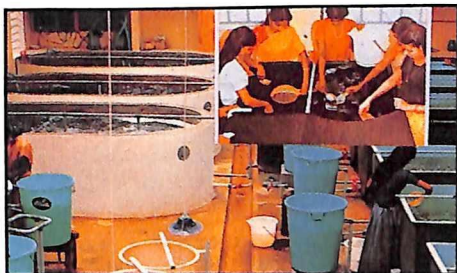


# FACTS ABOUT THE BRACKISH WATER SHRIMP FARMING



*This booklet is brought out to save the lakhs of shrimp farmers and workers who fight with the soil and stay in thatched huts at remote coastal areas despite scorching sun, rains and cyclones and earning thousands of crores worth of precious foreign exchange for our country, generating from the wastelands and wastewater.*

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## THE BRACKISH WATER SHRIMP FARMING

**An effective instrument for the rapid allround development of most backward rural areas.**

India is endowed with around 6,800 Kms. long coast line and nearly 12 lakh ha. brackish area suitable for aqua culture. Realising the vast potential of Brackish Water Shrimp Culture to

- i) earn huge amount of foreign exchange.
- ii) its role in transforming the pace of development of the most backward remote rural areas.
- iii) its contribution for the rapid development of infrastructural facilities such as Roads, Electricity, Telecommunications etc.
- iv) faster socio-economic development of fishermen, scheduled castes and other weaker sections residing in coastal areas.
- v) help revive depleting stocks of fish and relieve pressure from over stressed land and seas.
- vi) an answer to world food scarcity.

Govt. of India recognised it as a thrust area and encouraged shrimp farming. Several State Governments also promoted this activity.

## SHRIMP FARMS ARE NOT FACTORIES

Aqua culture is recognized as a part of agriculture along with animal husbandry, diary, poultry etc. In the Reserve Bank of India Amendment Act, 1974 as well as NABARD Act for Clause A, the following clause has been substituted – quote.

- a) "Agricultural operations includes animal husbandry, diary, poultry farming, **pisciculture** and other allied activities whether or not undertaken jointly with agricultural operations".

From the above, it is evident that shrimp farming is not an industry. It is very similar to any other agricultural activities like paddy cultivation, horticulture, poultry and animal husbandry.

## A COMPARISON OF PADDY AND SHRIMP FARMING

PADDY	SHRIMP FARMING
1. Preparation of land by tilling, liming and manuring with organic manure.	1. Preparation of land by tilling, liming and manuring with organic manure.
2. Implantation of seedlings.	2. Seeds are procured from hatcheries and released in ponds.
3. Additional fertilization with inorganic fertilizers.	3. Minimum fertilization with inorganic fertilizers.
4. Use of pesticides/insecticides is in heavy doses, average 1.5 kg/ha.	4. Insecticides/pesticides use is lethal to shrimps. The tolerance limit is 0.001 parts per billion.
5. Chemical Fertilizers, Bio-fertilizers are used.	5. Supplementary feeding with feed produced from natural ingredients like soyafLOUR, ricebran, shrimp head waste, similar to that of Animal feeds or poultry feeds.
6. Harvesting of paddy after 4 months.	6. Harvesting of shrimps after 4 months.

## TRADITIONAL FARMING

The word 'Traditional farming' itself is wrong. It is popularly known as 'TRADITIONAL FILTRATION'. In Malayalam 'CHEMMEEN KETTU' or VATTU meaning Shrimp Trap.

Filtration is a fishing method. Traditional filtration fields are seen in Kerala, West Bengal, Karnataka and Goa only.

These fields are topographically low lying areas adjacent to the back waters, estuaries and are in inter tidal zones.

During high tide, the land gets submerged and all natural aquatic animals enter into these fields. Then, the sluice gates are closed and the natural animals are entrapped in the impoundment. During low tide, all the animals are filtered (even the smallest larvae) by operating bag nets at the sluice gates. This type of filtration will be continued regularly for 5 months.

This Traditional Farming (Filtration) results in

- Bigger fishes eat the smaller ones
- Starvation of the animals
- Species are deprived of congenial factors required for their optimum growth such as oxygen, food and time factor for growth.
- Total collapse of ecological balance.

These fields are acting as 'killing fields' of natural resources, which otherwise would have grown in the natural waters and fished by the traditional poor fishermen.

## **WHO OPERATES THE TRADITIONAL FILTRATION FIELDS?**

The so called environmentalists loudly announce that traditional farming is done by poor fishermen. Traditional filtration field varies from 5 ha. to 200 ha. Every year, after rainy season these fields are auctioned to contractors. These contractors are rich people and not poor fishermen.

For example, in Ernakulam District of Kerala a 200 ha. traditional field was auctioned for 12 lakhs rupees in 1995. The contractor who got the highest bid had to spend another 18 lakhs for bunding and other facilities. So altogether the contractor initially spent Rs. 30 lakh for using 200 ha. area for 5 months (i.e. from Nov. – March). Besides he had to incur another 5 lakhs for meeting the salaries and contingencies. So it is evident that it is big contractors and not the small fishermen that are benefited from traditional shrimp farming.

No scientific approach is adopted in this operation rather the crude method of fishing is involved in the system. This effects the eco-system.

Another important aspect of Traditional filtration field is that in order to get the best facility of tides, bunds are constructed to manipulate the natural course of sea water or brackish water which is a clear violation of CRZ notification, 1991 para 2(viii).

## SCIENTIFIC FARMING VIS-A-VIS TRADITIONAL FARMING

SCIENTIFIC FARMING	TRADITIONAL FARMING
1. Done in elevated area beyond the fore-shore area.	1. Done in inter-tidal foreshore areas.
2. Lift irrigation is adopted to bring water to the farm by using pumps.	2. Tidal water is allowed to enter the fields by constructing bunds and sluices thereby hindering the natural course of tidal water.
3. Only selected cultivable species are introduced by procuring seeds from the hatcheries thereby not disturbing natural wealth of poor fishermen.	3. All the animals available in natural waters are directed to fields, thereby depriving the fishing rights of poor fishermen.
4. Provide all congenial eco-system to the animals for optimum growth.	4. No control over water quality, or eco-system leading to predation, starvation and poor growth.
5. Optimum utilization of land and eco-friendly approach.	5. Misuse of land thereby disturbing the natural eco-system.
6. Done by small, marginal and medium farmers in their own lands.	6. Done by contractors by taking land on lease.
7. Employment generation is better than that in agricultural sector. At present, 85,582 ha. are under scientific farming providing direct employment to 3,42,328 persons and indirect employment to nearly five lakh persons.	7. Employment generation is very low. At present 50,000 ha. are under traditional farming providing direct employment to only 7,500 persons and indirect employment to one lakh persons.

So only Scientific farming is sustainable whereas Traditional farming is detrimental to natural eco-system.

## DEVELOPMENT OF SHRIMP CULTURE IN INDIA AND IN OTHER COUNTRIES

Country	Cultured Shrimp Production in Tons		
	1993	1994	1995
Thailand	209,000	250,000	270,000
Ecuador	76,000	100,000	100,000
Indonesia	100,000	100,000	80,000
China	30,000	35,000	70,000
India	55,000	70,000	60,000
Vietnam	40,000	50,000	50,000
Bangladesh	30,000	35,000	30,000
Taiwan	20,000	25,000	30,000
Philippines	25,000	30,000	20,000
Mexico	9,000	12,000	12,000
Others	45,000	51,000	40,000

*(Source : Aqua farm NEWS, SEAFDEC, Philippines.)*

The table clearly indicate how our neighbouring countries like China, Thailand, Vietnam are progressing by adopting environment friendly scientific aqua farming. Thailand is still maintaining the lead.

Scientific Shrimp farming has picked up its momentum in India only a decade ago. Out of the total potential area available for shrimp culture development in India, only 11% is presently utilised for Shrimp farming.



## **WHO IS DOING SHRIMP FARMING? – NOT M.N.Cs., BUT LAKHS OF SMALL FARMERS**

About 2 lakh farmers mainly belonging to Fishermen, Scheduled Castes and other Weaker Sections residing in coastal villages are engaged in Shrimp farming.

52% shrimp farmers are owning land area less than 2 ha.

29% farmers are owning land area between 2–5 ha.,

12% farmers are owning land area between 5–10 ha.

7% farmers including two multinationals viz. ITC and Hindustan Lever Limited and some corporate firms are owning more than 10 ha.

In Krishna District of Andhra Pradesh, where the culture is to the maximum extent of 32,856 ha., of the total number of 37,495 farmers from 122 villages, 37,454 farmers are having less than 2 ha. each.

Above figures confirm that shrimp farming is mostly done by small and marginal farmers, and not by multinationals and industrialists.

Shrimp culture involve construction of ponds, pump houses, digging of canals, pumping of water, feeding, harvesting, removal of heads, processing, packaging, transport, cold storage etc., multifarious activities. It will help to create direct and indirect employment to lakhs of persons.

Due to intensive operations of the big trawlers, marine catch by the small fishermen have come down and they could get lesser amount for their catch. With the growth of aqua culture these fishermen have taken up shrimp farming in a big way and are able to get substantial incomes which has resulted in faster, socio-economic development. This has brought sea change in their way of life.

## **LEAST POLLUTION DUE TO SHRIMP FARMING**

Shrimp is the most delicate animal which is very sensitive to any sort of pollution or change in climatic conditions. Scientific shrimp farming is nothing but rearing young babies of shrimp in a well prepared pond by providing all the congenial eco-system to sustain life to the animals. The water wherein the shrimps are grown is the lifeblood. To achieve optimum growth and survival of the species, the farmer has to maintain the most congenial ecological balance in the system. Aqua culture development relies heavily for its success on the quality and the quantity of the natural resources such as water, land, feed and seed. As such, any damage to the coastal eco-system will have negative consequences on shrimp farming itself. Therefore, aqua culture can be considered as an integral part of the natural environment.

NEERI in its February, 1995 report stated that, "Comparison of the quality of Shrimp farm effluent with wastes from other potential sources of pollution indicate the pollution potential in the shrimp farms effluent is considerably less than that of domestic or industrial waste water. The actual quality of shrimp farm effluent is less noxious as compared to the other sources of coastal pollution".

Therefore it is evident that shrimp farming results in very least pollution. Even, this least pollution can be eliminated by adopting scientific methods.

## **SALINIZATION OF LAND & WATER – NOT A FACT**

The shrimp farm whether it is traditional or scientific is located wherever saline water is available. Without saline water the shrimps cannot grow. So the shrimp farms are located on the banks of the tail ends of agricultural drains, seawater creeks, backwaters and estuaries, where saline water ingression naturally occurs. Therefore, one can easily understand that even before the existence of shrimp farms, these lands were saline that was why, such lands were not in use since times immemorial.

The ICAR report of 1997 has stated that "A.P. does not appear to have salinization of ground water as a problem of any consequence".

NEERI in its report of February, 1995 stated that "There is no threat to drinking water wells because of shrimp farms as the shrimp farms mostly remained in hard clay soil where the seepage is almost nil or at its minimum percentage".

In fact, the shrimp farmers are now using these wastelands for a productive purpose by using the saline drainage water, which was otherwise flowing to the sea without any productive purpose. So if we look into real facts with national interest, we will find that shrimp farmers are doing two important services to the nation.

1. Utilization of wastelands.
2. Utilization of wastewaters.

It at all there may be one or two cases all over the country, it should not be generalised.

## **DESTRUCTION OF MANGROVES – NOT BECAUSE OF SHRIMP CULTURE**

Mangroves are under the administrative control of forest department of respective states. If we analyse the truth, we will understand that the mangrove forests have been mainly disturbed by local inhabitants for the purpose of wood for fuel and other domestic needs. Shrimp farmers cannot use the mangrove areas due to the fact that the mangrove areas are technically not suitable for construction of farms, because of its acidic nature and very high cost in site clearance and construction.

As per the report of National Remote Sensing Agency (NRSA) – In Krishna District of Andhra Pradesh, where Shrimp culture is maximum to an extent of 32,856 ha., disappearance of mangrove is hardly 19 ha., since 1990.

## **DENIAL OF ACCESS TO SEA SHORE – A FALSE PROPAGANDA**

The criticism is far stretched. At one or two places out of ignorance or arrogance, some farmers/firms might have denied access to the local people to go over to the seashore. It cannot be generalized. Usually, prawn farmers/organizations try to maintain very cordial relations with the people residing in nearby areas. The fishermen and other local people have a definite right to reach the seashore through the path ways, they were using earlier. It should be protected by district authorities. The proposed Aqua Authority may refuse to grant or cancel the licence to any aqua farm which interferes with the path way right of the local people.

## **CONVERSION OF FERTILE AGRICULTURAL LANDS TO SHRIMP FARMS – NOT TRUE**

Most of the lands on which shrimp culture is being carried out are barren, brackish, saline and waste fields. No crop can be grown on these lands. Brackish water aquaculture has come in handy to the people to obtain higher incomes from these waste lands. At few places where irrigation canal systems are there in existence, lands located near the sea shore being the tail ends of such systems, as enough water does not reach in time, as low yields only can be obtained, the farmers are opting for shrimp culture to get good return from their lands. Due to the inefficiency and lapses in preparation of data, many of these waste lands are shown as agricultural lands in revenue records.

## **SHRIMP EXPORT POTENTIAL**

Shrimp is an animal which grows in tropical warm waters and cannot grow in temperate cold climatic countries like USA, Europe etc. So these countries have to depend on tropical countries for getting shrimp. The tropical countries like China, Thailand, Indonesia, India etc. produce shrimps and export to these countries for getting foreign exchange to meet the Balance of Payment problem, generating employment opportunities, which in turn help the overall Socio-economic development in coastal areas.

At present, India is earning Rs. 2,500 crores worth of foreign exchange by exporting shrimps and has potential to earn Rs. 10,000 crores, if half of the potential brackish area is utilised for scientific shrimp culture.

**VIEWS OF COASTAL STATE GOVERNMENTS  
REFLECTED IN THE REPORT OF THE STUDY TEAM CONSISTING OF  
HON'BLE MINISTER OF STATE FOR AGRICULTURE AND  
MEMBERS OF PARLIAMENT ON SHRIMP AQUACULTURE**

**1. Tamilnadu**

1250 aquaculture farms covering 4030 ha. are in existence, out of which 75% are under extensive farming (below 5 ha.) and the rest are under modified extensive and semi-intensive methods. Ground water is not used by aqua farms in general and salinization of ground water has not taken place because of shrimp farms. The state has a potential of absorbing 32,000 persons in shrimp farming and allied sectors. (Page 5).

**2. Andhra Pradesh**

The land that has been used for brackish water shrimp culture is mostly unproductive, fallow and tail end land. Therefore, there has been no displacement of labour on account of aquaculture farms. Expansion of shrimp aqua culture has led to creation of ancillary economic activities related to hatchery, feed mills, ice plants, processing units and this has led to new employment generation. (Pages 7 & 8).

**3. Orissa**

There is no reported loss of ground water in and around government sponsored shrimp farms and there is no denial of access to traditional fishermen communities. No case of displacement of labourers on account of shrimp farming has been reported. On the contrary, aquaculture has provided more scope for employment of skilled, semiskilled and unskilled labourers. (Page 10)

**4. West Bengal**

No environmental problem has arisen from the traditional and improved methods of shrimp farming. It has also stated that high tide line should be reviewed by Surveyor General of India. The fisheries department stated that the Aquaculture

Authority Bill of 1997 meets the requirement of the State and so Government of West Bengal has sent a letter on 3rd April, 1997 to the Union Minister of Agriculture conveying the support to the bill. The Government has also stated that no agriculture land has been converted into shrimp farms and no displacement of labour has taken place. (Page 13 and 14)

## **5. Maharashtra**

No conversion of agriculture land has taken place in the State. Since the soil and ground water is already saline in areas where shrimp farming is carried out, aquaculture farms are not causing salinization. Further, there is no displacement of labour on account of shrimp aquaculture. (Page 14).

## **6. Goa**

Shrimp farms have not effected the mangroves. The shrimp farms did not effect the drinking water. (Page 22)

## **7. Karnataka**

No agricultural land has been observed to be converted for shrimp farming. No adverse impact on drinking water in the wells adjacent to shrimp farms has been noticed. There are no reports of drinking water getting polluted because of shrimp farms. No destruction of mangroves has been carried out for development of shrimp farms. Shrimp farming has created new employment opportunities and the State Government is interested in promoting aquaculture activities including brackish water shrimp culture. (Page 23)

## **8. Kerala**

There is no conflict between agriculturists and aquaculturists. There is no contamination of ground water due to shrimp culture. There has been no displacement of labour and on the contrary, more job opportunities have been created due to shrimp culture and ancillary activities. (Page 26)

So, it is evident that Governments of all the Coastal States are in favour of brackish water shrimp culture and allegations propogated by the so called environmentalists are contrary to the ground realities.

## NEED FOR AQUACULTURE

It is globally experienced that the marine fish catch is drastically declining due to several reasons as listed below:

1. Over fishing
2. Environment pollution due to
  - a) Oil slicks
  - b) domestic waste from urban settlement.
  - c) Insecticides & pesticides run off from agricultural fields.
  - d) Heavy metals & chemicals from industrial units.
  - e) Solid and domestic waste from beach resorts.
  - f) Discharge of warm effluents from thermal plants.

Therefore aquaculture is the next alternative source to meet the projected demand of aqua products as detailed here.

Projected demand of edible fishery products to meet the requirement of world population by the year 2000 A.D. is 100 to 140 million tons.

Maximum total catch available for human consumption is 80 million tons.

So, the deficit of 20 to 60 million tons are to be made up through aqua culture only.



## **DEMOLITION OF SHRIMP PONDS – A GREAT NATIONAL LOSS**

It is learnt that NABARD has refinanced the aqua culture to an extent of Rs. 400 crores. The commercial banks it is learnt have also advanced loans to an extent of Rs. 2,000 crores. Lakhs of small investors have contributed few hundreds of crores of rupees in the form of equity. In addition lakhs of small and medium farmers have invested their life savings; loans from relatives, friends and local finance companies to an extent of several hundreds of crores of rupees.

Demolition of ponds will ruin lakhs of farmers who have taken with fond hope of improving their economic levels. This will result in loss of very huge public and private investments already made.

Moreover Shrimp culture is not mentioned as a prohibited activity in CRZ notification, 1991. Since Government and Governmental agencies are considering shrimp culture as a part of agriculture, at no time they have insisted that shrimp ponds should not be constructed in CRZ area. Farmers were completely ignorant about the CRZ notification.

In several states the State Govts. have assigned waste, barren, brackish, saline lands located along creeks, water ways, drains, rivers to the weaker section landless poor people to take up shrimp culture to help them gain self employment for economic uplift. So, aqua culture should not be brought under CRZ notification as agriculture is not covered by it.

## **THE AQUA CULTURE AUTHORITY ACT – NEED OF THE HOUR**

The Hon'ble Supreme Court has directed Government of India on 11th December, '96 to constitute an Aqua Culture Authority immediately. The authority comprising of experts from Aqua Culture, Pollution Control and Environmental Concerns can examine the experiences of shrimp farming in other parts of the globe, give appropriate advice to our shrimp farmers to regulate this activity to stand on firm footing in the decades to come. The authority will have power either to deny or cancel a licence if any aqua farmer do not comply with the guidelines given by the authority. The recent effort of the Union Government to bring the Aqua Culture Authority Bill, 1997, though belated is a right step in the right direction.

So, in the interest of lakhs of aqua farmers to safe guard the environmental concerns, to encourage the shrimp farming on a sustainable eco friendly basis the Aqua Culture Authority Act is a must.

## **WHO BENEFITS DUE TO BANNING SCIENTIFIC SHRIMP CULTURE IN INDIA?**

Some foreign firms who are not happy at the fact that India is emerging as a potential exporter of Shrimps in World market will only be too happy at ruination of scientific shrimp culture in our country. Some organizations who are demanding demolition of the ponds and closure of shrimp culture activity will only be helping such foreign firms, who are keen that India should not become a strong competetor in shrimp business.

It is the duty of every citizen to strengthen our indigenous economic base, self reliance to meet vaxacious Balance of Payment problem. Generation of wealth from waste land and water should be encouraged but not penalised.

*"Development of India  
lies in the  
Development of our Villages"*



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