

1. Title: Establishment of fish and shellfish health certification and disease surveillance laboratories in Tamil Nadu for enhancement of aquaculture production

2. Category: Fisheries science.

3. Challenge:

Major challenge in the shrimp /fish farming industry

- ❖ The major bottleneck in the shrimp/fish farming is the disease outbreak. The disease outbreaks cause severe economic losses to shrimp farmers. The major diseases that affect the shrimp culture are white spot syndrome virus (WSSV), Early mortality syndrome (EMS) and Enterocytozoon *hepatopenaei* (EHP). Apart from those diseases the vibrios pathogenic bacteria that can play a major role and causes a disease called white feces disease (WFD) which affects the shrimp farms after 30 days of culture particularly the farms which are not following proper treatment measures for influent water. It is very difficult to contain the diseases at the starting point itself. Since there was no diagnostic facilities and periodical monitoring for diseases. Rapid diagnosis of such diseases caused by pathogens like bacteria, viruses and non-infectious diseases caused due to unfavourable environment conditions, help to overcome major losses caused to the aqua farmers due to diseases outbreaks.
- ❖ Access to the disease diagnosis laboratory when there is an immediate need.
- ❖ Farmers will react only after symptoms of disease. Hence, it is mandatory to assess the environmental conditions that are unfavourable even before the onset of disease and create awareness among farmers to make ameliorative measures.

Based on the above facts it was planned to establish a disease diagnosis laboratory at TNFU Headquarters, Nagapattinam

4. Initiative:

Establishment of fish and shell fish health certification and disease surveillance laboratory in Tamil Nadu for enhancement of aquaculture production, Nagapattinam component (SC. No. 15-101-01).

5. Key result/insight/interesting fact:

Due to the establishment of the laboratory, periodical monitoring of disease status was carried out and the water sources were monitored periodically.

Insight – Due to the periodical monitoring of disease diagnosis the disease prevalence in the region was informed to the shrimp farmers

- ❖ Awareness meetings were conducted at village cluster level.
- ❖ Technical information was given to the farmers through technical meetings with high level technical expertise.
- ❖ Manuals with Good manufacturing practices were given to the farmers and pamphlets were issued regarding the diseases diagnosis laboratory at Nagapattinam.
- ❖ The periodical water quality monitoring in the creeks especially Muthupettai creek helped to identify the onset of disease and helped the farmers to save their crop.

Due to the continued:

- ❖ Disease diagnostic service.
- ❖ Periodical water quality monitoring of creeks.
- ❖ Awareness meetings conducted at village cluster level (Muthupettai).
- ❖ Technical updates with expertise

6. Impact:

The Lagoon Aqua Farmers welfare Association shrimp farmers, Muthupettai, Thiruvarur District, Tamil Nadu, India successfully doing shrimp farming without any disease outbreak though all the major shrimp farming regions were affected earlier due to severe disease outbreak.

Number of ponds saved from disease outbreak is 110.

7. Lessons Learned:

Periodical monitoring, disease diagnosis of suspected samples from shrimp farms at the earliest, providing technical inputs to the farmers for decision making, creating awareness meets periodically will help the farmers to overcome the disease problems and the huge economic loss will be averted.

8. Supporting Quotes:



**Establishment of Disease diagnosis laboratory at TNFU Headquarters,
Nagapattinam**



**Disease diagnosis lab opening by Dr.S.Felix, honourable Vice Chancellor,
TNFU, Nagapattinam**



**The shrimp farmers are brought to the disease diagnosis lab and informed
about the sampling protocols of diseased samples**

Pamphlets were prepared about the establishment of Disease diagnosis laboratory at TNFU Headquarters Nagapattinam to the shrimp farmers and Cluster and Association presidents and secretaries:



Mr. Pazanithurai, Secretary, Mallipattinam shrimp farmers association



**Mr. MKS Sethuraman,
President - Pamani cluster Shrimp farmers**

Periodical monitoring of creeks and other water sources:



Samples collected by the COPI of the scheme at Kattumavadi

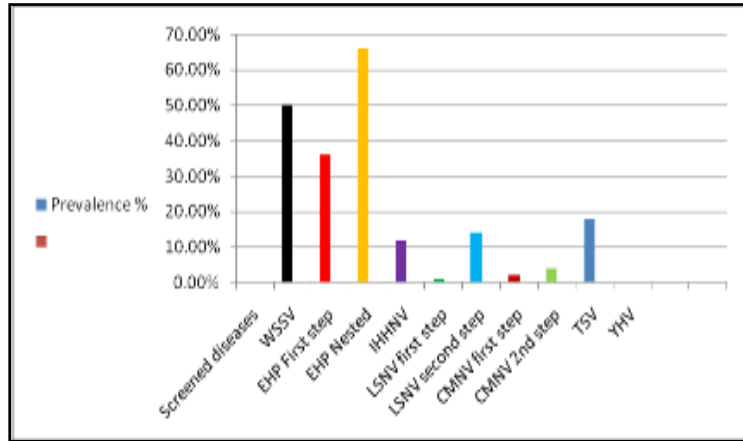


Samples collected at Tambikottai Vadagadu



Samples collected at Muthupettai

Disease prevalence in Penaeus vannamei farms in Nagapattinam and Thiruvavarur districts:



**TAMIL NADU FISHERIES UNIVERSITY
COLLEGE OF FISHERIES ENGINEERING
FIRST LINE BEACH ROAD,
NAGAPATTINAM – 611001
CREEK SAMPLE COLLECTION REPORT**

Area Name	PH	SALINITY (Ppt)	Co ₃	Hco ₃	TA	Hardness (Mg/l)	Cal/Hardness (Mg/l)	Mg (mg/l)	(NH ₃) (ppm)	Nitrate (ppm)	Nitrite (ppm)	Phosphate (ppm)	Iron (ppm)	Water samples			Soil samples		
														Plate count CFU/ml	TCBS CFU/ml		Plate count CFU/ml	TCBS CFU/ml	
															yellow	Green		yellow	Green
Muthupet tai 08.12.2017	7.9	33	12	140	152	6000	601	1093.5	0.5	10	0.1	Nil	0.3	545	460	113	565	50	-
11.11.2017	7.3	0.5	0	140	140	200	40.08	24.3	Nil	45	0.4	1.0	0.3	450	361	NIL	642	270	40
16.09.2017	7.6	41	24	98	122	8,000	881	1409	Nil	45	Nil	Nil	-	470	210	360	610	--	100

Awareness and technical meets with expertise in the field:



**Awareness meet conducted at TNFU Headquarters, Nagapattinam
Dr.S.Felix,TNFU, Nagapattinam delivering a lecture on advanced shrimp culture systems**



**Another awareness meet conducted at TNFU Headquarters Nagapattinam
Dr.S.Felix, honourable Vice Chancellor, TNFU, Nagapattinam explaining the farmers about the sampling protocols for PCR disease diagnosis**



Technical talk on disease updates given during the awareness meet by Th.T.Anand, Assistant Professor and COPI of the scheme, TNFU, Nagapattinam

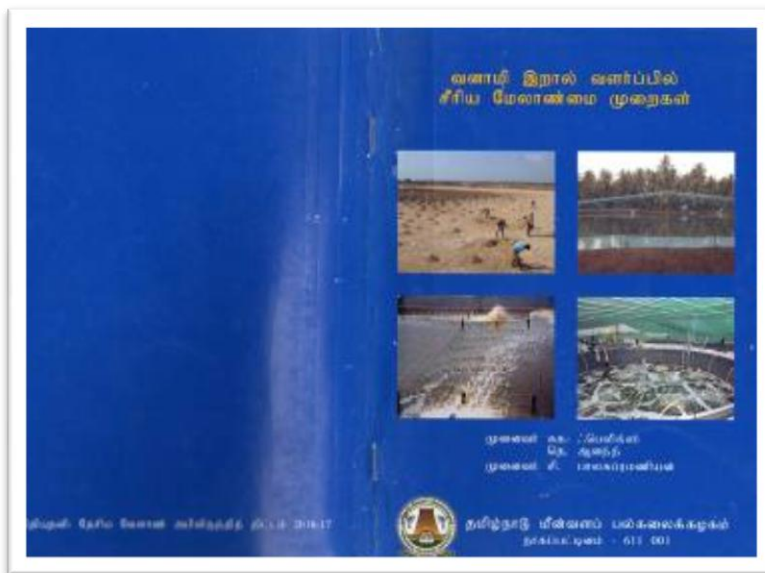


Regional cluster disease awareness meet conducted by Th.T.Anand, Asst.Prof. and CoPI of the scheme

Manual for technical knowledge in regional language:



A book entitled “Vanami iral valarpil seria melanmai muraigal” (in the regional language Tamil) was released by Dr.S.Felix, VC, TNFU, Nagapattinam and Mr.Venkataraman, MD, Sona Shrimp hatcheries receiving the first copy of the book, Dr.S.Balasubramanian, Dean, COFE, Nagapattinam and other farmers are also in the stage



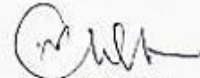
Cover page of the book entitled “vanami iral valarpil seria melanmai muraigal” funded by NADP

**Acknowledgement from the Lagoon Aqua farmers welfare Association Secretary,
Muthupettai:**

பயனாளிகளின் ஒப்புக்கை சான்று

(Acknowledgment from Secretary Lagoon Aqua Farmers' Welfare Society)

என்னுடைய பெயர் திரு.நா.செல்லப்பா, திருவாரூர் மாவட்டத்திலுள்ள முத்துப்பேட்டையில் சுமார் 25 வருடங்களாக இறால் வளர்ப்பு செய்து வருகிறேன். நான் தற்போது லக்ஷன் அக்வா .பார்மர் வெல்.பர் சொசைட்டியின் தலைவராக உள்ளேன். ஒவ்வொரு வருடமும் இறால் வளர்ப்பில் தமிழ்நாட்டில் உள்ள பெரும்பான்மையான இறால் வளர்ப்போர் பாதிக்கப்படுவார்கள். இந்த வருடம் தமிழ்நாட்டில் நீர் வாழ் உயிரின வளர்ப்பு உற்பத்தியை பெருக்குவதற்காக மீன் மற்றும் ஓடுடைய மீன்களின் ஆரோக்கிய சான்றளிப்பு மற்றும் நோய் கண்காணிப்பதற்கான ஆய்வகங்கள் அமைத்தல் என்னும் தேசிய வேளாண் அபிவிருத்தி திட்டத்தின் கீழ் நாகப்பட்டினத்தில் அமைந்துள்ள ஆய்வகத்திலிருந்து எங்களுடைய முத்துப்பேட்டையில் அமைந்துள்ள லக்ஷன் அக்வா .பார்மர் வெல்.பர் சொசைட்டியின் பண்ணைகளில் தொடர்ந்து நோய் கண்காணிப்பும் மற்றும் எங்களுடைய பண்ணைகளுக்கு நீர் வழங்கும் ஆதாரங்களை தொடர்ந்து கண்காணித்தும் வந்தனர். இதனால் பண்ணைகளில் நோய் ஏற்படாமலும் மற்றும் நீர் ஆதாரங்களில் நீர்தரக் காரணிகளைத் தொடர்ந்து கண்காணித்ததால் நோய் ஏற்படாதவாறும் தடுக்க முடிந்தது. நாங்கள் சுமார் 110 எண்ணிக்கையில் உள்ள வளர்ப்பு குளங்களை நோய் வராமல் பாதுகாத்து இன்றும் வளாமி இறால் வளர்ப்புச் செய்து வருகிறோம். தமிழ்நாட்டில் பிற பகுதிகளில் பெரும்பான்மையான இறால் வளர்ப்பாளர்கள் நோய் தாக்குதலால் பாதிக்கப்பட்டபோதும் இந்நோய் கண்காணிப்பு திட்டத்தின் தீவிர கண்காணிப்பு காரணமாக எங்கள் இறால் வளர்ப்பு குளங்களில் நோய் ஏற்படாத வண்ணம் தற்காத்துக் கொண்டோம். இத்திட்டத்தில் எங்களை இணைத்து பயன் அளித்த தமிழ்நாடு மீன்வளப் பல்கலைக்கழகத்திற்கு எங்களது நன்றியை தெரிவித்து கொள்கிறோம்.



நா.செல்லப்பா

தலைவர்

லக்ஷன் அக்வா.பார்மர் வெல்.பர் சொசைட்டி

9. Check List:

Sl.No.	Question to consider	Yes	No
1.	Is the story interesting to the target audience of the project/activity report?	Yes	
2.	Does the story explain what new insights the project brings? What is the main lesson learned from this story? Does the story describe a key insight on what works and what doesn't and something that future projects could build on	Yes	
3.	Does the story describe the outcomes the project produced and the people who are benefitting? What changes-in skills, knowledge, attitude, practice, or policy-has the project brought about and who is benefitting from these changes?	Yes.	
4.	Does the story make a compelling point that people will remember? Does the story show how the project makes a difference to improving livelihoods and lessening poverty?	Yes	
5.	Does the story provide an interesting fact that people will remember? For example, how yields increased, how many hectares of land could become more productive from this innovation or technology?	YES	

Sl.No.	Question to consider	Yes	No
6.	Does the story explain what kind of impact this innovation or technology could have if scaled up?	Yes	
7.	Does the story show which partners contributed and how?	Yes	When all the stakeholders in the farming unit that will definitely succeed. Here the Government established a disease diagnosis lab at hub of aqua farming and that has helped the farmers to overcome the long time disease problems
8.	Does the story include quotes from stakeholders or beneficiaries?	Yes	
9.	Have I provided links to other media (journal articles, website news, newsletter, blogs, annual reports of other programme/project) that also feature this story?	Yes	
10.	Have I provided the contact details of people who can provide more information?	Yes	