HISTORICAL CHANGES IN HUMAN-NATURE INTERACTIONS IN ISLAND COMMUNITIES OF THE MALDIVES

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Abstract: This research, conducted in seven island communities of the Maldives, explores the historical changes in human-nature interactions of rural communities in the Maldives. Situated in a social constructivist paradigm qualitative approaches are used in the study. "Everyone goes fishing", this is echoed about the historic interaction with the surrounding reef systems. Socio-economic development in these communities was based on this livelihood activity. Development in turn brought about changes in the types of interactions communities had with their surrounding reefs. Further themes emerging around the core of the human-nature interactions include gift, reciprocal and market exchanges, urban migration, changing reef values, traditional knowledge and resource governance. The social interactions, livelihood, cultural practices and development in the communities were centred around changing human-nature interactions.

Key Words: *Dravidian, Fisheries, Local, Maldives, Traditional*

Introduction

Local communities have been living in the islands of the Maldives for over 2500 years (Mohamed, 2005). Surrounded by the sea, the people living on these islands are heavily dependent on the surrounding seas, especially the coral reefs and its resources. Outside the Western Pacific, the Maldives is considered to be the most heavily dependent country on coral reef resources (Ghina 2003, Spalding, Ravilious and Green 2001). The island communities depend on the reef and seas as a form of subsistence, livelihood as well as other socio-cultural interactions. As the communities developed, the interactions the islanders had with the surrounding environment also changed and evolved. This paper explores these human-nature interactions that rural Maldivian communities had with their surrounding environment. As over ninety nine percent of the Maldives consists of sea most of these interactions are with the marine environment. Hence, the focus of this paper is on the human-nature interactions with the surrounding seas and reefs.

The discussion of this paper is mainly based on a qualitative research conducted in seven island communities of the Maldives to explore how local communities use and interact with

their surrounding marine resources. Communities from the north, mid and south of the country were visited (Figure 1). The islands visited consisted of Thakandhoo and Maarandhoo from North Thiladhunmathi atoll, Makunudhoo from South Thiladhunmathi atoll, Dharavandhoo and Kendhoo from South Maalhosmadulu atoll and Hulhudhoo and Meedhoo from Addu atoll. The collection of information spanned from 2008 to early 2012. In addition to field work in these island communities historic texts about the Maldives has also been extensively analysed.

The subsequent sections of this paper begin with an introduction and overview of the Maldives to give context to the discussions that follow on changing interaction with the surrounding marine environment. A general background of the country, especially its physical and social settings, is important to capture the human-nature interactions of communities discussed here. The discussions of the changes in human-nature interactions are explored in three main parts. Part one looks at historic interactions that island communities had with the surrounding environments. The main interactions communities had with the marine environment were for subsistence, livelihood and traditional or cultural use. Socioeconomic advancements in the communities led to changes in resource use and interaction. The early years of this change are discussed in Part two, the transitional period. Introduction of money, advances in fishing and urban migration are some of the changes discussed in this part. Finally, Part three explores the current interaction that communities have with the surrounding reefs. Urban migration and subsequent reduced direct interactions with the marine environment are characteristic of this period.

The Maldive Islands

The Maldives is a chain of tropical coral reef islands lying approximately 480 km southwest of India (Figure 1). The islands span a length of 900 kilometres from north to south and is approximately 130 kilometres wide (Mohamed, 2012). The coral reefs of the Maldives are characterised by the numerous atoll formations. Atolls are annular or irregular oceanic reef formations which surround a lagoon. The diversity of reef formations in the Maldives is captured by the richness of words such as *faru, thila, giri, haa* and *gaa* used by locals to talk about reefs. Islands usually lie on the reef rim of the atoll but some islands are found in the patch reefs inside the atoll (Figure ***2***). The shallow waters near the reef islands and the reefs are known as reef lagoons while the deeper waters inside the atoll are known as atoll lagoon or atoll waters. Resources within these waters, such as diverse types of fish, sand and coral, are used by the local communities.

There are about 1190 islands dispersed over the twenty six natural atolls in the Maldives (Saeed 2005). Of these islands 188 are inhabited (Department of National Planning 2014). The islands of the Maldives are quite small in size with more than 85 percent of the inhabited islands being less than one square kilometre. Only three inhabited islands are larger than four square kilometres (Mohamed et al. 2001). In addition the islands are very low lying with more than 80 percent of the land being less than one metre above mean sea level (Jameel 2007). The geographic dispersion and separateness of the islands force the islands to be fairly autonomous and self-sufficient.

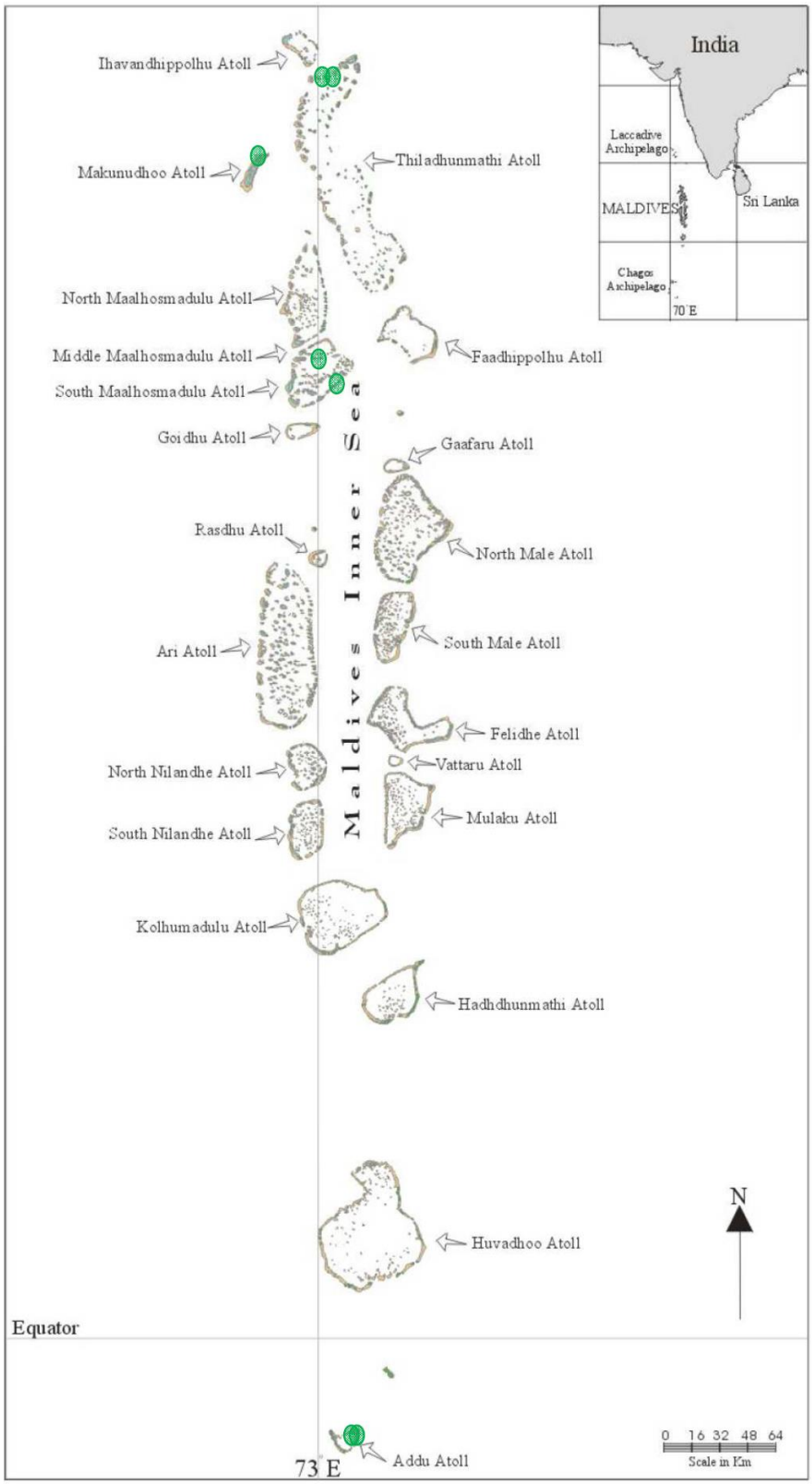

Figure 1.Map of the Maldives showing study communities (adapted from Naseer 2003, p.12)

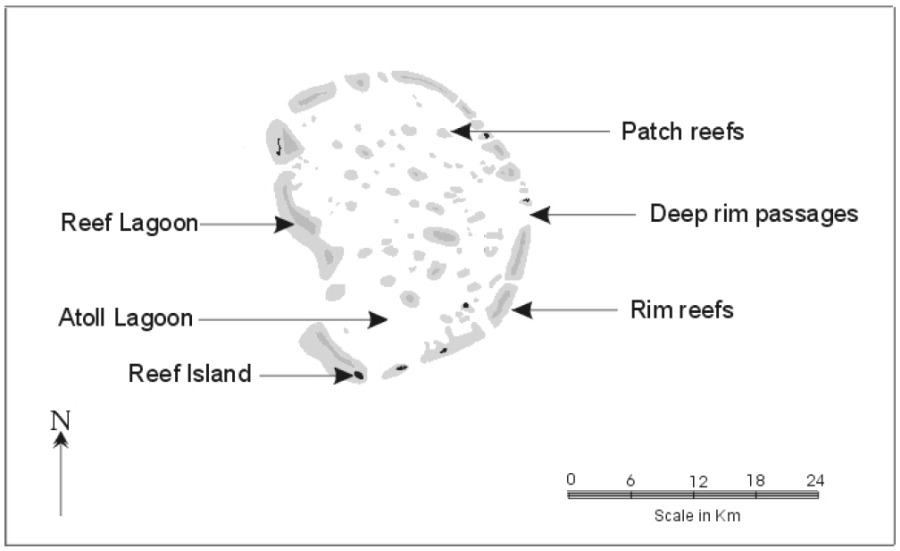

Figure 2.Structure of an atoll (Source: adapted from Naseer 2003, p.10)

The population of the Maldives, according to the latest census in 2014 is 402,071 (National Bureau of Statistics 2015). The latest census show that about 16 percent of the population comprise of foreigners[1]. . According to historic accounts, it is not clear when people first settled in the Maldives. Historic references to the Maldives can be found as early as the 4th century B.C. (Mohamed 2005). The first settlers are thought to be Aryans probably from Gujarat in north-west India (Saeed 2005). Various historical accounts, both oral and written, describe settlement in various parts of the country by aborigines of India and later by the Sinhalese (Saeed, 2003).

Although the current Maldivian population represent a varied ethnic mixture of Indo Aryan, Dravidian, Sinhalese and Arabs, over time and through inter-marriages, the current social structure can be described as "an extreme case of ethnic homogeneity" (Saeed 2005, p.198). Today the people of the Maldives represent a homogeneous population which has a common language, religion and similar social and cultural structures. According to Saeed (2005), Hinduism was the religion of the earliest settlers and later Buddhism was brought by the Sinhalese. Islam is the currently practiced religion in the Maldives. Historic accounts identify the Maldives having become a Muslim state in 1153 AD. Religious beliefs play an important role in shaping the worldviews of communities and hence the ways they interact with the environment.

The island communities are usually a small, tight knit group interrelated by kin or marriage. Since traditional times these communities have found sustenance from the surrounding seas and reefs. The cultural and social homogeneity of the communities means that they are homogeneous in terms of resource use too. For example, use of sand in religious ceremonies or even the cooking of food for these ceremonies was all similar. Homogeneity in use of resources is an important factor in the use and management of natural resources (Baland and Platteau 1996). The social and kinship structure have influenced the way resources are used and shared by the communities.

Historic accounts show that before the first monarchy was established in the Maldives a locally determined form of governance existed in individual islands (Saeed 2003). According

[1] The foreign population in the Maldives has been enumerated for the first time in the 2014 Census. The increase of foreigners adds to the heterogeneity of the population and hence impacts the resource and its use.

to historic accounts a monarchy was established in the Maldives well before the 3rd century B.C. (Saeed 2003). Following the rule by several dynasties, a constitutional monarchy was established in 1932. The monarchical rule continued until the Maldives became a constitutional republic in 1953 (Saeed 2003). However the Maldivian republic was short-lived with the country reverting back to a monarchy after less than ten months. The country became a republic for the second time on 11th November 1968 and since then have been a constitutional republic with executive, legislative and judicial branches.

Fisheries and tourism, economic activities that depend on the marine environment of the Maldives, are important economic drivers of the country. While traditionally skipjack tuna had been the main export of Maldives, now yellowfin tuna has become a prominent fishing industry. Developed in 1972, tourism has now become the largest source for foreign exchange earnings. Through introduction of tourism, now the fisheries sector has diversified to include other reef fish. The economy and livelihood of the people are directly and indirectly related to their surrounding marine environment. The coming sections will explore how the island communities had interacted with their surrounding coastal environment. The changes in these human-nature interactions are also explored.

Part 1: Traditional Human-Nature Interactions

From the earliest known records about the country, Maldivians are known to interact heavily with the surrounding seas and its resources. It can be said that their life centred around the sea. The Maldivian stories and folklore are rich with such examples that show connection to the sea. Accounts of demons that arise from the sea, tales of great journeys across oceans and dark magicians casting spells to bring roaring sea storms, epic encounters of fishing expeditions are all such rich examples that are weaved into the Maldivian oral history.

With seas making up about 99 percent of the country, it is not surprising that fishing was the main activity in which communities interacted with the environment. In all the communities visited for this research, everyone echoes the same words "everybody went fishing!" in earlier times. The communities depended on tuna as a main source of food and for trade. The observations and information given by the community elders support that traditionally tuna, especially skipjack was the most important food. It was so much a part of their lives that tuna fishing did not need to be specified as a distinct type of fishing. Even today if someone talks of "fishing" or "fish" they are referring to tuna[2]. This was confusing at first until you realize that when people used the word “fish” in general it was referring to skipjack tuna, and for other fish they use the specific term for it. For example the term *faru-mas*[3]is used for reef fish. Despite the abundant reefs and reef fish surrounding the islanders did not eat reef fish except when tuna fishing was poor (Mohamed 2012).

The importance of skipjack tuna is also captured in Maldivian folklore. Mohamed (2012) describes in detail a Maldive folk story which describe how the skipjack tuna was formed. According to the story, a fish made out of dough comes to life as it is released into the water leaving five parallel lines on either side which are from the marks of the fingers as the fish is let go. The significance of these lines is that they are the trademark lines found on the skipjack tuna.

[2]*Mas* is the general term for fish in the local language. *Mas beynun* means catching fish and *Mahah dhiyun* means going fishing. When informants use these terms it is referring to tuna fishing.
[3]*faru* means reef.

Catching Tuna: Norms and Practices

Traditionally, all the men were engaged in tuna fishing. All the islands visited talked about the large number of fishing vessels, locally known as *mas-dhoni* that the island had earlier. Traditionally sails were used in the fishing boats. The boat owners would engage a group of about 15 men who would work on the vessel. The men had different designations based on their job and skill. The boat is led by the *keyolhu* (chief fisherman) who commanded a crew of, *en keyolhu* (bait thrower) and *falhuverin* (ordinary crew). It is the job of the *keyolhu* to decide the places to go for bait and also tuna fishing for the day. The *keyolhu* will consult these things with the crew the night before.

Catching of bait from the reefs is essential for a good catch of tuna. In addition great skill and knowledge is required from the *en keyolhu* to throw the bait in such a way that the school of tuna is kept at the surface and hence, enable easy catching by the fishers. From experience, the *en keyolhu* will know if the spot is not good for tuna. Fishermen from the islands narrated instances of when an expert *en keyolhu* could steer away a school of tuna from other nearby boats by his sheer skill in throwing the bait. Fishing is an activity where traditional ecological knowledge is constantly being in use. The good bait fishing grounds, the ways of the tides and weather are knowledge that the islanders and fishermen possess from generations of interaction with the surrounding seas. As O'Neil, Holland and Light (2008, p.1) describes the human-nature interactions, "we live from them ... live in them ... and live with them". Knowledge of resources and ecosystems is developed by living in and interacting with the ecosystem over long periods of time. A retired *keyolhu* from Thakandhoo explains:

> We will know as we have been doing this since we were very young. By the time you become a *keyolhu* you would know all these places. You will know all the reefs in the area you go to, the seasons when bait come in and also where the bait come will be known.

The Maldivians have for centuries used the pole and line fishing technique for catching tuna. The existence of this method is very nicely captured in the earlier mentioned, almost forgotten, folk story about how the skipjack was formed. The girl asks the tuna to go multiply and to allow her people to catch the fish as food. In the commencing dialogue the tuna requests certain methods of catching the fish, which is the pole and line fishing practiced today.

Pole and line fishing is both a socially and environmentally friendly form of fishing. This is one among many norms that exhibit caring for the environment and an understanding of the dependability of the communities on these natural resources. Embedded in these practices are also unwritten social contracts of consideration for others. i.e. behaviours that ensure one does not take too much of a resource and there is plenty for others to use too. An example is fishing from an *oevaali*, any drifting object under which schools of tuna can be found from the sea. Once a boat has caught enough they will leave the *oevaali* for the next boat to use. This is an unwritten rule practiced by all fishermen. These norms ensure everyone can use the resources and also is a security that others will do the same. Fishermen also report that when many boats are fishing at the same school of tuna, bait is thrown in such a way that other boats can also fish from the school[4].

[4] Note the earlier narrative of how skilled *en keyolhu* can take away a school of tuna from another boat. This narrated by fishermen is not often and usually happens in the moment of great competition, usually among fishing boats from different islands or different parts of the country.

These practices of consideration for the environment and others stems from Islamic beliefs and moral values held within the community. The norms of resource use for many of the marine resources are governed by the belief that all provision, *rizq*, comes from Allah and the due measure for each person is pre-determined. The other belief relating to this is that each person must strive to get their *rizq* in a lawful manner.[5] Faiz, an elder and retired fisherman from Dharavandhoo describe how the belief in *rizq* is incorporated into their use of fish from the lagoon.

> What happens is whoever sees [the school of fish] will go to it. Will go and fish from it. The sea is not for any one person. What is in the sea is a *rizq* God has provided for everyone. Whatever amount of *rizq* a person is meant to get on that day he will work for that amount.

Berkes (2012) discuss how traditional societies perceive nature through a system of beliefs, knowledge and practice. Their worldview stems from this interlocking system which comes from living in the environment as part of the natural environment. Ingold (2011, p.96) describes such worldviews as of inhabitants who live in the environment rather than exhabitants "[e]xpelled to its [world's] outer surface".

Returning with the catch

Returning home after a catch the crew, led by the *keyolhu,* engages in dividing the catch into shares. It is significant to note that money was not used in exchanges within the community. All the fish that is brought is divided among those who were involved in the day's fishing. In addition, early accounts relate how tuna was set aside by each boat for the leaders in the community. This includes the island chiefs (*katheeb*) and *mudim*, the person who takes care of the mosque and calls for prayer. A retired *mudim* from Hulhudhoo says that "four tuna out of every hundred [caught] is given to the leaders. There were about ten to twelve fishing boats on this island." This amount may have varied in different islands and the amount distributed to the different leaders may also vary. The communities reported that people did not mind giving fish shares to the leaders as it was then perceived as something separate from the central government. This is seen as the people selecting the leaders as given by the logic that if the people pay for the leaders then it is the people electing them. The allocation of fish shares to leaders was stopped and salaries introduced in 1959 by the then Prime Minister Ibrahim Nasir (Mohamed, 2013).

In addition to the share allocated for the leaders some islands also used to have communal tuna shares. People from Hulhudhoo and Meedhoo report of a share called *kaadu mas* (staple fish). This is fish that is taken in exchange for staple things like rice. Each island has a store where staples like rice are kept for the community (*kaaduge*[6]). The people take rice, flour and sugar from there without payment. Payment is through communal fishing. i.e. all the tuna that

[5]The interaction between predeterminism and freewill are theologically complex and is in much discussion among scholars (Taib 2000). A discussion on that is beyond the scope of this work. In relation to this work and Maldivian societies, these two concepts are believed and understood in Maldivian societies on the basis of Quran and Islamic teachings.

[6]*Kaaduge* is a community food storage for staples like rice, flour and sugar that was used earlier. In times of food shortage the fishermen of the community will exchange fish for food items. According to some communities supplies to the *kaaduge* are bought with a weekly community fish share, *kaadu-mas* (literally staple fish), taken from fishermen. This share is cooked and processed and the products are sold to either the capital or Ceylon in the south in exchange for essential staples.

is caught on a certain day by all the boats will be given to the *kaaduge*. Similarly other islands also reported of communal fishing where the fish caught on the day is allocated for communal activities.

The allocation of individual fish shares, for those involved in fishing, had some degree of variance from different accounts and communities. The most common account is the dividing of the catch into four parts. Of this one share is given to the boat owner. The rest is divided among the crew. In some islands distinctions are made by allocating additional half shares to the senior fishers like *keyolhu* and those who worked exceptionally well that day. Some accounts also described allocation of shares for the net, sail and other equipment as sometimes these belonged to people other than the boat owner. This system of allocating changed when mechanized boats and collector vessels were introduced in the early 1970s as this led to the need for buying fuel for the boat. As fish was now sold to collector vessels, the profits were divided with 50 percent going to the boat owner and the rest divided among the crew[7].

Use and Exchange of Tuna

The individual shares of tuna of a fisherman were taken home and cooked by the women. The fish is both consumed as food and also used as exchange to buy other essentials such as rice, sugar and, tea. Tuna was constantly changing between the realms of "use value" and "exchange value"[8]. The importance of skipjack as a food and as an exchange commodity has been well established in the communities as can be seen from historic accounts of travellers such as Ibn Batuta[9] and Pyrad[10], both whom have spent a considerable period of time living in the Maldives. Ibn Batuta (1883, p.5) describes the use of skipjack by Maldivians as follows:

> The food of the natives consists of a fish like the *lyroûn*, which they call *koulb almâs*. Its flesh is red: it has no grease, but its smell resembles that of mutton. When caught at the fishing, each fish is cut into four pieces, and then slightly cooked: it is then placed in baskets of coco leaves and suspended in smoke. It is eaten when perfectly dry. From this country it is exported to India, China and Yaman.

In traditional Maldivian communities while tuna is consumed as food by the family it may also be shared by inviting neighbours and friends to a meal. In the exchange realm, any exchanges within the community were in the form of gift exchanges, where tuna is shared with neighbours, family and friends either by giving fresh or sharing of cooked meals. Some people reported that sometimes tuna may be exchanged for another good such as palm sugar or coconut. Most exchanges are unaccounted reciprocal exchanges like those described in "gift economies" by scholars such as Mauss (1923) and Sahlins (1972). From observation and interviews, it can be said that traditional Maldivian exchanges are more in line with Malinowski's description of a gift intended to build social ties as opposed to Mauss's (1923) view of a social contract obliging the receiver to reciprocate. Gudeman (2001) uses the terms community realm and market realm to distinguish between the two. In this community realm,

[7] There were reported variations from different communities on the percent allocated.

[8] These terms first distinguished by Aristotle have been discussed in detail by philosophers and economists such as Adam Smith and Karl Marx.

[9] Ibn Batuta was a Moroccan traveller who visited the Maldives twice. Once between 1343 and 1344 and the second time in 1346

[10] Pyrad de Laval was a French navigator who was shipwrecked in the Maldives from 1602 to 1607

gifts often get reciprocated or paid forward. Though these exchanges may not necessarily be of equal kinds and community members would not even view this as reciprocating a favour.

Although not exchanged in the market realm within the community, tuna was used for exchange outside the community. Tuna and the money cowrie had been used for exchange by the Maldive communities. Many elderly informants recalled that tuna was money in that time. Aishath, a middle aged woman from Hulhudhoo shared her memories of childhood and described how her grandmother took extreme care in cooking and drying the tuna. While her grandparents were well-off people in the community and had helpers to work in the kitchen, it was always her grandmother who personally looked after cooking tuna. Her grandmother would say "Whatever the amount of tuna I will do the cooking and processing. After all this [tuna] is money." If any piece of tuna gets broken during the cooking process it would not fetch a price and often these broken pieces would be left to eat as food in the house. Aishath recalls that only the scraps of meat from the bones, fish head and other fish parts were used for eating. All the smoked fillets were taken to Ceylon for trade. This importance on cooking and curing the tuna is emphasized by other communities too. The people from the north brought their cooked tuna and other produce such as *rihaakuru*[11] to sell in the capital.

Despite having a high exchange value the selling of tuna, or any other fish, in the community is something that is unheard. Such sentiments can be found in the narrations by Pyrad about fish caught by the community. "All this fish is used for their food in banquets and treats, there being no traffic in this kind" (Gray 1888, p.194). An elder and retired fisherman from Thakandhoo explains that "tuna is not sold [in the community]. Tuna is sold to Malé. In the island we might sell to the *kaaduge*. That is when food is scarce. Otherwise we won't sell." As the communities developed it was inevitable these traditional values regarding the use and exchange of marine resources would change.

Part 2: Transitioning to Modern Times

The human interactions, both with the natural and social environment are heavily entwined. The interaction with the oceans expanded causing further socio-economic development in the communities. This in turn led to changes in the way communities interacted with their surrounding environment. In this section some of the significant events leading to these changes in human-nature interactions will be discussed.

According to community members the turning point in how communities interacted and valued the surrounding marine resources was with the introduction of money. Earlier communities had used tuna and the money cowrie for their exchanges outside the community. The earliest accounts of introduction of money were in Addu Atoll, during World War II, when the British had a naval base in the island of Gan. The British introduced waged labour in their camp, including buying of fish and other local supplies from the islanders.

> Cash paid employment in the British air base, with availability of consumer goods in Gan, ran parallel to the changing traditional economy of fishing and travel to Ceylon for selling of fish and other produce in exchange for clothing material, grains and sugar.[12]

[11] A thick paste made from stock left after cooking the tuna
[12] Saeed, 2003, pp 60-61

It was during this time, in 1959 that instead of the traditional tuna shares, salaries were given to island leaders (Mohamed, 2013). Apart from money received by the island leaders, money became more frequently used by the people of other atolls in the 1970s when mechanized fishing vessels and fish collector vessels were introduced[13]. The introduction of collector vessels meant that tuna caught is sold directly without it being processed in the islands. This cut women off from an important contribution to the economy of the household. Another noted change in interaction with the surrounding environment was the demand by islanders for coral, and later sand, for building their dwellings. Increased fishing productivity meant improvements in the socioeconomic conditions of the islands thus leading to the construction of more durable houses made out of coral. Earlier coral had been used for only communal buildings such as temples and mosques (Mohamed, 2012).

The introduction of money in the island communities seems like a catalyst setting off a series of change. Elders from Hulhudhoo recall that everything changed when people started working for the British in Gan. One of the elders stated that:

> Once the British left, the people [of Addu] started going to the capital for jobs. Government and resort industry jobs but mostly in resorts. Everyone had three to four children and they wanted to give a better education to the children. Everyone started leaving.

This statement pulls together many of the changes that were occurring in the Maldives and especially in the island communities. The introduction of tourism and urban migration for jobs in resorts, better education and a future for the children. While initiated in the south in Addu atoll this wave of urban migration hit the northern atolls much later (Ministry of Planning and National Development 2008).

The islanders attribute tourism as a major factor in the disappearance of the traditional tuna fishing. The cottage production of dried tuna and *rihaakuru* still takes place but on a much smaller scale than before. Members from Hulhudhoo recall that earlier each household would on average produce between a hundred to two hundred kilograms of dried tuna. Now this production of tuna may be done in one or two households in an island. This decline can be seen in the number of fishing vessels on an island. Hulhudhoo one of the largest fishing islands I visited had 3 fishing vessels in 2009 compared to about 12 in earlier days[14]. Thakandhoo currently does not have any tuna fishing vessels but they used to be a renowned fishing community. The island councillor of Thakandhoo talked of the past saying "Thakandhoo was a number one fishing community in the area. The fishermen of Ihavandhoo [now a renowned fishing community in the north] even used to go fishing only if Thakandhoo fishermen went. They followed us."

Tourism, which is again based on the natural beauty of the islands and coral reefs, brings out another human-nature interaction and a new value for the locals. The introduction of tourism also meant the development of other opportunities for local fishermen. Reef fish became more important as it fetched good prices in the tourist resorts. Today locals are engaged in many reef related activities such as live grouper fishery, sea cucumber fishery and diving for income. According to the island communities, there was a change in the attitudes of people

[13]The government of the Maldives had formed a joined venture with a Japanese company to establish a fish canning factory in 1978 (Sinan, n.d.). It was through this that collector vessels were first introduced.

[14]The size of boats and the capacity for storing tuna would be many times greater now. This is merely an indication of the level of involvement as a community.

towards home consumption of reef fish. All island communities, except Maarandhoo, said that people traditionally did not like to eat reef fish. From observation as well as discussions it can be noted that this has changed a lot. While some believe this to be more awareness on the health benefits of reef fish others attribute this to a change in interaction with the reefs. Earlier tuna was abundant so people ate tuna and now with reduced interaction with tuna fishing and increased reef fishing, this was a natural preference of what is available.

As can be seen, there is a myriad of events one affecting the other that has led to a very notable change in human-nature interactions by island communities. From communities that based their life around tuna fishing, the communities have expanded their interactions to include extractive uses of other types of fish, coral and sand[15] and non-extractive use for tourism.

Part 3: Human-nature Interactions Today

What are the current forms of human-nature interaction in island communities? This seems an appropriate topic to end this discussion on how people in island communities interact with their surrounding marine environment. In this section, the discussion focuses on what migration to the capital has meant in terms of the interactions Maldivians had with the surrounding seas and reefs.

Families from island communities migrated to the capital to provide a better education for their children. After a modern education the children settle in the capital, often marrying outside their island and settle down in the capital to raise a new generation that is more distanced from the island environment than the first generation children. Subsequent generations will have less and less interaction with their islands. Spretnak (1997) describe a similar loss with subsequent generations, when people living in traditional life styles move to more urban areas.

While being away from the islands, living in the city, the interactions with the seas was greatly reduced. There was no need to interact in tuna fishing as a means of income or even for food. In the city fish is available from the fish market or more conveniently available from specialised shops as frozen tuna. The capital, Male' is full of construction sites with multi-storey buildings in various stages of construction. Some refer to the capital as a concrete jungle. Yet it would not be often that one would actually relate this to men in the islands mining sand for selling to the construction industry. In the city interactions with reefs for livelihood or subsistence is an out of sight out of mind concept. Concerns for the environment shown by younger generations are often for an imagined environment. Ingold (2011, p.95) discusses the difference of looking at an environment and inhabiting it.

> We are, these days, increasingly bombarded with information about what is known as ‘the environment’. Seated in our homes, in classrooms or in conference theatres, this environment is flashed before our eyes in images of landscapes, wildlife and peoples from around the globe, often to the accompaniment of facts and figures assembled to deliver a compelling message of change. Indeed, so accustomed are we to viewing images of this kind that we are, I think, inclined to forget that the environment is, in

[15]Island erosion arising from large amounts of coral and sand mining in islands had led to strict regulations on their use. Currently mining of coral and sand is prohibited from islands. Special areas are designated in each atoll to mine sand. The demand for coral had disappeared with changes in the construction materials used.

> the first place, a world we live in, and not a world we look at. We inhabit our environment: we are part of it; and through this practice of habitation it becomes part of us too.

The views of many younger people growing up in the city has become that the environment is a place to be preserved. This can be contrasted with the way elders through their worldview, valued the environment as a place to dwell in, something they depended on for subsistence and also something through which they could appreciate the Creator. A main influencing factor in this changing worldviews of the younger generations can be the education that parents had come in pursuit of. This is a new globalized education which will help their children "participate in the modern global world" (Saeed 2003, p.208). Saeed (2003, p.208) further describes her Western education in the capital to emphasise the absence of meaningful lessons on the Maldivian local environment:

> I had the opportunity to enjoy the fruits of the emerging nation into the world picture of schooling in the 1980s. While I never studied the Geography or the History of the Maldives, I learned about the World Wars, the French and the American Revolutions. With no mention of the flora and fauna of the Maldives, I learned about the Savannas of Africa and the Prairies of North America.

During the course of this research I had the opportunity to talk with two teenage girls who had migrated from their island to study in Male'. Among the discussions they talked of their difficulty in understanding many of the topics in their Environmental Studies subject. They believed they were not smart enough to understand the topics. Rather than an intellectual disability perhaps their lack of understanding arises from a difficulty in relating to knowledge that they cannot experience in their current environment.

Students through their schooling learn to care about global issues such as climate change and sea level rise. Nadasdy (2003) discusses schooling used by the Canadian state to make subjects of the First Nations people. Similarly Agrawal (2005) proposes the idea that environmental logics and movements are forms of governmentality which is used to create environmental subjects. It can be said that the distance created between the resources and the younger generation due to migration to the capital is also a distancing from local worldviews. The formation of a globalised worldview means that traditional social norms and morals are eroding.

Currently it is not a total detachment from the island environment. The families often return to their home island during school holidays. From the islands visited it can be noted that the numbers returning for holidays is less in the southern islands of Hulhudhoo and Meedhoo. Perhaps this may be because these were the earliest islanders to migrate to the capital and in terms of generations they are more distance than the other islands where migration started later.

These prolonged staying away from the islands has an impact on the personal and social relations between community members, especially between the younger and older generations. Elders in communities would talk of finding it hard to recognize the current generations that grow up in the capital. Such remarks by elders of the community reflect the level of impact on personal interactions from migration. Such factors, especially in larger islands, have implication in the ease of market exchanges as opposed to community exchanges. This was noted during field visits that in the larger islands of the south, reef fish is

sold within the community but still there is more giving or sharing of reef fish in the smaller islands.

School holidays are a time full of activity on the islands and especially reef related activities are abundant at this time. Reef fishing, picnics to nearby islands, barbeques, collecting seafood from the house reef, swimming and snorkelling are all enjoyed by those returning home after a life in the city. This demonstrates an increase in the recreational use of the surrounding reef environment. It was noted again that the level of interaction for recreational purpose was also less in the southern islands. A new interaction has emerged. This new interaction and use for pure enjoyment perhaps would be a somewhat alien concept to generations past.

Conclusion

Human-nature interactions in rural communities of the Maldives has taken many turns and twists. We have seen a change from direct to indirect use where traditionally everyone had been involved every day in tuna fishing. This has changed with people opting for waged labour and thus interactions being more indirect. The importance of tuna as a staple and for exchanges has changed to interactions being valued more for recreation than livelihood. The sense of community attached to traditional interactions has given way to more individualistic interaction with the surrounding environment.

As can be seen many interlinked factors had contributed to these changes. The most notable of these changes are the introduction of money and waged labour, mechanization of fishing vessels and increased production, migration of families to the capital and the subsequent distancing of generations from the island environment. This distancing combined with a globalized education and developments of global worldviews have led to a very different picture to the traditional island communities of the Maldives.

NOTES

*This research was conducted in The University of Canterbury, New Zealand.

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