside of Cu Lao Cham, and do not feel confident to successfully compete with mainland markets. As a result they are not willing to take loans for the development of new livelihoods such as dried fish. Most of the local people are loan-averse, preferring to do savings by gold if they have money to save, and not to take loans. A microcredit component of the livelihood support program was not well supported in theory in 2007 as the participants were not used to taking loans and

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were scared they would not be able to pay them back. Even the most successful operators seeking to obtain credit and expand their new livelihoods were considering obtaining them outside of the project through the mass associations, as the interest rates on offer by these alternatives were lower. The degree of risk involved was too great for the majority of trainees, and the terms not competitive enough for the risk takers.

These results emphasise the fact that not everyone drawn to an alternative livelihood program is a risk taker or visionary in the planning of their household livelihood expansion. It was well recognised among the trainees that many of the women who chose other livelihood options at the job fair in 2006 did so not because they thought about which activity would most benefit their household, but because they were simply following orders to choose an activity for training in. Apart from five very successful dried fish producers, the rest of the trainees returned to their traditional livelihoods such as pig raising or labour as they were “afraid of the market”, afraid that they would not be able to sell their product. The example of the fish sauce group of eight women working together represented a kind of happy medium of risk and responsibility sharing that these people were willing to accept together. When asked if they wanted to take a loan for their group’s operations, they suggested a figure of 100 million VND but could not answer why they needed this amount, how they would pay it back, or whether they could afford this amount of loan according to their group’s estimated earnings from fish sauce production. This group of fish sauce producers benefitted from the extra attention paid to them by trainers, which provided them with the added benefit of facilitation of their group dynamics as well as answers to questions such as the one mentioned above about whether they could afford to service a 100 million VND loan. This has implications for the training and facilitation needs of livelihood trainees if they are to stick with their new livelihood activity for longer than an initial training phase.

An alternative livelihood program such as this one does not select the most ambitious or forward-thinking households from the outset. Instead it selects households most likely to be affected by MPA-associated fishing restrictions. Thus an alternative livelihood program will contain a range of entrants, some who wish to save money for future projects and need new livelihood opportunities to do so, and the majority who do not harbor significant business ambitions, and simply wish for a reasonable wage labour income. All may have limited experience in livelihood diversification, and may lack the skills for successfully doing so.

Of the 127 trainees involved in the CLC livelihood program, ninety percent were women – which suggests that the program could never be about livelihood replacement when it did not target those members of the household who are the principal fisher folk, the men. It was intended to create livelihood diversity at the household level that might result in livelihood replacement in the longer term. What is more likely is that broader regional trends such as reduced fish stock availability, or long term shifts in employment patterns will have much greater influence on how core an activity fishing remains to the livelihood strategies of the local people.

In 2007, young adolescent men working as fishing labour were complaining about how they could not compete with older fishermen due to their relative lack of skill, and were considering new livelihoods such as chef or shoe making among the tourism bubble of Hoi An on the adjacent mainland. Ten young men had already left Bai Huong village that year to take up

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9 Although it is sometimes the case that women go fishing with their husbands, this is not a desirable situation on the part of most women I spoke with; those that did ‘go to sea’ stated they would prefer to earn income another way as fishing was hard, even for the very experienced they still got sick easily and had to work very hard. Some women who had gone fishing with their husbands in the past had been replaced by external labour if the family could afford to hire someone else. Thus an incidence of a woman fishing with her husband could be interpreted as a lack of alternative options to do otherwise.
jobs in tailoring, cooking and fish processing. In a village of only a few hundred people, this represents a significant out-migration of its youth. Despite the relatively high wages these young men could earn from long line fishing at that time, they were recognising this benefit was a temporary one, as fishing was in the long term, a dead end opportunity. The young men I spoke with told me how a qualified chef working in Hoi An could earn four million VND/month after three years, and that opportunities such as this were driving their migration from the island. Where Cu Lao Cham was once an island outpost where people fled to escape the mainland and maintain isolation from war, it is now connected by proximity to much broader socio-economic networks and opportunities for those young enough to avail them. For those without the benefit of youth and who have been residing in the relative isolation of CLC for most of their adult lives, connection to benefit from broader networks remains opportunistic, be it opportunity of livelihood support programs or higher fish prices triggered by increased regional and international demand.

Alternative Livelihood National Policy Development

In mid-2007, a debate was quietly raging within the national policy development circles about the intent and future directions of alternative livelihood interventions within the national MPA program. By this time, there was considerable evidence of the issues-in-practice around livelihood change drawn from experience of the first two MPAs, and debate about how best to learn from these. It was intended that the national LMPA program would draw on the lessons learned from Nha Trang Bay and Cu Lao Cham MPA in its future directions that would influence how it approached “diversification of resource utilisation” and alternative income generation at other MPA sites (Vietnam-Denmark DCE 2005, p. 52). A workshop held in Hanoi in June 2007 aimed to generate discussion of these issues at the national level, and seek agreement on potential solutions among the main players involved. The workshop was attended by many MPA and Department of Fisheries staff from the provinces where MPAs were being established, as well as LMPA staff, and conservation NGO representatives from IUCN and WWF. The workshop captured well the confusion about how to respond to the conflicting demands of biodiversity conservation and livelihood security, and how existing practice acted as a driver of future policy direction.

The idea of the “alternative livelihood” within the MPA context is that a new livelihood will replace the previous one based on marine resource extraction, and thus reduce fishing dependence. In the longer term, it is generally expected that coastal tourism will replace fishing-based livelihoods around MPAs, however this requires significant industry development in terms of training and infrastructure and alternative livelihood “packages” are often considered as a mid-term measure. The assumption that one livelihood can replace another and be a true “alternative” is fraught, particularly in a context where local people have a strong history in adapting additional livelihoods around fishing. Rather, livelihood intervention programs were likely to create additional livelihoods that would not necessarily result in reduced fishing pressure from local residents around an MPA.

The existing experience on alternative livelihoods was summarised by a foreign technical adviser as paraphrased below:

“The alternative livelihoods story has not been successful so far despite the best intentions...

Should try not to repeat the same mistakes in future MPAs...

Handicraft models are not sustainable, no examples of replication of handicraft models...

There are too many barriers of entry to successfully adopt models...

Pro-poor targeting issues, models can’t be adopted by the poorest...

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Credit fund schemes are often not used for their intended purpose – loans are often used to pay off other forms of debt with higher rates...

Banks should not be given lumps of money by projects, but need linkages to producers to loan to them…”

His comments illustrate how most of the significant lessons had been identified from existing practice, but that transferring this learning into adaptation of subsequent practice was the issue of greatest concern at that time.

Cu Lao Cham’s livelihood support program was intended to trial the concept of alternative income generation (Management Board of Cham Islands MPA Project 2006), and alternative income generation was one of four main components of the Hon Mun pilot project (Ehler et al. 2005). However commitment to implementing the concept of “alternative” was becoming difficult, as the existing evidence from practice to this time was suggesting it was not possible. The inherent difficulty of attempting to implement full livelihood replacement was evident in the policy debate at the time, with one LMPA Program manager attempting to deny it was the intention of the LMPA program to implement alternative livelihoods in her statement that “It’s not about alternative income generation as cannot replace fishing…Shouldn’t refer to alternative income generation as a result, should use the terms ‘diversify’ or support’ instead.” Her comment was countered by a WWF employee who noted the lack of logic in this manager’s assertion, as the “no take” requirements of the core protection zones require fishers to stop fishing and change livelihood activities in order to function. “If the core zone stops people fishing and they have to change livelihood as a result, then it is alternative income generation”.

This exchange of views highlights some important realities of livelihood interventions around MPAs – that core zones do restrict fishing, and this restriction creates a livelihood vacuum that needs to be addressed in order for the core zone to be “no take”. However replacement of one livelihood with another is not achievable in the time frame of regulation implementation. Participants in the workshop noted that “Existing livelihoods are better than new ones, as it’s very difficult to change to a new occupation, easier to use an existing one.”

This reality was reflected in the recommendations from this workshop, that assistance should first target improvements to livelihood assets and enhancement of existing livelihoods, before development of alternative or additional income generating activities should be considered in future MPAs. Alternative income generation (AIG) also carried its own sustainability issues, as many of the AIG projects to date had also created increased impacts on the MPA. AIG activities also needed to be sustainable in the longer term. The CLC MPA Director drew attention to this fact that the fish sauce producers were already sourcing ca com (anchovy) product from Hoi An as it was not locally available on the island, and that this could adversely affect the long term viability of this activity, a comment that would prove to be a forewarning of things to come.

This experience highlights how original project objectives can trap future interventions into a cycle of trying to implement the unachievable. What can result is a blame game about who said what and this can lead to reduced accuracy of reporting of on-ground results, as implementing agencies do not want to admit they have been unable to meet the objectives specified in original project outlines. Where the unachievable is included by donors this adds an overlying layer of politics to this already complicated situation, as implementing national agencies may not have the position to question whether a project is realistically achievable from the outset. The desire to avoid loss of face may also be great enough to prevent them from admitting difficulties during the course of a project. Thus flaws that were built into projects during the early developmental phase remain unchallenged, and the reality of that they achieve on the ground is restricted to the knowledge of project staff only. These lessons learned risk being lost not only as projects reach completion
and staff move on to their next donor-funded deployment, but also because of a culture of denial and inability to turn knowledge of the realities of on-ground livelihood experience into policy change. Such a culture of change needs to be supported by both donors and national implementing agencies, and to extend down to authorities at the provincial level.

Postscript: Summer 2010

In 2010 I returned to Cu Lao Cham to visit the fish sauce producers and find out how their livelihoods had changed in the last three years. My journey started in Hanoi, where I met CLC MPA staff and had my first inkling of the degree of change that had occurred in my absence. I travelled south to Da Nang armed with stories of hordes of tourists descending on the islands every weekend during summer. Could it really be true that so much had changed, had the world finally come to Cu Lao Cham? In 2007 MPA staff and practitioners including myself were in agreement that the islands had considerable potential as a tourism destination, and the Vietnamese middle class were already expressing their interest in tourism along the adjacent coast. The development of the coastal road from Da Nang to Hoi An in 2006 had awakened (or relocated) the sleepy fishing villages along this coastline, and the road was soon followed by resorts, casinos, upmarket seafood restaurants, and private villa developments. The beginnings of this coastal strip development were evident in 2007, however it had not yet spread to the adjacent islands and many people associated with the MPA were of the belief that CLC’s limitations like lack of electricity, water, and accommodation would continue to constrain tourism development there for some time.

On arrival at Tan Hiep, I found the tales from Hanoi to be true. The tourism boom had commenced in the summer of 2008 and tourist numbers had continued to increase ever since. Not only did tourists come in the height of summer when boat transport to the islands was made simple by calm seas, but they were also coming during the typhoon season when storms can roll in quickly and render the sea crossing between the islands and the mainland impassable. It appeared that Cu Lao Cham’s natural charm as a sleepy fishing village with palm-fringed beaches had finally found its appeal in the Vietnamese middle class’s tourism aspirations.

Tourism and Local Livelihoods

The tourism boom is now the driving force behind the most obvious change in the local livelihood landscape. No further support was given by the MPA Authority to the fish sauce or dried fish activities after 2007, however several new alternative activities were introduced, including vegetable growing and biogas. Those households who had engaged in vegetable production were however worried about flooding the local market if too many local people joined with this activity, and some did not continue with it for this reason. The most significant change was the development of the home stay program by the joint effort of the CLC MPA Authority and national LMPA program, which was intended to capture greater benefit from the increase in tourist visitation and to address the shortfall in tourist accommodation on the island.

The MPA Authority’s home stay program has been implemented at Bai Lang and Bai Huong villages, and its operation is supported by the Authority by their direction of customers to these home stays. Private home stays have also developed in Bai Lang village, some copying the MPA home stay method, and some developing organically in response to the increase in tourists visiting the island. The Bai Lang home stays benefit from their location near the wharf where tourist boats arrive, with some home stay operators actively recruiting tourists on arrival of the boats at the wharf. The Bai Huong home stays are supported by the MPA Authority which preferentially sends consultants and volunteer teachers seeking accommodation to this village. However Bai Huong still lacks a connection to the tourist trade associated with the western end of the island, and few if
any tourists are currently able to access the village as no tour companies visit there.

In 2007 local people from Bai Huong suggested that construction of a pier would lead to an increase in tourism to their village. Since that time, a pier has been built but has made no difference to tourist visitation to the village due to the lack of connection with organized tours from the mainland. Bai Huong village was also provided with solar power generation facilities in early 2010 and the village now has solar power during the day and the original generator power supply at night. While the arrival of continuous electricity might seem like a significant change and Bai Huong villagers now have television all day and can cook with electricity, it has had no livelihood impact and villagers still depend on getting income from the sea. One villager noted that she could not start a restaurant as not enough tourists come to Bai Huong. In Bai Lang village where the tourists’ boats arrive to CLC, there was no information or signage visible to state that home stay accommodation was available in Bai Huong village. To the incoming visitor, Bai Huong was invisible.

The LMPA Program is supporting several new initiatives to help develop tourism at Bai Huong village in 2010. They have funded the construction of a local office which will act as a point of contact for visitors to the village, as well as a base for the community patrol group. They will fund appropriate signage in Bai Lang and Bai Huong so tourists can see Bai Huong as an additional tourism destination on CLC. They are encouraging fishers to change the use of their boats from fishing to tourism so they can transport tourists between villages. However the villagers I spoke to were not happy with this idea as they say they can get a stable income from fishing whereas tourism is only seasonal income. The LMPA Program is also developing three ecotours in Bai Huong, with the idea that they will have secured the development of accommodation, transport and tourist attractions in this village, and thus the flow of tourists and the necessary mechanisms for keeping them there for long enough to spend money. However they face another obstacle in closing this tourism development loop – the end of LMPA as a donor-funded program in mid-2011. They have less than one year to achieve a

Figure 3. Danang’s coastal transition from coastal villages to luxury villas, June 2010

Source: Author

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considerable workload, less if their contract- 
employed staff move on to new positions before the end of the program which is likely to hap-
pen. The LMPA staff I spoke with were doubt-
ful of their abilities to achieve this work pro-
gramme in the time remaining.

**Changes in Fishing Livelihoods**

When I departed CLC in December 2007 it was at the completion of a very successful year for the fish sauce production trainees. When I returned in June 2010 not one of them was still manufacturing fish sauce, despite all the train-
ing, group facilitation, and even the microcredit program. What happened? Every producer I spoke with in 2010 replied with the same an-
swer: “no fish to do (fish sauce with)”. Some former fish sauce producers lamented that they wished they had made more fish sauce in the past when product was available cheaply as they made good profit from this activity. It ap-
pears that a combination of factors are now at work against fish sauce production - the fish for fish sauce (anchovy) are no longer as readily available, and the price is so high that there is no longer a profit to be made from fish sauce production. Representatives from the Depart-
ment of Fisheries in Hanoi assured me that the lack of fish for fish sauce was a result of natural variation in the abundance of this species, how-
ever some of the fishers on CLC were not so op-
timistic that the fish would return.

Some of the original dried fish trainees were still producing dried fish, and were benefitting from the increased tourism to boost product sales. The increase in tourism to CLC had also encouraged new dried fish producers to emerge, but the increase in the number of pro-
ducers was making it difficult to buy fish on CLC to make fresh product. As a result, some dried fish sellers were re-selling product pur-
chased on the mainland. Others were learning to differentiate their product by expanding their product range to include squid and fish, and focussing on the freshness of their product when selling to tourists. One seller noted that none of the current dried fish producers were procuring their fish product through their own household’s fishing activities. She stated that the local fishers only focussed on the capture of large fish for onward sale, not the smaller fish used for dried fish production.

Other households reported decreases in the availability of fish. One household in Bai Lang village reported that profit from long lining had reduced as there were fewer fish to catch, and that some fishers had changed jobs to drive moto taxis or not work at all due to the extent of this reduced profit. When I asked if it were pos-
sible to change to another fishing gear instead of long lining, the informant said no, that it was not easy to catch fish now regardless of the gear type used. One of the more entrepreneurial fish sauce producers was now buying fish at sea to sell in the markets on CLC to meet the local demand for fish, including fish for drying. This seller noted that in general, there were less fish available for dried fish, and that the fish she had sold in the market that day were only fifty percent of their full size.

The increase in tourism on CLC has resulted in accompanying increased demand for seafood products. On Bai Ong beach where formally a temporary shack served drinks to the occasional tourist, a series of restaurants has been estab-
lished to serve the hundreds of visitors that now visit this beach every day at the height of summer. These restaurants have provided new business opportunities for those operating them, new labour opportunities for local people to work as cooks, waiters, beer carriers, and new markets for fishers to target their products to locally. In Vietnam, beer drinking is com-
monly accompanied by the consumption of grilled shellfish, and it appeared that some of the local diving fishers were benefitting from increased local demand through direct orders for oc nong (shellfish) made by mobile phone from the beachfront seafood restaurants to the fishing households. Such direct linkage between fishers, seafood restaurants and large numbers of locally occurring consumers does raise poten-
tial sustainability issues, depending on the con-
sumers’ demands and the fishers’ own desire to respect the MPA and consume seafood sustain-

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ably. This is largely beyond the control of any one MPA and points to the need for greater public awareness about the need to abide by local conservation efforts.

The need for tourist education about sustainable seafood consumption and protection of local ecosystems is of national significance as domestic tourists to Cu Lao Cham now travel from either end of the country to enjoy the island’s beaches and seafood; no longer is the island just a weekend getaway for a few residents of nearby Danang. Given the rapid emergence and recent expansion of the Vietnamese middle class, the threat their demands for seafood consumption could pose on local fish stock sustainability is real. In 2010 one MPA Authority employee quoted current visitor numbers as high as 35,000 per year. Even with the hundreds of visitors per day that I witnessed during the summer, the potential impact of all those tourists’ eager consumption of local seafood is significant. Tourists to CLC are also now able to stay for longer time periods thus increasing their potential for consumption of local seafood. Where previously tourists only visited for the day and their visit to the Island was documented by the Border Guard, now it is easy for all tourists to stay in one of the many private home stay operations, and both domestic and foreign tourists can move freely between Cu Lao Cham and the mainland without registration with the authorities.

Impacts from non‐locals are not limited to those from tourists. Many local fishers reported increased competition over their local fishing grounds with non‐local fishers from neighbouring provinces. Such competition was evident during field work in 2007 however this issue seems to have escalated in significance since then, particularly around diving fishing. In 2007, local fishers suffered competition interference from non‐local fishers, particularly from the gia cao (trawling fishers) who came from elsewhere and whose fishing method was particularly destructive. The gia cao trawlers were banned from fishing in the MPA area by the end of 2007, and the local people were happy that the MPA could provide them benefit through protection of their fishing livelihoods. In 2010, there is now increasing competition between local and non‐local diving fishers, many of whom travel from one particular fishing town in the south of Quang Nam Province. These outside fishers were among the first in the region to learn the techniques of diving fishing, and the CLC fishers reported that the outsider fishers have to travel to other fishing grounds as their own are exhausted. I was informed by a local fisheries representative that these fishers have a long history of fishing in the CLC area and will travel far from their home port in order to fish in different areas, and that they have to move from one fishing area to another as their method of fishing is very extractive and they “fish out” one site and move on to another.

Local fishers from CLC stated that they are often powerless to challenge the non‐local fishers as they are often outnumbered by them; they reported that in mid‐2010 there could be up to twenty five outsiders’ vessels undertaking illegal diving fishing at one time. Fishing inside the core zone is also being undertaken by these non‐local fishers who dive under the cover of darkness, commencing their fishing outside the core zone and swim into it underwater so as to avoid detection by the MPA Authority’s patrol team. Although there were some management interventions that went part way to addressing this problem, there did not seem to be a lot of hope among the local people about resolving this situation. A community patrol team was established at Bai Huong village in 2009 to inform the MPA Authority patrol team of illegal fishing activities near this village and thus hopefully activate a more rapid response from the patrol team. This was developed in response to a long‐standing call for more MPA enforcement in the vicinity of Bai Huong village, which is located some distance from the MPA’s headquarters adjacent to Ton Cam village at the other end of the island. An MPA Authority office was also under construction in mid‐2010 that would act as a contact point for the community patrol team, home stay enquiries and all other MPA‐related activities, and such re‐
sources are valued by this small and somewhat isolated community. These activities do represent important links between the often distant MPA management and the people of Bai Huong, increasing connectivity between local fishers and enforcement activities, however these activities alone are not enough to discourage the scale of illegal fishing currently being undertaken by non-local fishers. The community patrol team was not empowered to act on behalf of the MPA and thus commanded no authority of its own to deter outside fishers. In a country with an authoritarian management culture and tradition of local resistance to regulation in response to it, creating effective community enforcement around high value aquatic resources such as lobster and shellfish targeted by diving fishers remains problematic if local enforcers are not formally empowered by some form of local authority.

One CLC MPA manager lamented to me about the difficulty of managing a site where improved management through the MPA has improved fishing yields, and resulted in increased visitation from outside fishers who have “heard” that fishing is better in this area. It could also be interpreted that in this situation fishers are travelling from areas of resource depletion to areas of greater resource abundance, that the MPA is forming an island of greater resource availability in a sea of unrestricted fishing effort. It also follows that this situation is not sustainable, as such greater resource abundance cannot last long in the face of high fishing pressure from an abundance of non-local fishers known for the intensity of their fishing activities. Thus the MPA’s status as an effective localized fishery management tool can only be sustained with large inputs of enforcement to keep external influences at bay. Without this, it risks becoming just as overexploited as every area of unregulated inshore fishing along the Vietnam coast.

In summary, the return to Cu Lao Cham shows that the growth of more successful livelihood activities of 2007 has been stifled by issues of local fish supply, that there are now less fish available than in the past, and that the price of fish is higher, reducing the profit margin from fish sauce production to an unacceptably low level. Local fishers are now competing with more non-local fishers who use efficient fishing methods like diving fishing, and who do so within the core zone. Increased competition for inshore fisheries access appears to be impacting more heavily on MPAs like CLC as inshore fishers in Vietnam are forced to compete for a nationally declining resource, a situation which can only lead to greater impacts on MPAs from illegal fishing activities in the future. Until the issues of stock depletion and overfishing in Vietnam’s inshore coastal fishery are addressed at a national level, MPAs will continue to face significant challenges from this largely unregulated fishing sector, despite the best of intentions of local fishers to abide by MPA regulations.

External drivers such as tourism are now the dominant influence on livelihood change on CLC and the livelihood support activities through the MPA are in a race to keep up with them. The Vietnamese middle class is demonstrating an appreciation for natural seaside landscapes en masse and to ignore their potential impact on demand for local seafood would be at the peril of impact upon adjacent MPA sites. While sustainable tourism development was desired by all authorities involved with CLC, not all villages are connected to the benefits from tourism and assistance will continue to be required for this village to be able to develop anything but a completely fishing dependent community adjacent to an MPA. This situation was reflected at Nha Trang Bay MPA by the exclusion of Tri Nguyen village from tourist benefits, and is likely to occur again at new MPA sites where not all of the local community lives adjacent to tourist beaches. In sites where outside investors are permitted to move into expanding coastal tourism industries, local people lacking skills and confidence will be limited in their opportunity to access this emerging livelihood sector. At the present time the local people of Cu Lao Cham are not facing this limitation but this is dependent on continuing government support for local benefits. Livelihood sup-

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port through the MPA is also subject to its own external influences, with the changeover of funding arrangements from donor to national funding, and the loss of corporate knowledge that may occur as a five year program reaches its inevitable completion.

Conclusion

The empirical evidence presented in this paper demonstrates the disconnection between the reality of household livelihoods in fishing communities, and the livelihood solutions proposed through MPA practice. The issues to be addressed extend beyond consideration of which potential additional livelihood activities to implement from a suite of such options, or whether livelihoods should be additional or replacement from the outset. Of greater importance is understanding the long term livelihood dynamics of the household affected by a MPA, and how these factors are going to work with or against an MPA’s designation from the outset. And if not, whether anything much can be done about it at all. The livelihood reality of a coastal community cannot be changed simply by the introduction of MPA regulations, nor does it exist in isolation from broader change forces that are often much stronger than the MPA alone. The MPA really is a drop in the ocean of influence compared to bigger regional drivers of livelihood change such as tourism growth and increased demand for seafood products.

In June 2010, the Government of Vietnam released the MPA Master Plan for Viet Nam, including plans for establishment of eleven new marine reserves by 2015 (Thong 2010). The Ministry for Agriculture and Rural Development which has responsibility for implementation of MPAs in Viet Nam will evaluate the five existing MPAs including CLC as a part of this MPA Master Plan. The MPA Master Plan refers specifically to “...funding to implement mechanisms and policies of changing jobs, creating livelihoods for communities living in and around marine protected areas...”(Government of the Socialist Republic of Viet Nam 2010a), thus the issue of MPA-affected livelihoods will remain firmly on the national agenda in future years. The budget allocation for the MPA Master Plan includes “research for policy of supporting and changing jobs” to be implemented from 2010 to 2013(Government of the Socialist Republic of Viet Nam 2010b) however at least one informant expressed concern about the security of this funding, and noted the implications that a lack of funding could have for the plan’s implementation.

Dressler (2009) describes the process of state and NGO staff, those who “do” projects, rendering livelihood problems as concrete with pre-assigned solutions, what Li (2007) describes as “rendering technical” (Li 2007, p. 286). Current MPA practice appears to attempt this very action on local livelihoods, as local resource dependence is recast into technical response through alternative livelihood programs, which also mask the broader socio-economic issues associated with attempts at livelihood replacement. Li (2007) notes that rendering contentious issues technical is not a secure accomplishment but a project, because “questions that experts exclude, misrecognize or attempt to contain do not go away” (p. 10). This statement also has resonance with livelihood practice around MPAs as the livelihood replacement approach does not erase livelihood dependence on coastal resources, merely contains it to be dealt with by a technical approach for the duration of its parent project. Such approaches risk satisfying only the log frame objectives of donor funded projects, rather than achieving lasting on-ground livelihood change leading to improved biodiversity conservation. Christie and White (2007) note that unrealistic MPA targets can drive a process in a manner that does not allow for thoughtful interventions and may result in implementation failure and eventual donor fatigue, and note the need to pursue large scale MPA efforts “only with care and appropriate timelines in developing countries” (p.198). Their warnings are timely for the case of Vietnam’s MPA program and its treatment of livelihood change around MPA sites in the coming years.
Vietnam is in a good position to capitalise on the lessons learned about livelihood management and MPAs thus far, as the intent to learn from the past is currently supported by both political will and the resources required to do so. To date, MPA practice in Viet Nam has proved that willingness to learn exists between MPAs both in a formal and informal sense, as regional leaders have not wished to be seen to repeat mistakes of their peers at other MPA sites. Thus the story of livelihood development and change at Cù Lao Cham has strong current validity in contributing to what is evaluated and how, in the Vietnam MPA story. However the lessons learned risk being lost due to lack of program overlap between the outgoing donor-funded LMPA livelihood assistance program and the new team that will administer implementation of the MPA National Master Plan. This problem is not an isolated one as it is currently reflected across the fisheries management reform sector due to donor funding changeover between 2010 and 2011. This issue has greater resonance across time as it has the potential to occur in the gap between donor funded programs in other focal areas and places, a gap that should be more systematically bridged so that the lessons learned are not lost in the cracks between donor programs.

A greater honesty about what can be achieved from livelihood change programs accompanying MPA regulation in developing countries is needed. The purpose of this paper is not to diminish the argument for marine biodiversity conservation, rather to emphasise the need for improved practice so that developing countries with high dependency on coastal resource use have a chance of achieving some on-ground success rather than simply creating more parks on paper in order to satisfy donor commitments. While MPA practice has learned from the experience of the last ten years, the issue of livelihood replacement is still relatively absent from the literature. Meanwhile, demands for greater conservation efforts increase as the 2010 targets for international marine biodiversity conservation have not been met globally, and the international NGOs increase their focus on the need for greater marine conservation through no-take MPAs. Attacking the establishment of marine conservation is not the intention or the answer to these problems in MPA practice, however neither is ignorance of the fact that livelihood change around no-take areas needs to be more carefully evaluated, and the underlying assumptions of livelihood replacement challenged.

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