

Title: “Regulatory and Livelihoods Change Around Marine Protected Areas In Vietnam– Agrarian Change Processes In The Coastal Zone”

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Abstract:

The themes of livelihoods and regulation around environmental change are integral to examination of agrarian change, and within this presentation the agrarian transition lens is broadened beyond its traditional land-based focus to consider ‘aquarian transitions’ occurring in the coastal zone. The ‘aquarian transitions’ concept is introduced not in an attempt to reinvent the wheel of agrarian studies, but to show how concepts from agrarian change theory can be applied to aquatic livelihoods and environments. There has traditionally been a disconnect between the understanding and study of coastal livelihoods and inland agricultural livelihoods. It is now clear that inland and coastal areas are interlinked through livelihood opportunities and environmental change processes, and this is now being recognised by scholars traditionally focussed on the agrarian side of the coast (e.g. Eder 2008), as well as those focussed on coastal resource management. A focus on coastal livelihoods and impacts upon these by environmental change processes through new forms of regulation is thus complementary to the re-examination of agrarian change in light of new change processes occurring in rural areas.

This presentation reports findings from 15 months of ethnographic research on livelihood interventions associated with marine protected areas in Vietnam. Focus is given to how MPAs operate as regulatory approaches to coastal resources, in terms of their implications for livelihood change through the constraints that they place on livelihoods, and through the livelihood initiatives they bring to coastal communities. This research has policy implications to the operation of livelihood development programs in the coastal zone and beyond, in areas where development interventions seek to implement replacement of livelihoods dependent on natural resource use by local people.

INTRODUCTION:

The coastal zone of Vietnam is a site of 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 common property 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.

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 study of regulation and livelihoods change are core to the contemporary analysis of agrarian change, and the same lenses of study apply equally to environmental management changes in the coastal zone. In this paper, the focal lenses of regulation and livelihoods are used to examine the livelihoods impacts of marine protected area (MPA) interventions. After several pilot projects in the last decade and the more recent expansion of a national MPA system, MPAs are now a major policy driver in Vietnam's coastal zone. Examination of these factors is critical to evaluation of an MPAs 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, livelihoods assistance programs that do not fit the local context can result in loss of local benefit and support for the MPA.

Marine protected areas (MPAs), driven by commitments to global marine conservation targets made at national and international policy levels, are a recent addition to this landscape of change in the coastal zone. In Vietnam, the first MPAs to appear in the last decade have fit 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.

The empirical evidence presented in this paper is drawn from the Chatsea-funded PhD research project "MPA co-management as driver of livelihoods change: experiences from Vietnam". These findings are the result of ethnographic field work conducted in Vietnam between December 2006 and December 2007, and report the results from one of several case study sites investigated during this time.

Cu Lao Cham (CLC) in central Vietnam forms a microcosm for study of livelihoods change in a small-scale fishing community affected by conservation-associated regulations. The community's livelihoods 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 50 years, the island has changed

from 2003 to 2005. The final zoning plan (Figure 1) 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 1). Each zone is regulated according to a range of permitted activities, some of which are prohibited from the entire MPA area, with the most stringent controls evident in the core zone. These prohibited activities are listed in Table 2.

Table 1: Zones in the Cu Lao Cham MPA Management Structure
(From Trinh, 2006)

MPA Zone	ZONE DESCRIPTION
“Core Zone”	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
“Ecological Rehabilitation Zone”	managed, protected and well organized activities for recovering ecological habitats, biodiversity and natural marine resources in order to economically benefit communities
“Controlled Development Zone”:	
“Tourism Development Zone”	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
“Community Development Zone”	located on lands where people are living in Bai Lang, Thon Cam, Bai Ong, and Bai Huong villages of Cham islands
“Reasonable Fishing Zone”	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

This regulatory context takes place within significant livelihood and geographic limitations. Over 80% of Cu Lao Cham households derive the majority of their income from fishing. 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 complementarily to fishing.

In addition, the Island faces limitations on transport to the mainland and local fishing due to the typhoon season; on supply of household products as almost all food and goods are imported by public boat; of electricity as a generator operates for only 5 hours in the evenings; of water supply which is currently at its

maximum capacity meeting household needs and cannot accommodate industry; and of land as the Island's topography is steep and the upland areas are restricted by military and forestry regulations. These factors limit the livelihood diversification options available to local people, and the likelihood of their compliance with MPA regulations.

**Table 2: Prohibited activities within the CLC MPA and associated zones
(From Trinh, 2006)**

ZONE	PROHIBITED ACTIVITIES
Entire CLC MPA	a) Activities disturbing the environment, landscapes ; destroying substratum rock, coral reefs, flora and other ecosystems ; negatively impact on marine species' communities, habitats, breeding and growth areas. b) Fishing activities by dynamite, chemicals, electricity, poison and other destructive methods. c) Hunting of fauna and flora species which are named on the protected list. 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 ; e) Industrial scale aquaculture; f) Any kind of mining; g) Activities that cause beach erosion around islands; h) Activities that illegally occupy, convert land, or water use; i) Activities that introduce non-endemic flora or fauna species that might cause damage to the environment, natural ecosystems, or biodiversity of the MPA; k) Activities that pollute the environment including noise, vibration where the intensity is greater than permitted limit.
“Ecological Rehabilitation Zone”	In addition to all restrictions listed above: a) Construction, housing, anchoring in coral reef areas; b) Any kinds of exploitation of forestry or aquatic products.
“Core Zone”	In addition to all restrictions listed above, the following activities are also prohibited: - Collecting mineral specimen, coral, wild animals, aquatic fauna and flora, microbiological samples ; - Any kinds of visiting or excursion, touring, swimming, snorkelling, diving.

Local people have a more lenient view of what is acceptable use around the zoning system. Local people seen hand gathering in the core zones are excused

from doing so if they have a decent reason such as disability or lack of other employment. Children and teenagers are similarly excused by the community as such 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 for their families when boat-based fishing is made impossible due to storms. 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. The denial of access to these ‘baseline benefits’ goes against locals’ expectations of how they may reasonably interact with their local 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.

Local 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 within 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. This issue cannot be avoided by bringing in non-local staff to fill these enforcement positions 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 represent 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. The MPA Authority Chair at that time strongly echoed this sentiment, as did local commune representatives-particularly around access to the core zone for recreational tourist fishing activities. The local people also saw the potential benefit of this activity as an additional livelihood the MPA could provide to them. However they were also aware of 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. The re-framing of the coral reef into an MPA reconstituted the value of the local aquatic resources into a different form of benefit for both the local people and authorities, and the values of the MPA were constantly framed in terms of economic benefit, and rarely in terms of biodiversity value.

LIVELIHOODS INTERVENTIONS ON CU LAO CHAM:

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. By mid-2007, the national MPA authority was already recognising this difficulty in its policy development and was retracting its commitment to the implementation of 'alternative livelihoods' on the basis of experience at existing MPAs such as Cu Lao Cham. At a policy development workshop on livelihoods in June 2007, a senior government representative stressed that the intention of the national MPA livelihood program was

“...not alternative income generation (AIG) as it cannot replace fishing, the intention is to provide livelihood support. So shouldn't use the term AIG, should use the terms diversify or support.”

This view was countered by an NGO staff member who noted

“..if the core zone stops people fishing and they have to change livelihood as a result then it is alternative income generation.”

These quotes represent the conflict at the core of livelihoods interventions around MPAs – that MPAs adversely affect livelihoods, and often do not have the capacity to address these affects adequately, if they acknowledge them completely in the first place. The designation of a core zone restricts fishing effort in a location where this effort may not be transferrable, either to another fishing location, technique or to another livelihood.

In 2006, an alternative livelihood program was commenced on CLC as one of the last components of the project phase of the MPA. 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 (Trinh 2006). 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 were also to falter 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 land availability of 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.

The fish sauce and dried fish training groups continued into 2007 and were considerably more successful. However a range of experiences was discernable within each training group, which reflect the range of variation in success that can be experienced within such livelihoods assistance groups. The most successful participants in both groups were risk takers, had access to capital, and most importantly, had pre-existing visions of the expansion of their household livelihood strategies based on predetermined goals. 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 broader 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 send their children to the mainland to complete their schooling as a result. However children who boarded with friends or relatives 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 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. In other words their fishing effort would not be transferred solely into fish sauce production, but would enable them to expand and diversify their household's range of livelihoods activities and continue to include fishing as a staple activity. 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 livelihoods assistance program or the scale of the MPA, but 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 livelihoods programs fail to provide adequate support. When a group of dried fish trainees were questioned by their trainer about they hadn't been more successful, they answered that they couldn't buy enough fish to make products, and they couldn't obtain fish from neighbouring villages either as those people only sold fish to people from their own village. When questioned whether they considered working together to increase their buying power and efficiency, they answered no, with the underlying reason that working outside of trusted family networks was not desirable. The more successful producers were suggested to employ the less successful ones as labour, but they declined. For each logical solution given by the trainer, the trainees had a response about why it didn't work for their

situation. They 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. 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 – 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.

Another significant factor 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 don't 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 livelihoods support program was not well supported in theory in 2007 as the participants aren't used to taking loans and are scared to 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 their interest rates 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.

Of the 127 trainees involved in the CLC livelihood program, 90% were women – which leads to the natural conclusion that from the outset, the program could never be about livelihood replacement when it did not target those members of the household who are the principal fisherfolk. 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 were already complaining about the degree of competition for high fishing returns due to their relative lack of skill compared to the older fishermen, and were considering new livelihoods such as chef or shoe making among the tourism bubble of Hoi An on the adjacent mainland. Despite the relatively high wages these young men could earn from longline fishing, they were recognising that fishing was in the long term, a dead end opportunity. 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.

CONCLUSION:

This analysis of regulation and livelihoods impacts from an agent of environmental change, the MPA, was made possible through the use of agrarian

change focal lenses. The analysis has highlighted how regulation has impacts on livelihoods, though possibly not on biodiversity conservation as they are intended to do; and that alternative livelihoods programs are employed in response to this conflict. These programs often operate with false baseline assumptions that livelihood replacement is in fact possible, and in absence of sufficient understanding of local people's daily livelihoods. In the case of this research, the capacity to consider multiple socio-economic factors enables a critical examination of the livelihoods dynamics of MPAs within the broader coastal change context – this is a view that is not currently afforded by the MPA literature, which by and large fails to adequately address issues around livelihoods impacts of MPAs. The agrarian change processes have been able to shed light from a broad scale perspective where a narrow marine disciplinary approach would have failed analysis of these issues, thus confirming its relevance to rural change analysis in the coastal zone. It also confirms the value of crossing the coastal barrier in studies of rural social change to both the inland and the aquatic specialist, as livelihoods change, like aquatic processes, may not recognise geographic boundaries.

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