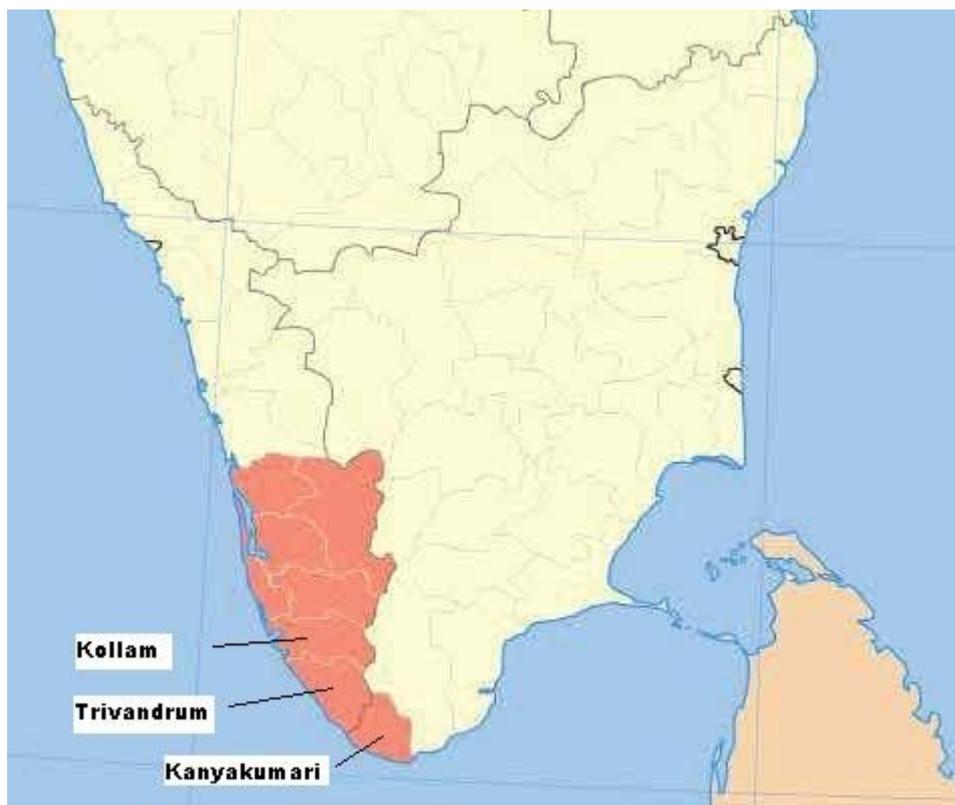


Mukkuva Community in South India: socio-religious history and biocultural diversity



Acknowledgement

First we thank UNESCO-IPBES for funding and guidance to develop this case study report about the Mukkuva community in South India.

This report would not have been materialised if the contributions were not from different stakeholders of the Mukkuva community. We thank all participants especially key ILK experts; Mr. Jo Paneer Selvam, Dr. Albarius, Ms. Lisba Yesudas and Mr. Robert Panipilla who presented and initiated dialogues in their respective fields of expertise.

A worth mentioning contributions are made by the traditional fishermen, some of them took break in their seasonal fishing to supply the information that have become the cornerstone of the case study. Their names (from the oldest to youngest) are acknowledged here with their permission: Alexander, Mariyadason, Thomas, Ignatius, Cletus, Joseph, Jacob, Sebastian as key informants and *chelaalis* (marine life experts) and other fishermen who participated in the Trivandrum workshop.

We also thank individuals who took part in the focussed group discussion; namely, Mr. Anto Marcilin, Mr. D. Antony, Rev. Msgr. James Culas, Mr. Joseph Lopez, Rev.Fr. Lawrence Culas, Dr. Mary John, Mr. Shiju Basil and Mr. Vincent Jain, and others.

Last but not least, we express our sincere gratitude to the members of the Coastal Students Cultural Forum (CSCF) who did their volunteer contributions to help organising event with *Chelaalikootam* (fishermen elder and expert groups) especially, Mr. Jaison John Mr. Kumar Karumkulam, Mr. Vipindas Thottathil, and Ms. Greeshma, Ms. Reshma, Ms. Soumya and others.

Illustrations

Figure 1: Wind systems

Figure 2: Ocean Currents

Map (Trivandrum and Kanyakumari district)

Executive Summary (General findings)

1. In this report we only consider the most important and relevant information especially with regard to biodiversity and ecosystem services though we could collect a large volume of data from the two local follow up meetings, focussed group discussions and key informant interviews.
2. Socio-cultural tradition and livelihood of *Mukkuvar* largely and deeply connected to the marine ecosystems like estuaries, coastal lines and open ocean. To understand the history of Mukkuva community, awareness of the marine ecosystem services is much needed. There is an inseparable relationship between the sea and Mukkuva community. The ocean and the marine environment has become an integral part of the history and upbringing of the community.
3. Mukkuvar's language is evolved through their interconnection with the sea and marine environment. The language contains many aspects of marine environment and marine ecosystems. Acquiring this language is beneficial to have an understanding of the ecology of coastal areas. It is therefore protection of the marine biodiversity also indicates the protection of the local and indigenous language and vice versa.
4. Livelihood practices demonstrate the unique features of the seabed ecosystems and marine biodiversity in the study area. They are featured with large presence of platform reefs, rocky reefs and multitudes of marine organisms including vast varieties of fish species. This has encouraged the traditional fisher folks' seasonal migration from one place to another revealing their nomadic characteristics.
5. Imported technologies such as bottom trawling and modern development trends like *adakkam kolli vala* (one net for all with a large vessel) deteriorate their traditional knowledge and sustainable living practices. This encourages overfishing, over exploitation of fish stocks and destroy marine ecosystems in the deep sea. However the Mukkuva community in Trivandrum resisted and boycotted bottom trawling since its initiation in 1960's and none of them is owned by them and discourage the community members the use of ring seine and purse seine as destructive methods of fishing.
6. The indigenous technologies developed by the fishermen promote sustainable use of marine resources and protect and promote marine biodiversity through their environment friendly fishing techniques and building artificial reefs to compensate the natural reefs destroyed by the destructive fishing techniques such as bottom trawling.
7. The study reveals that they have a deep and clear knowledge and understanding of three essential elements: ocean, sky and the land (earth) of human upbringing or human development. This triangle and integrated knowledge of the ocean, astronomy and the land are essential for fishing or sustainable fishing.
8. According to the fishermen, some fishes are already disappeared, many fish species are threatened with extinction, and other fishes whose numbers have been reduced over the years. There are also examples of arrival of new fish species, invasion of exhortic species and reappearance of some others that are thought to be extinct in their

territorial right. Apart from the fish stock depletion, the amount of phytoplankton in the ocean has been reduced; their appearance is delayed than usual. Irregularity is a key feature. This information is unavoidable to document climate change conditions.

9. As a result of these changes, they are not able to catch fishes with their traditional fish equipments and small boats and they are forced to travel distance places, which is too risky, more expensive and far too efficient.
10. Because of the human interventions from 'others' and coastal urbanisation by successive Governments are made without fishermen's consent and consultation, the coastal villages experience sea erosion and sea accretion. All these affect their socio-economic conditions.
11. There are issues around Mukkuva community's religious identity and caste identity or socio-cultural identity. Colonial and Catholic Church influences are visible in almost all levels of their socio-cultural-religious settings.
12. One of the key limitations of the case study is that women participation is very less and their contributions are not materialised. Women's livelihood experiences are not much collected and collated for this report.

Background

This report is about the case study of Mukkuva Community in South India. This contains the outcomes of two follow up local meetings that conducted in Thiruvananthapuram (also called Trivandrum), Kerala during 2016 August-September, which is participated by traditional fishermen (*Chelaalikkoottam*, literally fishermen elder groups) and academic people from the coastal fishing communities in Trivandrum and Kanyakumari (Tamil Nadu). The local meetings are a respond to the UNESCO-IPBES regional workshop held in Chiang Mai, Thailand in June 2016. The discussions were focussed upon the local and indigenous knowledge (ILK) of marine biodiversity and the sea and the coastal environment together with the cultural and linguistic diversity that is featured with socio-religious history and the language of the Mukkuva and other related communities.

Mukkuva (r) is a traditional fishing community officially termed as Latin Catholic Mukkuva or more recently Latin Catholic, which is a contentious issue. They are mainly located in the west coast of India. They constitute 42% of Kerala's traditional marine fisher folk with a population of about 200000 (0.2 million), spread around 30 fishing villages in the capital district of Trivandrum. The border district, Kanyakumari has 40 fishing villages belong to Mukkuvar. Until India's States Reorganisation Act, 1956 on the linguistic lines (for example, Malayalam and Tamil respectively), both districts were part of the princely state of Travancore. However, the Mukkuva community in both neighbouring state districts still continues their association with the common historical, religious, linguistic and cultural orientations. Most of these villages are densely populated, are a large settlement made up of a series of clusters. They are among the most disadvantaged, disaffected and economically "backward" communities in the state of Kerala and Tamil Nadu, whose source of living largely depends upon marine fishing and related industries. A unique feature of the Mukkuva community is that its oral language is different from the official languages of both Kerala and Tamilnadu. They speak mixture of both the regional languages. Another key aspect is that these fishermen's fishing practices are different from other neighbouring districts, which is characterised mainly by hook and line fishing that is based in seabed reef based ecosystems.

For the case study data collection purposes, two main meetings were conducted in Trivandrum, Kerala South India: 1) with ILK experts and practitioners in the capital city on 24th August 2016 and 2) with the local community representatives from various fishing villages in a local context on 11th September. The meetings were followed by a focus group discussion that participated by 15 people on 7th October and 6 key informant interviews during October. Socio-religious history of the community was the main theme of the focus group. A key feature is that all these participants are from and within the Mukkuva community. The key informants who have 30-70 years of fishing experiences were suggested by other community members and purposefully selected. The interviews were conducted individually according to the preferred time and place choice of the participants. All information was video recorded and relevant notes were taken into account. Ethical

procedures are followed. Relevant acknowledgement is made and confidentiality and security of data are ensured.

Data Analysis: The data were collated and coded according to the thematic framework that has initially developed for the purpose. As the database was huge and larger than expected, this report contains only the most important and relevant information on livelihood practices, socio-religious history and language and ecological knowledge of Mukkuva community in South India.

Socio-religious History:

The earliest record of information from ILK experts suggest that the whole South Indian inhabitants were grouped into five geographical landscapes, one of them is seashore or *neithal* and the people's main occupation was fishing, export business and related activities. The word Mukkuva is considered to be originated from "*mukku*" which is found in both Tamil and Malayalam languages meaning tip or corner. The people who live in the corner or the tip were known as Mukkuvar; they concentrated in a particular and more isolated locality. Some coastal historians attribute their origin with reference to Araya-Dravida Civilization.

The focus group data show that origin and history of the Mukkuva community is related to the ocean ecology and marine environment. There is a strong and deep interconnection between Mukkuvars' settlement in the coastal areas and marine environment and seabed ecosystems. Representation from the village for the study suggests that each village origin and formation is related to this interconnection with the sea and its bountiful resources. According to their sea expeditions or the findings of new ecosystem for fish catching purposes and seasonal changes, they expanded their settlements and started to build temporary houses near the coast. They considered the sea and open beaches as their common livelihood areas, so they did not own them as private as they commonly say that ocean would be there always and they were too. The participants view that this is one of the many reasons for their varied and different culture and economic practices such as poor saving and extravagance which has now become a huge problem for their survival. At the same time, people live in estuaries, promontories and cliffs have a different culture and history. All these suggest that ecological understanding is necessary when documenting human history.

Though there were a small group of native coastal community in these villages, a higher number of the present dwellers are commonly originated from Kanyakumari district of the present Tamil Nadu state. This emphasise the fact that both Trivandrum and Kanyamuri coastal districts have a common origin and ancestors in line with the specific features of the near-in shore and deep sea marine ecosystems in these two districts. Understanding of this may lead to ecological perspective of human history-how people and nature are connected. Such a discussion was one of the highlights of the focussed group discussion. However, the shoreline changes caused by both natural and largely coastal constructions badly influence the socio-economic conditions of the people here. Some villages lost their beautiful and long beaches.

A vast majority of Mukkuva community members mainly practise Christianity, predominantly Roman Catholic traditions, regionally termed as Latin Catholic rite. A mass religious conversion movement initiated by the Portuguese Christian missionaries during 1600's under the leadership of St. Francis Xavier is particularly significant in their religious practices. Most of the Mukkuva villages have some stories associated with the arrival of St. Francis and his religious mission. Since then they became part of an organised Catholic religion. Even after India's Independence up until 1955, a larger part of Mukkuva community was controlled by Portuguese Padroado system, according to the focus group participants. The system did not promote local and indigenous priests and the first local priest was selected from the richest family in one of the coastal villages. Most of the educational and health institutions were established only after the ordination of the local priests. There is a presence of sub caste identity within the community which is directly linked with the history of their religious conversion. For example, some villages were known as substations to the main village which is already a Christian village; there are limited marriage relationships between these different groups though these aspects are changing these days. There are also stories associated with signs of Christianity well before the arrival of European missionaries.

However, it does not mean that they have completely stopped their indigenous and traditional religious practices. They still believe in black magic, supernatural and inanimate beings, spirits and other extraterrestrial forces. They worship natural forces and legends; *Kadalamma* or the Mother Sea/Ocean is worshipped and sought blessings from for safety in the sea and abundance in fishing related occupations. Even some Christian practices indicate their religious history and tradition. They believe in multiple deities in the form of worshipping and celebrating saints and have preferences for believing particular deity while not excluding or disbelieving others or the love of a personal god or representational god is evident through their practice of *pathukaval* (village patron saint or sub patron saint) system. They have faith in the possibility of liberation and release (*moksha*). In their songs and mantras (*manthrams*), there are some references to Hindu gods namely, Shiva and others. Lighting a lamp during religious and marriage ceremonies, offering flowers before the images of deities (or Catholic saints), the boy's head shave likens the St. Antony's (*anthoniyarpiritham*), pilgrimage to Velankanni (an idol of Mother Mary) some days after the wedding or expectation of pregnancy, and the rituals associated with cremation of an adult and feeding people after cremation are some of the examples of their Hindu traditions.

Currently, the Mukkuva community is controlled and led by the Catholic (Latin) clergy; they represent most of the socio-political and economic forums regarding community affairs and their support, interests and in some cases their approval are sought after even by the Government and other organisations. Though modern education and English language are promoted by the Catholic Church in the community, some others highlighted the evidence that there were deliberate efforts to discourage education in the coastal communities during the period of Portuguese control. The local village parish priest is the main leader or ex-officio who looks after not only the religious aspects, but also the socio-economic concerns of the community including the management of educational institutions. Most of their village festivals are strongly influenced by the religious activities. Believe in many facets of Virgin

Mary is a noteworthy feature. Propagation of religion is very high and participation in religious activities is mandatory, they become more of a religious community.

However, some community members are sceptical about the concentration of power in the hands of Catholic clergy and the religious identity in the place of community identity which is closely connected to their ancestral roots. They cited that the Church establishments have not made any efforts to preserve and promote coastal language and culture; instead they try to demolish them and portray fishermen and their families as 'subaltern and uncivilized people' because of their indigenous characteristics. In many cases the local church forcefully levies a tax on the fishermen's revenue which is usually 5%. The right to collect tax, the *Kuthaka* (as locally known as) is auctioned and usually goes to someone better off and hands the money to the local church. (In the past under the Portuguese Padroado system, another type of tax system was practised, *shraapeeli kuthaka*. Shark fins were given to the church hierarchies, and the collection was sent to European administrations, there were stringent punishments were adopted if they were not adhered to this tax system.) This amount is usually spent for the local church's activities and constructions of buildings that mainly promote religious practices. Though with the strong opposition and resistance, some villages were able to stop such systems since 1980's, some of the community leaders still fight against this "cruel imposition" or "colonial practice" followed in some villages.

Livelihood Practices and language

Livelihood practices of Mukkuva community under the case study suggest that they use both net fishing, and hook and line fishing. Hook and line fishing requires a higher level of knowledge, skills and understanding. Their fishing practices show a deeper understanding of seabed morphology, seasonal variations, climatic conditions, astronomical objects and marine biodiversity of fish species. This is particularly the case when they are engaged in many forms of hook and line fishing through locating seabed ecosystems and assessing the underwater conditions and deploy an appropriate method of catching. As their knowledge, skills and understanding of seabed ecosystems improve a good number of fishermen travel distance places and make innovations in their fishing practices according to their expeditions and at the same time leaving others continue to engage their fishing activities in near-inshore areas. This reveals their nomadic characteristics and migrated history. This also suggests that as a community, they both protect traditional fishing and encourage innovations. The hook and line fishing is concentrated on rocky reefs and platform reefs revealing the fact that Trivandrum and Kanyakumari coasts are blessed with these particular ecosystems.

One of the main indigenous technologies of the fishermen is that *kanicham or kaniyam*. It can be considered as modern world GPS system and for this, fishermen use a triangular self calculated method that they assess simultaneously the reef based ecosystems (or seabed morphology), poll star (which is known as *kaniyavelli*, meaning the star for *Kanicham*) during night or *raakanicham* and identifiable objects in the land; hills and mountains, tall buildings or towers during day time. This shows their integrated knowledge of three important natural elements: ocean, land and the sky. They also build artificial reefs using

materials that are naturally available to them, but not plastic based or metal based materials since they identified that ocean bed reef ecosystems were destroyed by destructive fishing techniques by 'others'.

Evolution of fishing techniques and fishing equipments: Several fishing crafts and gears are employed; *Catamaram* which is made up of four (twig) woods tied together with coir ropes used for both sailing and rowing purposes, *vallam* which is a small boat or plank canoe. It is made up by seaming together several planks of jungle jack by coir ropes. *Vallams* are three types: *kettuvallam* (made of large logs of softwood) *ottathadi vallam* (literally single wood boat) and plywood or fibreglass boats that are introduced by a Belgium missionary. Out board engines were introduced in the later part of the years. They also use a variety of nets generally for the surface level fishing according the size and characteristics of a particular fish/es-for example, for anchovy's –they use anchovy net, for sardines, they use sardine net, for bigger fishes, they use different nets. For the bottom fishing, they mainly use different varieties of hook and line fishing technique and long line technique that uses main line with baited hooks attached at intervals by means of branch lines called snoods. This line is made from cotton yarn. Local trees skin and cell saps are used ensuring appropriate level of temper for the lining. This process is called “*uthiyiduka*” in the local language. Tamarind trees seeds were used to make stronger the sails for sailing purposes. These fishing techniques catch more of adult fishes than juvenile ones and protect seabed ecosystems and encourage sustainability. The following changes have happened since 1960's in their methods of fishing: nylon fishing nets are introduced in the place of cotton fishing nets, *choondakkayar* (traditional line) is replaced by *kankoose* (troll-the main line), natural bait is replaced by artificial bait, and sailing made of *odupa* becomes plastic based. The fishermen believed that it was not ethically right or cruelty toward the fishes catching them without giving prey/s or cheating them through artificial baits. They also have the history of resisting destructive techniques such as bottom trawling and ring seines.

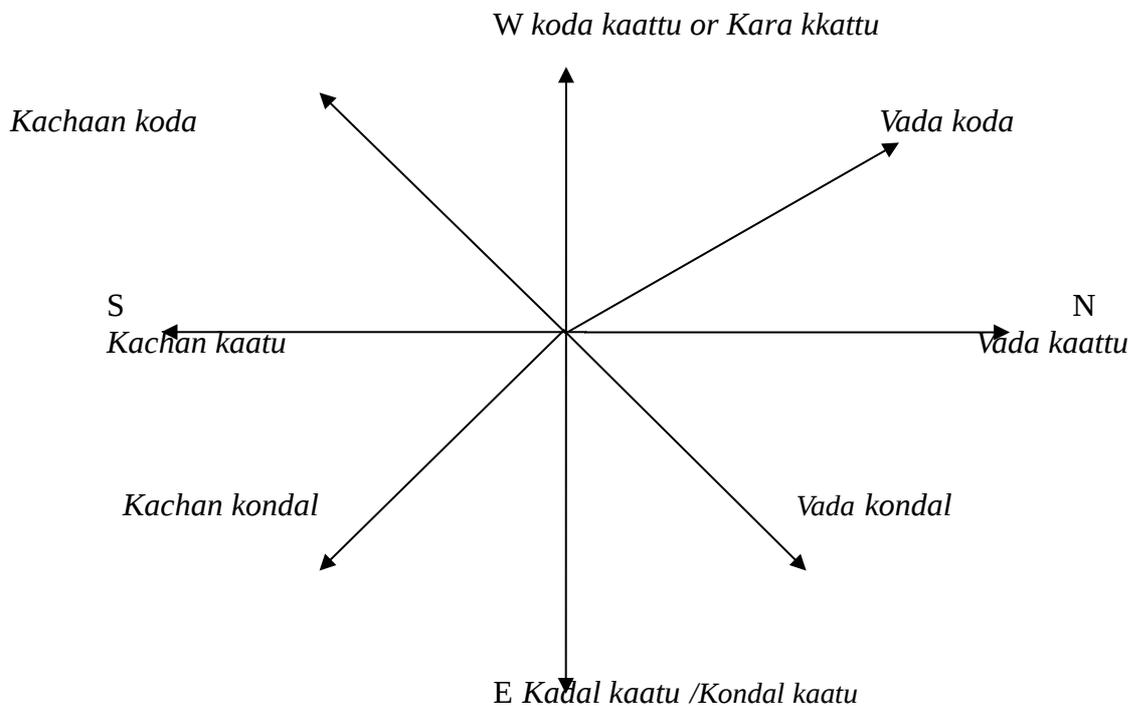
They acknowledge that there is a strong evidence for depletion of fish species; number of varieties of fish species has already disappeared, some of them are in the process of extinction, i.e, *parava-trevally*. Some fishes are new arrivals in their territorial rights i.e, *karikkadi*-a type of prawn and some others that fishermen used to catch within 20 meters depth, now it is available in about 200 meter depth i.e, *valaa-ribbons*. At the same time, some fish species that are thought to be extinct are reappeared recently. Planktons's occasional arrival have been reduced and delayed than usual, used to be in the middle of July, this year it was at the end of September. Some these are mainly caused according to the fishermen and community elders by some imported technologies such as bottom trawlers using Norwegian technology since 1960's that destroyed the marine ecosystems; licence to foreign ships since 1990's to use the marine resources in the Indian ocean encouraged over-fishing. Because of these changes, some fishermen have started to use bigger boats and higher horse power engines and bigger nets to increase their fish catch. They are forced to travel more distance places to search for fish concentrations. These influences are evident in numerous technologies in traditional occupations, in the architectural designs, the nuances of language and the food habits.

The Mukkuva community's language has the potential of revealing rich marine and coastal ecological and biodiversity data. A vast array of words is used to describe waves (*kadal*), wind (*kaththu*), ocean currents (*valivu*), astronomical objects (i.e. *velli* or *meen*, seabed ecosystems (i.e. *paaru*), directions (*mela* or *keela*) and many other ocean related knowledge.

The waves have many shapes and forms as described by fishermen. They are classified according to their source to various definite directions as *melaakkadal* (from the western/northern side), *keelaakkadal* (from the western/northern side), *nerukadal* (from straight ahead), *ottamedu* (single wave), *irattamedu* or *iranamedu* (double waves). During *melaakkadal*, there is phenomenon called *kadalvaayneettam*-giving more space to the shore. The fishermen say that the waves are commonly caused by winds or wind movements. Sometimes waves are also caused by the gravitation pull of the moon and the sun; they call tides (high tides and low tides-*veliyettam*, and *veliyirakkam*). The monsoon waves are rough and they can be extremely dangerous. Their description sounds the constant restless motion of sea water. This knowledge is very important to assess the threats and risks for fishing and ocean voyages.

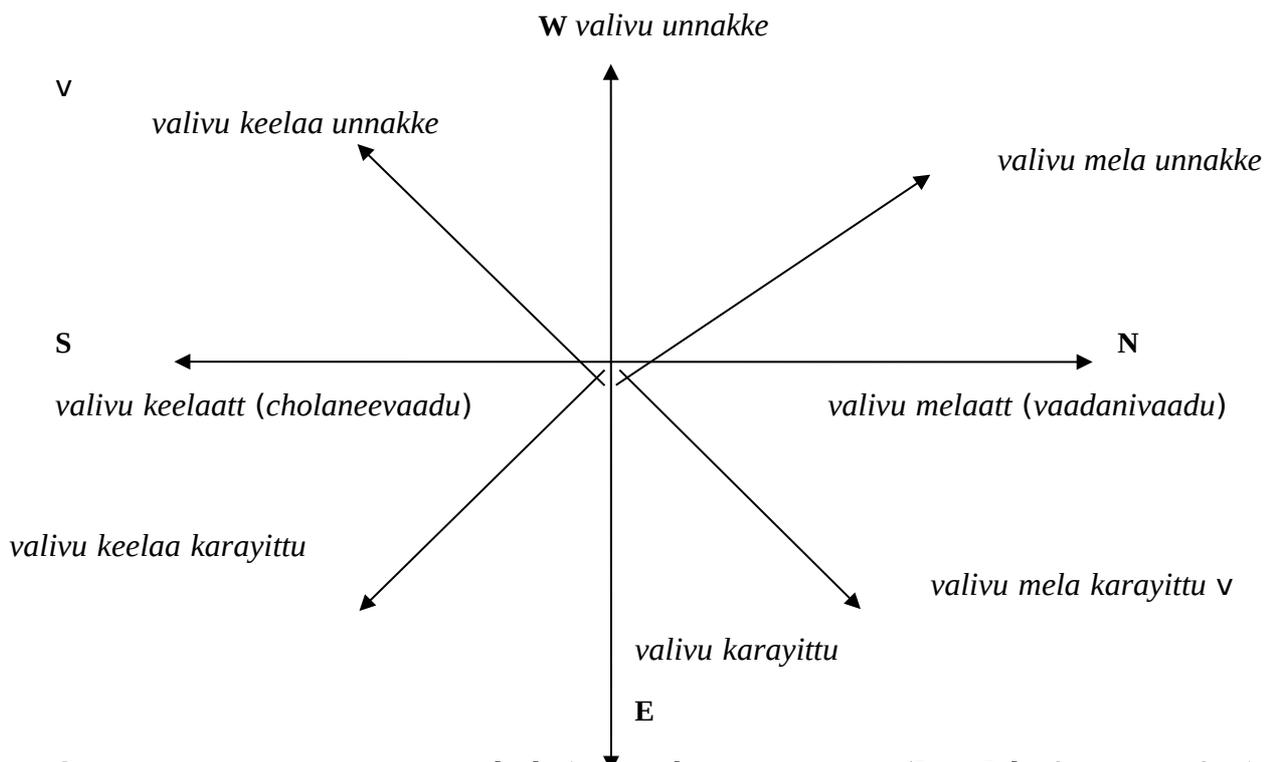
The fishermen categorise major winds or wind systems into 8 wind directions: a) *koda* or *kara kaatu* (towards the ocean/easterly wind or wind comes from the east), b) *kondal* or *kadal kattu* (towards the coast/shore or western wind or wind comes from the west) c) *Kachaan kaatu* (towards south, from the north) d) *Vada kaatu*, (towards north, from the south), e) *Kachaan Koda* (towards south west, from north east), f) *Kachaan Kondal* (towards south east, from north west) g) *Vada Koda* (towards north west, from south east) and h) *Vada Kondal* (towards northeast, from southwest the coast). This is represented in figure 1: Wind Systems.

Picture 1: **Wind directions**



The ocean currents (*valivu*) move mainly eight different directions: a) *unnakke* (towards the ocean), b) *karayittu* (towards the coast/shore) c) *melaattu* or *vaadanivaadu* (westward/eastwards) d) *keelaatu* or *cholaneevaadu*, (eastwards/northwards), e) *mela unnakki* (eastwards towards the ocean, f) *melakarayittu* (eastwards towards the coast) g) *keelaa unnakki* (westward towards the ocean and h) *keelaakarayittu* (westward towards the coast). The strong (or flow of ocean water is stronger than usual) current is called *uratha valivu*. A current which is called “*upperukkam vachu*”, from the east to west current, a very dangerous for *kattamarams* that ready for landing the shore. The graphical representation is given as figure 2: Ocean Current Systems. Ocean currents are also *keevalivu* (deep water currents) and *mevalivu* (surface currents). *keevalivu* and *mevalivu* can go different directions and some times in the same directions, if the *valivu* or water movements are in two different directions, they are known as “*valivu ivalivappettu*”. According to the fishermen, wind systems are one of the primary forces that makes the water moving or the motion of the ocean.

Picture 2: **Ocean currents**



Some ocean currents are seasonal; during south-west monsoon (June-July-August or *Aani-aadi-aavani*-Tamil Months), south-west monsoon winds move from the west to east (*cholanivaadu*). This time the sea and the coastal environment are comparatively cooler than other months. This season is known as *Kuluthi*, when the submarine water is the coolest. As a result, deep sea fishes are forced to move on the ocean surface and/or they try to look for warmer weather conditions in near-inshore. This phenomenon makes the fishermen to be able to catch more fishes than other months. The upwelling process is much visible in these days and that leads to *karaneeru* or planktons. Because of the large presence of planktons, they are

able to catch more fishes during this season. This could be one of the main reasons for their season commences with south-west monsoon or *Aani-Aadi* though the first month of Tamil calendar is *chithirai* (mid April-mid May) and Malayalam calendar is *Chingam* (August-September). Monsoon season is particularly featured with *kachaankondal* (wind movements from northwest to southwest) and *cholanivaadu* (ocean currents moves towards eastwards). However, these are changing for the last some years, for example, according to fishermen, the *karanneeru* usually visible in the middle of July, this year it happens at the end of September.

Planktons' aggregation is called *kadalkkarakal* and they are two types; *poonkara* and *karaneeru*. *Karaneeru* appears in the middle of July that gives the sign of demersals come up on the ocean surface and deep sea fishes come closer to the shore. The fishermen say that there are changes in the ocean water, ocean temperature, it becomes colder than usual time, upwelling in the higher stages and similar other factors. This understanding enables them to predict the type and volume of fish species and they are able to catch more fishes than usual period of time. January -March is the *poonkara* season which is featured with the presence of surface water fishes such as tuna, sardine and other similar types. *Kavaru* (Phytoplankton) is another type of plankton that would affect the fish catch and they shine during the night in the sea water.

Stars and astronomical knowledge: *araameen* (pleiades-this helps the fishermen to locate the landmark that helps them to find out their way back to the coast, *malameen* or *malayaameen* (Spica-this particular star appears in the sky at around 11 pm and 3 am that helps them to identify a particular ecosystem where multitudes of *chemeen* fishes), *mulakkaameen* (*muzhakkol*) orion belt-a group of 3 stars (rises on 10th Chithira, the first month of Tamil Calendar). This signifies a rough sea, strong wind, and likely very dangerous and risky weather conditions for the fishing and naturally they are discouraged not to go for fishing. The sun and the moon influence the ocean weather conditions. During the full moon, the fish catch is comparatively less when the fishermen usually take a break. According to them, this astronomical knowledge is very essential for the livelihood and helping them to navigate, understand the behaviour of the sea, and fishing according to weather conditions and reach their original destination and source of departure.

Apart from what is mentioned earlier, they also have some other different seasons with reference to the availability of fish production such as *keelaameenu* (when fishes come from southwest), *melaameenu* (when fishes come from northwest), *thelivunaalu* (when it is water is visible and found less planktons) and others. The person who has tremendous and higher level of knowledge about the seabed ecosystem, winds, seasons, currents, physiological factors, astronomical knowledge, behaviour of the fishes and the sea and similar other aspects is known as *chelaali*. The fish catch and income from fishing depend upon the presence of *chelaali* in each fish gears or boats.

Conclusion

In short, feeling among the community participants that the efforts should be there to bring back the lost glory of the community (i.e. community cohesion and unity) and therefore more such discussions and dialogues should be continued. An issue is identified that there is a high

brain drain from the community. This means that people who are able to contribute to the community are leaving the community citing they are not happy with the social identify of with the community.

Bibliography

<https://earth.usc.edu/~stott/Catalina/Oceans.html>

<http://oceanservice.noaa.gov/facts/current.html>

<http://www.cwb.gov.tw/V7e/knowledge/encyclopedia/me012.htm>

<http://www.nio.org/>

<http://oceanservice.noaa.gov/facts/oceanographer.html>

<https://www.seafirst.nl/en/visie/>

<http://www.mediaservices.international/>