CIBA Special Publication Series No.72

Handbook on

INDIGENEOUS TECHNICAL KNOWLEDGE AND BELIEFS OF COASTAL FISHERS AND TRIBES IN TAMILNADU

B. Shanthi, P. Mahalakshmi and V.S. Chandrasekaran

August 2014

केन्द्रीय खारा जलजीव पालन अनुसंधान संस्थान
(भारतीय कृषि अनुसंधान परिषद्)
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INDIGENEOUS TECHNICAL KNOWLEDGE AND BELIEFS OF COASTAL FISHERS AND TRIBES IN TAMILNADU developed by CIBA is based on the work carried out under the Indian Council of Social Science Research (ICSSR) (4082) project entitled 'Assessment on the impact of environmental changes on the livelihoods of coastal women in Tamilnadu'.

AUGUST 2014

PREFACE

Women in coastal villages face challenges due to the climatic and environmental changes or impacts particularly related to the adjacent sea and their resources. The coastal fishers and tribes of Tamil Nadu possess a rich knowledge with respect to climate and environmental changes and their impact on fisheries and aquaculture sectors, beliefs on consuming fishes/animals /plants, knowledge on culture of ornamental fish, crab collection and fattening, innovative farm- made feed for seabass nursery rearing in hapas, polyculture trials of the mud crab (*Scylla serrata*) and the Asian seabass (*Lates calcarifer*), polychaete worm and molluscan collection, jelly fish processing and mushroom consumption by tribals.

The Central Institute of Brackishwater Aquaculture (CIBA) has been working for the past 14 years towards the empowerment of the coastal and tribal women belonging to fisher and non-fisher communities with the technologies developed by the institute and making them adoptable, for their self-sustenance due to effects of environmental changes in the coastal areas. Now it has taken a new initiative under the project sponsored by the Indian Council of Social Science Research (ICSSR), New Delhi, to study the indigenous technical knowledge and beliefs of coastal fishers and tribes in Tamilnadu and document the same as an handbook.

I congratulate Dr. B. Shanthi, Principal Scientist & PI of the project, Social Sciences Division and her team of Scientists Dr. P. Mahalakshimi and Dr. V.S. Chandrasekaran for their painstaking efforts in bringing out this publication. I hope that this handbook brought out by CIBA will help the development agencies to make use of this rich treasure house of indigenous wisdom of fishermen, women and tribals which will serve as a tool to modern scientific methods of adapting and mitigating the climate and environmental changes. Incorporating indigenous knowledge and beliefs into climate change policies can lead to the development of effective mitigation and adaptation strategies, that are cost-effective, participatory and sustainable. This will, thereby, improve the socio economic status of coastal population and strengthen the position of women and disadvantaged groups during environmental changes and its threats.

Dr. C. GOPAL
DIRECTOR (ACTING)

CONTENTS

HANDBOOK ON INDIGENOUS TECHNICAL KNOWLEDGE AND BELIEFS OF COASTAL FISHERS AND TRIBES IN TAMILNADU

1. INTRODUCTION

The coastal fishers and tribes of Tamil Nadu possess a rich knowledge with respect to climate and environmental changes and its impact on fisheries and aquaculture sectors, beliefs on consuming fishes/animals /plants, knowledge on culture of ornamental fish, crab collection and fattening, innovative farm-made feed for seabass nursery rearing in hapas, polyculture trials of the mud crab (*Scylla serrata*) and the Asian seabass (*Lates calcarifer*), polychaete worm *(nereis)* and molluscan collection, jelly fish processing and mushroom consumption by tribals. The fishermen, women and tribals have made use of this rich knowledge and beliefs in their day to day fishing and livelihood activities and also to reduce vulnerability during climate and environmental changes. The rich treasure house of indigenous wisdom of fishermen, women and tribals serve as a tool to modern scientific methods of adapting and mitigating the climate and environmental changes. Incorporating indigenous knowledge and beliefs into climate change policies can lead to the development of effective mitigation and adaptation strategies that are cost-effective, participatory and sustainable. Fishermen and women pointed out that though climate change is one of the reasons for declining fish catch, over fishing by using imported engines and mechanized trawlers and exploitation of juvenile fishes are the major reasons for declining fish catch. The fish production in certain areas is almost non-existent after tsunami. Reasons are that after tsunami, the rocky habitats have disappeared from the fishing areas. All the freshwater bodies are blocked by the construction of dams and other structures and freshwater flow to the sea is hampered. Consequently, nursery grounds for prawn and fishes are disappearing resulting in stock reduction.

Presently, the fishers are unable to comprehend the surface water current flow directions in the shallow coastal areas, particularly in their fishing areas, as it is very irregular and unpredictable. Hence, they are unable to plan their fishing activities based on the climatic conditions. Mechanized trawlers and gillnetters are the more vulnerable sections for weather related problems. Fishers suggest safe exit is the good adaptation option for any weather related problems in the sea. Most of the fishers are interested to take weather related insurance with their own money (Robinson and Herbert 2001; Hunn,1993)

Indigenous Technical Knowledge (ITK) is the local knowledge that is unique to a given culture or society. ITK is the information base for a society, which facilitates communication and decision making. Indigenous information systems are dynamic and continually influenced by contact with external systems (Warren, 1991). ITK with respect to climate change in fisheries can be operationalized with the knowledge/cognitive capital of the fisherfolk in prediction/forecasting of various weather parameters and prediction of different types of fish availability and their catch based on their mental models with respect to various perceived changes in the weather parameters (Raygorodetsky, 2011 and Sathiadhas *et. al.* 2012).

Interactions with the informants

ITK is specifically concerned with actual application of thoughts of the local people in various operations of agriculture and allied areas. Belief comes from change in behavior of insects, animals and vegetation forecasting an event without any scientific rational but is true in happening. In the emerging global knowledge economy, a country's ability to build and mobilize knowledge capital, is equally essential for sustainable development as the availability of physical and financial capital. It encompasses the skills, experiences and insights of people, applied to maintain or improve their livelihood. The ITK is developed and adapted continuously to gradually changing environments and passed on from generation to generation and closely interwoven with people's cultural values. ITK is also the social capital of the poor, their main asset to invest in the struggle for survival, to produce food, to provide for shelter or to control of their own lives (Swathi *et al. 2013).*

In this document, the selected coastal fishers and tribal beneficiaries in the coastal villages of Tamil Nadu *viz.*, Tiruvalur, Kancheepuram, Cuddalore and Nagapatinam have expressed the opinion that major environmental changes have occurred post-tsunami. Wind direction, its speed, current, rainfall, seawater invasion into coastal villages and fish availability are the major climatic and environmental parameters that have impacted fisheries and aquaculture. The coastal fishers and tribes through their knowledge and beliefs have observed noticeable changes in fisheries and aquaculture sectors and consequently the impact on coastal livelihoods and other allied fishing activities.

2. METHODOLOGY

Under the Indian Council of Social Science Research (ICSSR) funded project, documentation of the indigenous technical knowledge and beliefs was carried out with respect to climate and environmental changes and its impact on fisheries and aquaculture sectors, beliefs on consuming fishes/animals /plants, knowledge on culture of ornamental fish, crab collection and fattening, innovative farm-made feed for seabass nursery rearing in hapas, polyculture trials of the mud crab (*Scylla serrata*) and the Asian seabass (*Lates calcarifer*), polychaete worm *(nereis)* and molluscan collection, jelly fish processing and mushrooms consumption by tribal in Tamil Nadu. This study was conducted from November 2012 to June 2014 and data were collected from 200 respondents including coastal women, men and tribals in four coastal districts *viz.*, Tiruvalur, Kancheepuram, Cuddalore and Nagapatinam of Tamil Nadu. A well structured interview schedule, Participatory Rural Appraisal, use of key informants and focused group discussions and interactions were the tools used to collect the information.

Collection of information from beneficiaries

Collecting information from the village head

3. INDIGENOUS TECHNICAL KNOWLEDGE

3.A. INDIGENOUS TECHNICAL KNOWLEDGE OF COASTAL FISHERS AND TRIBES OF TIRUVALUR, KANCHEEPURAM, CUDDALORE AND NAGAPATTINAM DISTRICT, TAMIL NADU

1. When sea is calm, fish availability is more (Kancheepuram & Tiruvallur dt.)
2. Less fish will be available when the sea is rough and blue in colour (Cuddalore dt.)
3. When wind blows from east to seashore, fish availability is more (Nagapattinam dt.)
4. Fish availability is more around new moon period (*Amavasai)* (Kancheepuram & Tiruvallur dt.)
5. Presence of sea gull over the water surface indicates fish school (Kancheepuram dt.)

White Sea gulls over water surface near Kadapakkam, Kancheepuram dt.

6. When seawater becomes turbid during rains, fishes are not visible (Nagapattinam dt.)
7. When the feet sink into the beach sand while walking along the sea shore indicates impending cyclone (Kancheepuram dt.)
8. More water currents are observed when halo occurs around moon (Pulicat, Tiruvallur dt.)
9. Appearance of dragon flies (Thumbi in Tamil) flying in groups over water surface indicates the arrival of storm / cyclone (Pulicat, Tiruvallur dt.)
10. Butterflies in group can be observed before the cyclone (Pulicat, Tiruvallur dt.)
11. It indicates impending cyclone, when bubbles appears on the sea surface (Cuddalore dt.)
12. It indicate higher speed of wind when the sea colour changes from green to white (Pulicat, Tiruvallur dt.)

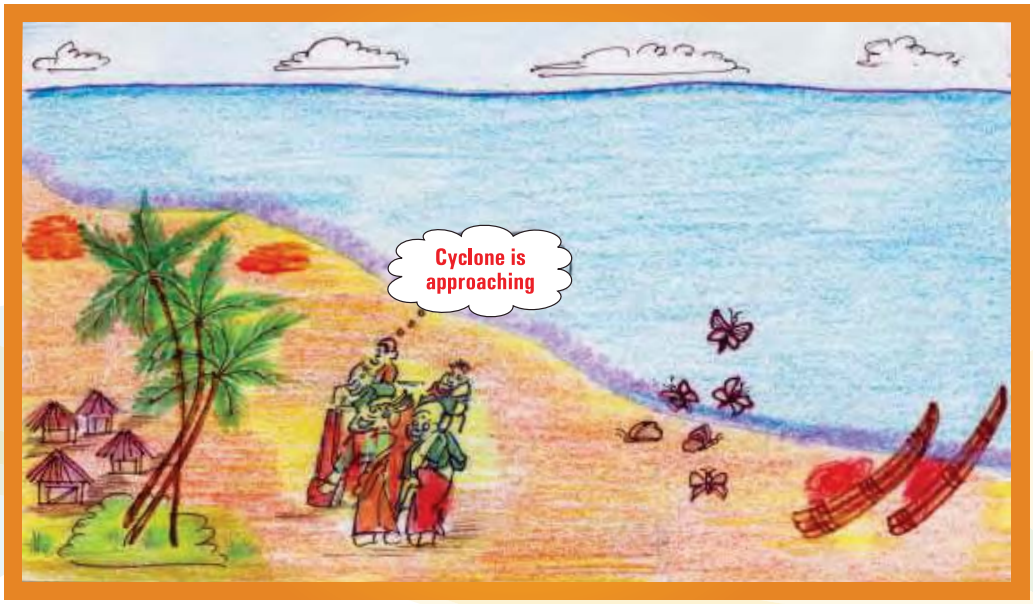
ITK.2: Less fish will be available when the sea is rough and blue in colour (Cuddalore dt.)

ITK.4: Fish availability is more around new moon period (*Amavasai)* (Nagapatinam, Cuddalore dt.)

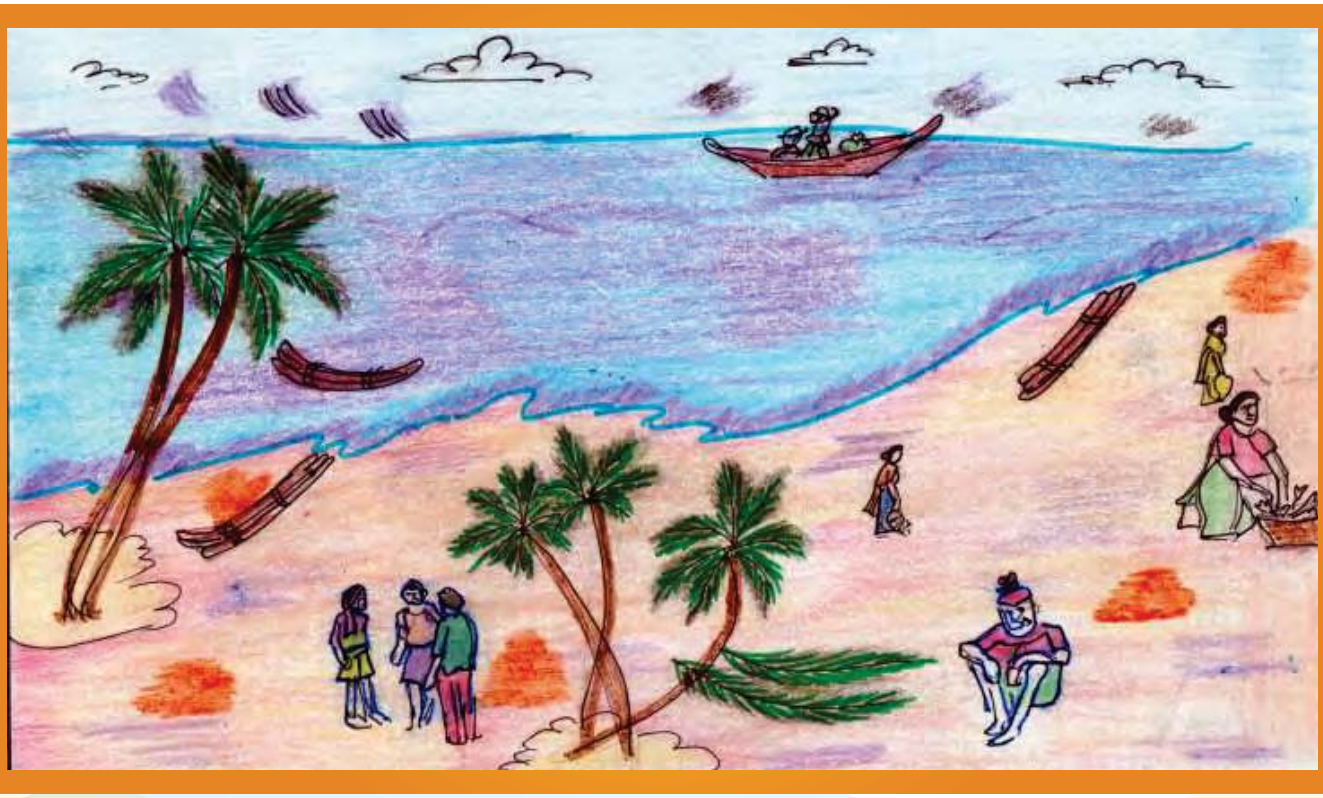
ITK.5: Presence of sea gull over the water surface indicates fish school (Kancheepuram dt.)

ITK.8: More water currents are observed when halo occurs around moon (Pulicat, Tiruvallur dt.)

ITK.9: Appearance of dragon flies (Thumbi in Tamil) flying in groups over water surface indicates the arrival of storm / cyclone (Pulicat, Tiruvallur dt.)



ITK.10: Butterflies in group can be observed before the cyclone (Pulicat, Tiruvallur dt.)



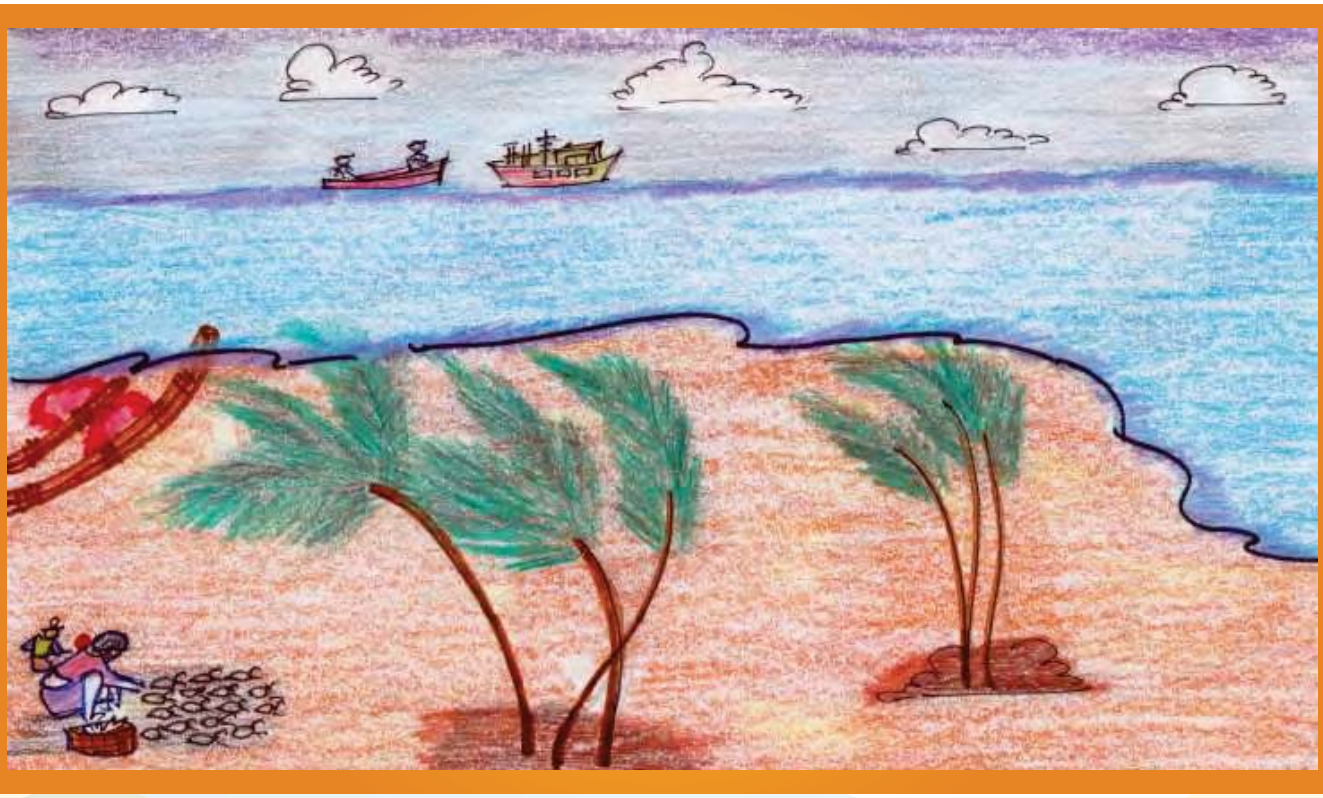
ITK.12: It indicates higher speed of wind when the sea colour changes from green to white (Pulicat, Tiruvallur dt.)

13. Presence of white clouds in the sky indicates high wind speed (Cuddalore dt.)

White clouds near Cuddalore dt.

14. Appearance of sea snake rolling itself like a ball deep inside the sea is an indication of cyclone (Pulicat, Tiruvallur dt.)
15. Appearance of foam of water near the sea shore, is an indication of approaching cyclone (Nagapattinam dt.)
16. When cows/goats break their noose rope and run towards an elevated area and when household reptiles including other reptiles are also seen to come out from their burrows and nest and run outside, it is and indication of cyclone, flooding, earthquake and tsunami (Nagapattinam dt.)
17. When wind blows in one direction it is an indication of more fish availability (Cuddalore & Kancheepuram dt.)
18. When the sea water and lake water exhibit a greenish tinge it indicates more fish availability (Pulicat, Tiruvallur dt.)
19. Gathering of birds over sea / lake surface, indicates availability of fish in that region (Kadapakkam, Kancheepuram dt.)

Birds gathering over sea / lake surface indicates fish availability



ITK.13: Presence of white clouds in the sky indicates high wind speed (Cuddalore dt.)

ITK.16: When cows / goats break their nose rope and run towards the land side and when household reptiles including other reptiles are also seen to come out from their burrows and nest and run outside, it is and indication of cyclone and flooding (Nagapatinam dt.)

20. More fish catch obtained during spring tide (Nagapatinam dt.)
21. Circular movements of birds over the sea surface indicates the arrival of cyclone (Pulicat, Tiruvallur dt.)
22. Fish migrates to deeper water as temperature increases (Pulicat, Tiruvallur dt.)
23. Occurrence of small fish catch will be more when heavy rains are followed by calmer days (Pulicat, Tiruvallur dt.)
24. Very less fish will be available when the water is very clear (Cuddalore dt.)
25. Fish abundance is high when water currents are mild (Nagapattinam dt.)
26. Availability of jelly fish in the coastal water during summer months results in reduced catches of important marine fishes (Pulicat, Tiruvallur dt.)
27. Fishy odour at sea indicates less fish availability (Pulicat, Tiruvallur dt.)
28. Fish catch is found to be more during the months of July – August, when the wind velocity is high (Cuddalore dt.)
29. During strong winds, fishes migrate from shallow to deep water (Nagapattinam dt.)

ITK.20: More fish catch obtained during spring tide (Nagapatinam dt.)

ITK.21: Circular movements of birds over the water surface indicates the arrival of cyclone (Pulicat, Tiruvallur dt.)

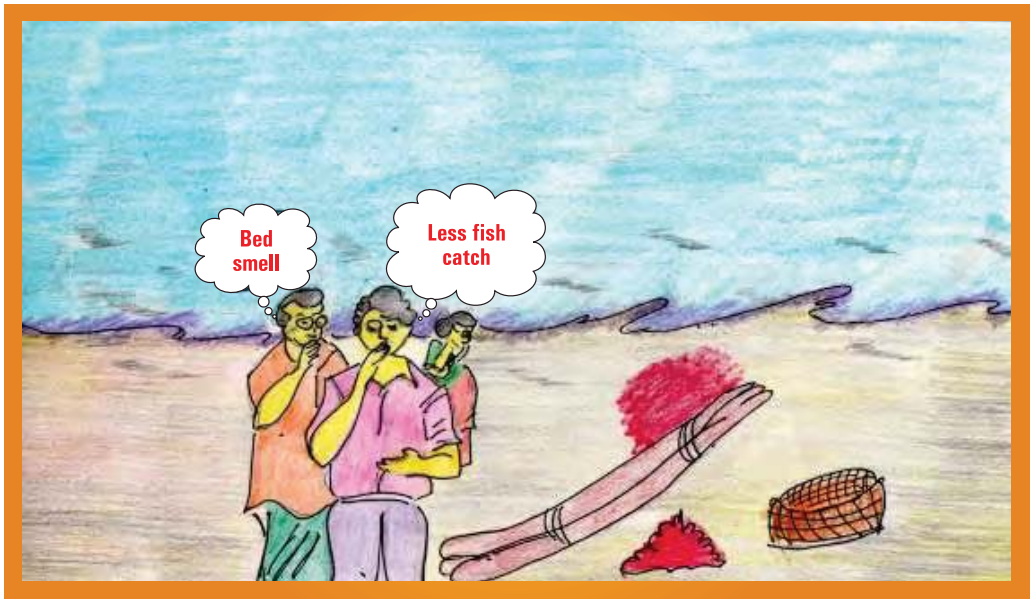
30. Good catch is obtained during windy season (Cuddalore dt.)
31. When seawater or lake water is black or green in colour - more fish catch (Pulicat, Tiruvallur dt. & Cuddalore dt.)
32. If seawater level rises, chillness will increase – less fish catch (Nagapattinam dt.)
33. When more sea snakes (*kadal pambu*) occupies the particular fishing ground – no fish catch (sea will be very rough) (Pulicat, Tiruvallur dt.)
34. During rainy season, salinity is less in seawater and lake water, this enhances good catch (Cuddalore dt. & Kadapakkam, Kancheepuram dt.)
35. During July – August the rain (known as *Aadi mazhai)* occurs resulting in an increased reproduction of fish, crab, snake and bird (Kancheepuram dt. & Pulicat, Tiruvallur dt.)
36. Fish like catla and rohu make noise during the breeding time (Kancheepuram dt.)
37. After the rains there will be good catch of fish (Nagapatinam dt.)
38. During month of october - november there will be good catch of fish (Kancheepuram dt.)
39. Increase in catch of crustacean resources are observed with an increase in temperature (Kancheepuram dt.)
40. During the summer month there is increased catch of squids (Kancheepuram dt.)

ITK.22: Fish migrates to deeper water as temperature increases (Pulicat, Tiruvallur dt.)

ITK.23: Occurrence of small fish catch will be more when heavy rains are followed by calmer days (Nagapattinam dt.)

ITK.24: Very less fish will be available when the water is very clear (Cuddalore dt.)

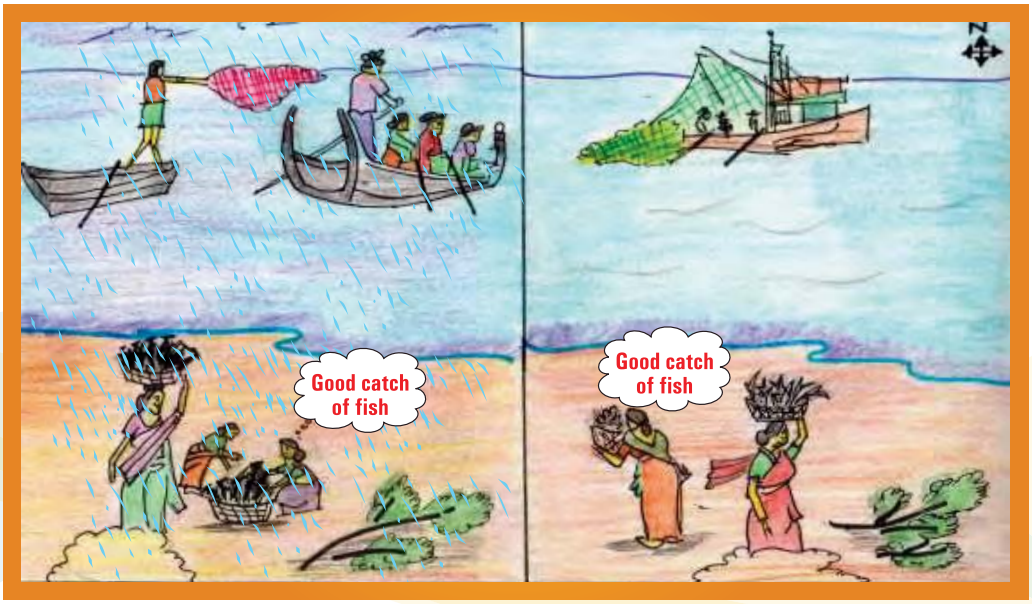
ITK.26: Availability of jelly fish in the coastal water during summer months results in reduced catches of important marine fishes (Thonirevu village, Pulicat, Tiruvallur dt.)



ITK.27: Fishy odour at sea indicates less fish availability (Pulicat, Tiruvallur dt.)

ITK.28: Fish catch is found to be more during the months of July – August, when the wind velocity is high (Cuddalore dt.)

ITK.30: Good catch is obtained during windy season (Cuddalore dt.)



ITK.37: After the rains there will be good catch of fish (Nagapatinam dt.)

ITK.38: Increase in catch of crustacean resources are observed with an increase in temperature (Pulicat, Tiruvallur dt.)

ITK.39: During summer month there is increased catch of squids (Kadappakkam, Kancheepuram dt.)

3.B. BELIEFS ON CONSUMING FISH

3.C. OTHER BELIEFS

(1) Noise made by birds

Birds when they make an unusual noise indicates an enemy in the vicinity. This also helps the hunter to locate the prey.

(2) Consuming May fly (*Eesal*)

May fly (*Eesal*) is collected from ant hill (*puthu*) and its collection is believed to be sacred by irular tribals. In the night time they go for may fly collection. A deep pit is dug around the ant hill and prayers are performed at the ant hill and a wild leaf powder known as *Kongee* is spread over the ant hill, due to which the may flies inside the ant hill come out and fall in the pits which are later collected by the tribals. There are 4 types of *puthu* found and the space inside a *puthu* is sufficient for a person to hide. There are no compartments inside the *puthu*. The season for May fly is July - November. It is consumed by the tribals by mixing with rice, savories and dhal. If the heap of may fly come by making hissing noise it denotes that there will be rain for the year. If the heap of may fly comes in upside down position, it denotes that there will be no rain for the year. Consuming may fly is believed to give fat to the body, to improve WBC count, control blood pressure and diabetis; and also good for anemic patients as it improves the blood iron levels.

(3) Consuming frogs

Frogs of different types namely *Iyya* yettu is (believed to be poisonous), Jumbo, the big frog (only the legs are delicacy), Green frog (believed to cure asthma disease) and Kannapan frog are used for human consumption. The Kannapan frog consumes lot of May flies and the intestines are cleaned and the may fly in the intestines of the frog and thighs of this frog are consumed as delicacy. These frogs are collected and sold for Rs. 4/- each. These frogs are also purchased by foreigners who visit Chennai for food.

(4) Consuming snakes, monitor (*Udumbu*) and rats

Consuming snakes like *Sarai pambu* is believed to give good strength to body, good for curing sexually transmitted diseases. The fat of snake is given to hunter dogs and also fed to cows for strength. The snake's fat is used to treat the wounds found on the Ox's neck. The rattle snake (*manooli pambu*) is believed to cause leprosy when it touches the body of the human being. Consuming monitor (*udumbu*) is believed to give good strength to human body.

Field rat (*varappu eli*) collects the grains from the paddy field and stores them inside the rat hole, which is having many storage space as compartments. The irular tribals search these rat holes, collect the stored grains and bring them home. Nearly ½ - ¾ kg of grains can be collected from each hole. This is washed and boiled for human consumption. Hence, field rat is believed to be their goddess. This helps them to overcome hunger during the time of starvation. Rats named *valli eli*, *billi eli* and *vaarapu eli* are consumed to reduce body heat and also given to women immediately after their delivery of babies.

(5) Consuming other animals

Tortoise and snails are believed to control constipation in human beings and help in curing cracks on the feet. Squirrels when consumed are believed to make the human skin tight. Rabbit and mongoose meat are believed to control body heat and helps the body to gain disease resistance.

6) Consuming plant roots and leaves

Kattu valli root

Controls body heat and consumed for its taste

Kotti root

Controls body heat and consumed for its taste

Chitti root

Controls body heat and consumed for its taste

Thamarai root & _Alli_ root

Controls body heat and consumed for its taste

Chitulangu **root**

Quench's thirst

Thanimoota **root**

For good urination and believed to control kidney problems

Chiriya nangai

Cures cobra bite

Karakodi **root**

Mixed with idli and dosai dough for taste, used for burns on feet

Karatta **root**

Controls gas formation

Periya nangai

Cures snake bite, treats witchcraft problems

3.D. OBSERVATION OF TRIBES DURING CULTURE OF ORNAMENTAL FISH

Tribal women in ornamental fish culture

I. Observations on ornamental fish

Ornamental fish	Observations
 FIGHTER	Fighter Male and female fish are kept in the same bottle. The male will change its colour while mating. A piece of thermocole is kept in the bottle. The fin of male will touch the female. Female fish will fight with male fish. Male and female fishes will sputter out bubbles on the thermocole kept in the bottle. Female fish will lay eggs through abdomen by standing steady. Male fish will collect the eggs in its mouth; the female fish will go away from the male. The male fish will keep the egg in its mouth for 3 days or more till the eggs are fertilized.
 BLUE MORPH	Blue Morph Male fish will shake its fin and female fish will shake its fin and lay eggs. Female fish will take the eggs in its mouth and avoid taking food. For 10 - 15 days it will stay alone and on the 11th day it will leave the newly hatched young ones of the fish outside
 ANGEL  OSCAR	Angel & Oscar male and female fish will clean the tank and remove all the algae and keep it ready for reproduction. Female fish will lay the eggs on the side of the glass tiles. Male fish will move to the dorsal side of the female fish. Both male and female fish will fan the eggs. While fanning, the eggs which change into white colour will be discarded and colorless eggs will be protected by both male and female fishes. It will attack when disturbed. It will change the egg places three times within 25 days of period. Both male and female will stand on both sides and guard their young ones.

Ornamental fish	Observations
 TILAPIA	Tilapia male and female fishes will keep the young ones in their mouth and guard them for 4 days
 FLURON	Fluron female fish is liked by the male fish it will not mate with the female. The female fish will lay its eggs in the center of the tank. Both will take care the young ones. When the young ones are separated from the parents, the male and female fish will fight with each other. To avoid this, a piece of glass is kept in-between the male and female fish. After a week period again they will start mating.
 GOLD  KOI CARP	Gold & Koi Carp female and male fish are left in the tank as 1: 2 ratioHorse tail plants are kept inside the tank as hideouts. In the morning,it will lay eggs and the female will not take care of the young ones. Once the eggs are laid, the female will keep moving in-between the eggs by waving its fins. Adults should be removed on the 4th day. Otherwise they will swallow the young ones. White coloured eggs are considered to be sterile and will not get fertilized.

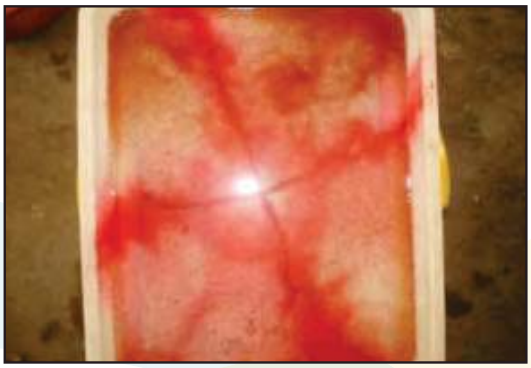
II. Innovative farm - made feed for ornamental fish

- Innovative farm made feed is prepared with the following ingredients like wheat, maida, ragi, hen egg, greens and cow brain. All the ingredients are mixed well and fed to the ornamental fish during the reproduction period, i.e., once in a month.

Planting of horse tail plants in fish tank by tribals

Processing of innovative farm made feed by tribal women

- Red worms are fed to adult ornamental fish for maturation.



Processing of red worms by tribal women

3.E. KNOWLEDGE ON CRAB COLLECTION AND FATTENING

- The following are the points of understanding and knowledge gained from their own experience during crab collection, crab fattening or farming by crab farmers and women self help groups of Tiruvallur and Kancheepuram district and tribals of Kulathumedu village, Tiruvallur district, Tamil Nadu.
- Understanding the crab's burrowing nature, the tribals have the knowledge of digging holes near the canal bunds for collection of wild crabs.

Tribal man collecting the wild crabs

- When the crabs are stocked in the pond, feeding is not done on the same day because the crabs will not feed on the same day due to stress.
- If there is insufficient feed,the crabs will fight with one another.

Tribal Women SHG in crab fattening

- If the crabs are hungry, they will climb the fence or roam on the bunds of the ponds.

Coastal women handling the harvested crab

- Once the crabs get the trash fish smell it will come out of the ponds.
- During full moon and new moon days, there will be more molting.
- Fishermen also believe that when crabs are purchased before and after new moon and full moon periods there will be more meat and also more tastier.
- During stocking and transporting of crabs, less feed should be given because due to stress, the intake of feed will be low.

Coastal women transporting the harvested crab

- The meat of fishes like tilapia, eel, cat fish, skate and ray are very much liked by the crabs.

Fish feed processing by men and women

- Hide-outs like baskets or broken pipes should be kept as shelters and hide-outs in places in the ponds for the protecting the water crabs during moulting.
- Mangrove plants are planted inside the crab fattening pens as hide-outs and breeding points for crabs during crab fattening.

Mangrove plants are planted inside the crab fattening pens by tribals

3.F. KNOWLEDGE ON INNOVATIVE FARM- MADE FEED FOR SEABASS NURSERY REARING IN HAPAS

Innovative farm-made feed is prepared with the following ingredients like wheat, maida, ragi and fish meat. All the ingredients are mixed well and fed to seabass fingerlings reared in nursery hapas by tribal women of Kulathumedu village.

Farm-made feed is prepared by tribal women self help of Kulathumedu village

3.G. KNOWLEDGE ON POLYCULTURE TRIALS OF THE MUD CRAB (*SCYLLA SERRATA*) AND THE ASIAN SEABASS (*LATES CALCARIFER*)

The following are the knowledge of tribals that they gained from their experience from polyculture trials of mud crab and seabass at Kulathumedu village. Coconut leaves are placed in the fish ponds during hot summer for shade and shelter for seabass.

- Crackers are burst to scare the birds and avoid them from entering into the pond to trey upon the fishes.
- Hide-outs made of bamboo baskets were kept at different places in the pond for the protection of water crabs during moulting in polyculture trials of mud crab and Asian seabass.

Hide-outs made of bamboo baskets

- Moderate sized thorny bushes and water plants are planted as hide- outs for seabass fingerlings during polyculture trials of mud crab and Asian seabass.

Thorny bushes and water plants

3.H. KNOWLEDGE ON POLYCHAETE WORM AND MOLLUSCAN COLLECTION

Sardine fish is crushed in water and sprinkled in the areas were the polychaete worms (*nereis)* are collected. The smell of the worms to come out of the in burrows facilitating easy collection.

Nereis collected by tribes at Cuddalore dt.

3.I. KNOWLEDGE ON JELLY FISH PROCESSING

During jelly fish processing, the coastal women of Thonirevu village, Pulicat, Thiruvallur District. experienced that diabetic patients or persons having injuries in their feet should avoid jelly fish processing because during jelly fish processing, alum salt and common salt are used for processing the jelly fish causing infection to the feet.

Jelly fish processing by women self help of Thonirevu village, Pulicat, Tiruvallur dt.

3.J. KNOWLEDGE ON MUSHROOMS CONSUMPTION BY TRIBALS

It is believed by the tribals of New Perungulathur, Kancheepuram district that consuming mushroom controls knee joint pains in humans. It is low in cholesterol and a good source of dietary fiber, protein and Vitamin D.

Tribal women in mushroom farming at New Perungulathur, Kancheepuram dt.

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Separation of clam meat by tribal man

Wild shrimp collection by fishers