Map of coastal zone, foot showing principal estuaries and backwaters.

- Vellar River
- Puvanar River
- Killai backwater complex
- Cuddalore
- Porto Novo
- Vellar estuary
- Kollam estuary
- Gaddelore

Locations include:
- Vellor estuary
- Porto Novo
- Killai backwater complex

Key:
- Solid line: Main river or estuary
- Dashed line: Alternative paths or minor tributaries
- Dotted line: Backwater areas
Shrimps after harvesting.

Brackish water getting pumped for shrimp culture and let into the pond through canals, in Perunthottam, Tamil Nadu
The Kodavai Aaru, where from brackish water is being drawn for shrimp culture near Velankanni, Tamil Nadu. Shrimp farms are operating all along the shore.

The effluent water of the shrimp farm were let into the neighbouring fields, in Papakoil Village, Tamil Nadu.
The shrimp farm just after the harvest in Velankani.

A site for shrimp culture been bought just next to the agricultural land in Namakkal.
Shrimp farm effluent being let out in the beach, near Nagapattinam.

Residues and waste left after shrimps are harvested in Papakoil.
People stopping digging operation of shrimp farm in Perunthottam Village on 5 April 1994. [About 1000 men and women of Perunthottam successfully stopped the digging operation of shrimp farm].

Photograph of a house among the 34 houses burnt down by Swarnamatchya Aqua Farm owners in Thenampattinam Village in 1994.
People of Thenampattinam opposing the burning down of 34 house by Swarnamatchya Aqua Farm owners, at the farm site on 10 August 1994.

Peoples rally against Aquaculture Authority Chairman Justice Ramanujam's Environment Impact Assessment Report in Chennai on 2 September 2001. The rally was led by leader of IAFTI S.Jagannathan.
The Picture showing Amalgam Marine Harvests Limited Farm using the Cauvery irrigation canal as effluent discharge unit

Affected irrigation canal of Cauvery used for effluent release by Amalgam Marine Harvest Limited
Pictures showing the block. The PWD feeder canals are either blocked or being used as drainage for effluent release by Amalgam Marine Harvests Limited, near Pudukkuppam.
A View of the agricultural lands bought and left uncultivated by Magna Foods and Proteins limited for construction of Shrimp Industries.

Part of the proposed site of the Magna Foods and Proteins Limited.
A view of agricultural lands near Coastal Enterprises Limited.

Construction of jetty by Coastal Enterprises Limited and Farisa Aquafarms to draw water from the sea.
Rally by Nagal District Fish Workers Forum (NDFF) and Grama Swaraj Movement on 01.03.1995 at Sirkali, demanding total ban of Shrimp Industries.

Human Chain by Campaign Against Shrimp industries and Grama Swaraj Movement on 02.07.97 at Perunthottam, Nagapattinam District, during the visit of Dr. Venugopalachari Committee demanding to withdraw the Aquaculture Authority Bill and to implement the Supreme Court Judgement.
## APPENDIX - III

### SUMMARY OF PRAWN AQUACULTURE SYSTEMS

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Traditional</th>
<th>Extensive</th>
<th>Modified Extensive</th>
<th>Semi-Intensive</th>
<th>Intensive</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size</strong></td>
<td>&gt; 5 ha</td>
<td>1 to 5 ha</td>
<td>1 to 2 ha</td>
<td>0.2 to 0.5</td>
<td>0.03 to 0.1</td>
</tr>
<tr>
<td><strong>Stocking density</strong></td>
<td>Natural under 10,000/ha</td>
<td>Natural and Artificial 10,000</td>
<td>Majority artificial 10,000 to 18,000</td>
<td>Artificial 1 to 3 lakhs/ha</td>
<td>Artificial 5 to 20 lakhs/ha</td>
</tr>
<tr>
<td><strong>Average Production</strong></td>
<td>0.5 to 1 tonne/ha/year</td>
<td>1.5 to 2.5 tonne/ha/year</td>
<td>1.5 to 2.5 tonne/ha/year</td>
<td>Upper 5 tonne/ha/year</td>
<td>10 to 20 tonne/ha/year</td>
</tr>
<tr>
<td><strong>Feed Source</strong></td>
<td>Natural</td>
<td>Natural and Formulated</td>
<td>Formulated</td>
<td>Formulated</td>
<td>Formulated</td>
</tr>
<tr>
<td><strong>Seed Source</strong></td>
<td>Natural/wild</td>
<td>Hatchery/wild</td>
<td>Hatchery</td>
<td>Hatchery</td>
<td>Hatchery</td>
</tr>
<tr>
<td><strong>Water Exchange</strong></td>
<td>Tidal</td>
<td>Tidal and pumping</td>
<td>Pumping</td>
<td>Pumping</td>
<td>Pumping</td>
</tr>
<tr>
<td><strong>Aeration and Water Exchange</strong></td>
<td>Nil</td>
<td>2 to 4 times daily</td>
<td>4 to 6 times daily</td>
<td>6 to 10 times daily</td>
<td>&gt; 10 times and oxygen injectors</td>
</tr>
<tr>
<td><strong>Fertilisers</strong></td>
<td>None</td>
<td>Organic and biodegradable</td>
<td>Organic and biodegradable</td>
<td>Organic and biodegradable</td>
<td>Organic and biodegradable</td>
</tr>
<tr>
<td><strong>Diversity of crop</strong></td>
<td>Polyculture</td>
<td>Occasionally Polyculture, majority monoculture</td>
<td>Monoculture</td>
<td>Monoculture</td>
<td>Monoculture</td>
</tr>
<tr>
<td><strong>Disease and Viruses</strong></td>
<td>Very rare to nil</td>
<td>Rare</td>
<td>Moderate</td>
<td>Moderate to frequent</td>
<td>Frequent</td>
</tr>
<tr>
<td><strong>Management</strong></td>
<td>Minimal</td>
<td>Minimal with some skilled personnel</td>
<td>Skilled Personnel</td>
<td>Skilled Personnel</td>
<td>Highly skilled</td>
</tr>
<tr>
<td><strong>Employment</strong></td>
<td>No figure for</td>
<td>Up to 7 persons/ha 45</td>
<td>Less than 7</td>
<td>1-3 persons/ha</td>
<td>1 person/ha, only 6% of the operating budget is for labour</td>
</tr>
<tr>
<td></td>
<td>employment,</td>
<td>days per working cycle</td>
<td>persons/ha employed for 26 days</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>however 30-40%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Effluent treatment</strong></td>
<td>Not required</td>
<td>Not required</td>
<td>Required</td>
<td>Required</td>
<td>Required</td>
</tr>
<tr>
<td><strong>Environmental implications</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Sustaining system</td>
<td>Sustaining with inputs</td>
<td>System relies on inputs</td>
<td>Sustaining system</td>
<td>System relies on inputs</td>
</tr>
<tr>
<td></td>
<td>Yield 6 mths prawn/fish and 6 mths paddy in channel system</td>
<td>Requires Land to be cleared</td>
<td>Requires Land to be Cleared</td>
<td>Only Produces Prawn</td>
<td>Only produces Prawn</td>
</tr>
<tr>
<td><strong>Social implications</strong></td>
<td>Provides employment</td>
<td>Provides employment</td>
<td>Product export</td>
<td>Product exported</td>
<td>Product exported</td>
</tr>
<tr>
<td></td>
<td>Source of food</td>
<td>Source of food</td>
<td>Little Employment</td>
<td>Mechanised</td>
<td>Mechanised</td>
</tr>
<tr>
<td><strong>Viability of system</strong></td>
<td>Productivity of system is continuous if uninterrupted</td>
<td>Productivity of system is continuous if uninterrupted</td>
<td>Productivity of system is less than 10 years</td>
<td>5-10 years</td>
<td>5-10 years</td>
</tr>
</tbody>
</table>

# APPENDIX IV

## TOLERANCE LIMITS FOR TRADE EFFLUENTS

Ref: Tamilnadu Pollution Control Board & B.P.  

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Characteristics</th>
<th>Inland Surface Water</th>
<th>Marine coastal areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Colour and odour</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 2.     | Suspended solids mg/l | 100 | a. For process water water 100  
b. For cooling water effluent - 10 percent above total suspended matter of influent cooling water. |
| 3.     | Particle size of suspended solids | Shall pass 850 microns IS sieve | a. Floatable solids max. 3mm |
| 4.     | Dissolved solids (inorganic) mg/l | 2100 | --- |
| 5.     | pH value | 5.5 to 9.0 | 5.5 to 9.0 |
| 6.     | Temperature oC | 40 at the point | 45 at the point |
| 7.     | Oil and grease mg/l | 10 | 20 |
| 8.     | Total residual mg/l Chlorine | 1 | 1 |
| 9.     | Ammonical Nitrogen (as N) mg/l | 50 | 50 |
| 10.    | Total Kieldah mg/l Nitrogen (as N) | 100 | 100 |
| 11.    | Free Ammonia (as NH3) mg/l | 5 | 5 |
| 12.    | Biochemical Oxygen Demand (5 days at 20°C) | 30 | 100 |
| 13.    | Chemical Oxygen Demand mg/l | 250 | 250 |
| 14. | Arsenic (as AS) mg/l | 0.2 | 0.02 |
| 15. | Mercury (as Hg) mg/l | 0.01 | 0.02 |
| 16. | Lead (as Pb) mg/l | 0.10 | 0.10 |
| 17. | Hexavalent Chromium (Cr(VI)) mg/l | 0.10 | 0.10 |
| 18. | Total Chromium (as Cr) | 2.0 | 2.0 |
| 19. | Cadmium (as Cd) mg/l | 2.0 | 2.0 |
| 20. | Copper (as Cu) mg/l | 3 | 3 |
| 21. | Zinc (as Zn) mg/l | 1 | 15 |
| 22. | Selenium (as Se) mg/l | 0.05 | 0.05 |
| 23. | Nickel (as Ni) mg/l | 3 | 3 |
| 24. | Boron (as B) mg/l | 2 | 2 |
| 25. | Percent Sodium | - | - |
| 26. | Residual Sodium Carbonate mg/l | - | - |
| 27. | Cyanide (as CN) mg/l | 0.2 | 0.2 |
| 28. | Chloride (as Cl) mg/l | 1000 | - |
| 29. | Fluoride (as F) mg/l | 2.0 | 15 |
| 30. | Dissolved Phosphates (as P) mg/l | 5 | - |
| 31. | Sulphate (SO4) mg/l | 1000 | 1000 |
| 32. | Sulphide (as S) mg/l | 2 | 5 |
| 33. | Pesticides | Absent | Absent |
| 34. | Phenolic compounds (as (6H5)H) mg/l | 1 | 5 |
| 35. | Radioactive materials |
| a. | Alpha emitters (uc/ml) | 10.7 | 10.7 |
| b. | Beta emitters (uc/ml) | 10.6 | 10.7 |

APPENDIX - V

THE ENVIRONMENT (PROTECTION) RULES, 1986.

MINISTRY OF ENVIRONMENT & FORESTS
(Department of Environment, Forests & Wildlife)
New Delhi, the 19th November, 1986.

NOTIFICATION

S.O. 844 (E).- In exercise of the powers conferred by sections 6 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby makes the following rules, namely:-

1. Short title and commencement :-

   (i) These rules may be called the Environment (Protection) Rules, 1986.

   (ii) They shall come into force on the date of their publication in the Official Gazette.

2. Definitions :- In these rules, unless the context otherwise requires,---

   (a) "Act" means the Environment (Protection) Act, 1986 (29 of 1986);

   (b) "Central Board" means the Central Board for the Prevention and Control of Water Pollution constituted under section 3 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974);

   (c) "Form" means a form set forth in Appendix A to these rules;

   (d) "Government Analyst" means a person appointed or recognized as such under section 13;

   (e) "person" in relation to any factory or premises means a person or occupier or his agent who has control over the affairs of the factory or premises and includes in relation to any substance, the person in possession of the substance;

   (f) "recipient system" means the part of the environment such as soil, water, air or other which receives the pollutants,

   (g) "section" means a section of the Act,

   (h) "Schedule" means a Schedule appended to these rules;

   (i) "Standards" means standards prescribed under these rules;

   (j) "State Board" means a State Board for the Prevention and Control of Water Pollution Constituted under section 4 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) or a State Board for the Prevention and Control of Air Pollution constituted under section 5 of the Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981),
3. Standards for emission or discharge of environmental pollutants:

(1) For the purposes of protecting and improving the quality of the environment and preventing and abating environmental pollution, the Standards for emission or discharge of environmental pollutants from the industries, operations or processes shall be as specified in the Schedule.

Provided where an industry, operation or process has been granted time by the Central Board or a State Board to implement a time bound programme to treat the environmental pollutants so as to bring them to the standards prescribed under these rules after specifying certain conditions and where such an industry, operation or process by adhering strictly to such stipulations specified by the Central or the State Board discharges environmental pollutants in excess of the prescribed standards during such periods of such time-bound programme, such discharge shall not be considered as an offence under the Act.

(2) Notwithstanding anything contained in sub-rule (1), the Central Board or a State Board may specify more stringent standards from those provided in the Schedule in respect of any specific industry, operation or process depending upon the quality of the recipient system and after recording reasons therefore in writing.

4. Directions:

1. Any direction issued under section 5 shall be in writing.

2. The direction shall specify the nature of action to be taken and the time within which it shall be complied with by the person, officer or the authority to whom such direction is given.

3(a) The person, officer or authority to whom any direction is sought to be issued shall be served with a copy of the proposed direction and shall be given an opportunity of not less than fifteen days from the date of service of a notice to file with an officer designated in this behalf the objections, if any, to the issue of the proposed direction.

3(b) *

4. The Central Government shall within a period of 45 days from the date of receipt of the objections, if any, or from the date upon which an opportunity is given to the person, officer or authority in file objections whenever is earlier, after considering the objections, if any, received from the person, officer or authority sought to be directed and for reasons to be recorded in writing, confirm, modify or decide not to issue the proposed direction.

5. In a case where the Central Government is of the opinion that in view of the likelihood of a grave injury to the environment it is not expedient to provide an opportunity to file objections against the proposed direction, it may, for reasons to be recorded in writing, issue directions without providing such an opportunity.

6. Every notice or direction required to be issued under this rule shall be deemed to be duly served:

a) where the person to be served is a company, if the document is addressed in the name of the company at its registered office or at its principal office or place of business and is either:

(i) sent by registered post, or
(ii) delivered at its registered office or at the principal office or place of business;

b) where the person to be served is an officer serving Government, if the document is addressed to the person and a copy thereof is endorsed to the Head of the Department and also to the Secretary to the Government, as the case may be, in charge of the Department in
which for the time being the business relating to the Department in which the officer is employed is transacted and is either—

(i) sent by registered post, or
(ii) is given or tendered to him.

(c) in any other case, if the document is addressed to the person to be served and—

(i) is given or tendered to him, or
(ii) if such person cannot be found, is affixed on some conspicuous part of his last known place of residence or business or is given or tendered to some adult member of his family or is affixed on some conspicuous part of the land or building, if any, to which it relates, or
(iii) is sent by registered post to that person.

Explanation :- For the purposes of this sub-rule,—

a) "company" means any body corporate and includes a firm or other association of individuals;
b) "a servant" is not a member of the family.

5. Prohibition and restriction on the location of industries and the carrying on of processes and operations in different areas:

(1) The Central Government may take into consideration the following factors while prohibiting or restricting the location of industries and carrying on of processes and operations in different areas—

(i) Standards for quality of environment in its various aspects laid down for an area
(ii) The maximum allowable limits of concentration of various environmental pollutants (including noise) for an area
(iii) The likely emission or discharge of environmental pollutants from an industry, process or operation proposed to be prohibited or restricted
(iv) The topographic and climatic features of an area
(v) The biological diversity of the area which in the opinion of the Central Government needs to be preserved.
(vi) Environmentally compatible land use
(vii) Net adverse environmental impact likely to be caused by an industry, process or operation proposed to be prohibited or restricted
(viii) Proximity to a protected area under the Ancient Monuments and Archaeological Sites and Remains Act, 1958 or a sanctuary, National Park, game reserve or closed area notified as such under the Wild Life (Protection) Act, 1972 or places protected under any treaty, agreement or convention with any other country or countries or in pursuance of any decision made in any international conference, association or other body
(ix) Proximity to human settlements
(x) Any other factor as may be considered by the Central Government to be relevant to the protection of the environment in that area.

(2) While prohibiting or restricting the location of industries and carrying on of processes and operations in an area, the Central Government shall follow the procedure hereinafter laid down.

(3) (a) Whenever it appears to the Central Government that it is expedient to impose prohibition or restrictions on the location of an industry or the carrying on of processes and operations in an area, it may, by notification in the Official Gazette and in such other manner as the Central Government may deem necessary from time to time, give notice of its intention to do so.

(b) Every notification under clause (a) shall give a brief description of the area, the industries, operations, processes in that area about which such notification pertains and also specify the reasons for the imposition of prohibition or restrictions on the location of the industries and carrying on of processes or operations in that area.

(c) Any person interested in filing an objection against the imposition of prohibition or restrictions on carrying on of processes or operations as notified under clause (a) may do so in writing to the Central Government within sixty days from the date of publication of the notification in the Official Gazette.

(d) The Central Government shall within a period of one hundred and twenty days from the date of publication of the notification in the Official Gazette consider all the objections received against such notification and may impose prohibition or restrictions on location of such industries and the carrying on of any process of operation in an area.

6. Procedure for taking samples:----

The Central Government or the officer empowered to take samples under section 11 shall collect the sample in sufficient quantity to be divided into three uniform parts and effectively seal and suitably mark the same and permit the person from whom the sample is taken to add his own seal or mark to all or any of the portions so sealed and marked. In case the sample is made up in containers of small volumes and is likely to deteriorate or be otherwise damaged if exposed, the Central Government or the officer empowered shall take three of the said samples without opening the containers and suitably seal and mark the same. The Central Government or the officer empowered shall dispose of the samples so collected as follows: ----

(i) One portion shall be handed over to the person from whom the sample is taken under acknowledgement;

(ii) the other portion shall be sent forthwith to the environmental laboratory for analysis; and

(iii) the last portion shall be retained by him to be produced in the Court before which proceedings, if any, are instituted.

7. Service of notice:----

The Central Government or the officer empowered shall serve on the occupier or his agent or person in charge of the place a notice then and there in Form 1 of his intention to have the sample analysed.
8. Procedure for submission of samples for analysis and the form of laboratory report thereon:

1. Sample taken for analysis shall be sent by the Central Government or the officer empowered to the environmental laboratory by registered post or through special messenger along with Form II.

2. Another copy of Form II together with specimen impression of seals of the officer empowered to take samples along with the seals/marks, if any, of the person from whom the sample is taken shall be sent separately in a sealed cover by registered post or through a special messenger to the environmental laboratory.

3. The findings shall be recorded in Form III in triplicate and signed by the Government Analyst and sent to the officer from whom the sample is received for analysis.

4. On receipt of the report of the findings of the Government Analyst, the officer shall send one copy of the report to the person from whom the sample was taken for analysis, the second copy shall be retained by him for his records and the third copy shall be kept by him to be produced in the Court before which proceedings, if any, are instituted.

9. Functions of environmental laboratories:

The following shall be the functions of environmental laboratories:

(i) to evolve standardized methods for sampling and analysis of various types of environmental pollutants;

(ii) to analyse samples sent by the Central Government or the officers empowered under subsection (1) of section II;

(iii) to carry out such investigations as may be directed by the Central Government to lay down standards for the quality of environment and discharge of environmental pollutants, to monitor and to enforce the standards laid down;

(iv) to send periodical reports regarding its activities to the Central Government;

(v) to carry out such other functions as may be entrusted to it by the Central Government from time to time.

10. Qualifications of Government Analyst:

A person shall not be qualified for appointment or recognised as a Government Analyst unless he is a:

(a) graduate in science from a recognised university with five years experience in a laboratory engaged in environmental investigations, testing or analysis; or

(b) post-graduate in science or a graduate in engineering or a graduate in medicine or equivalent with two years experience in a laboratory engaged in environmental investigations, testing or analysis; or

(c) post-graduate in environmental science from a recognised university with two years experience in a laboratory engaged in environmental investigations, testing or analysis.
11. Manner of giving notice:

The manner of giving notice under clause (b) of section 19 shall be as follows, namely:

1. The notice shall be in writing in Form IV

2. The person giving notice may send notice to:-

(a) if the alleged offence has taken place in a Union territory:

   (A) the Central Board, and

   (B) Ministry of Environment and Forests (represented by the Secretary to the Government of India);

(b) if the alleged offence has taken place in a State:

   (A) the State Board; and

   (B) the Government of the State (represented by the Secretary to the State Government in charge of environment); and

   (C) the Ministry of Environment and Forests (represented by the Secretary to the Government of India);

3. The notice shall be sent by registered post acknowledgement due, and

4. The period of sixty days mentioned in clause (b) of section 19 of the Environment (Protection) Act, 1986 shall be reckoned from the date it is first received by one of the authorities mentioned above.

Source: Bar Act, Pollution Control Board, Government of India, 1990
NOTIFICATION

New Delhi, the 19th February, 1991.

NOTIFICATION UNDER SECTION 3(i) AND SECTION 3(2)(v) OF THE ENVIRONMENT (PROTECTION) ACT 1986 AND RULE 5(3)(d) OF ENVIRONMENT (PROTECTION) RULES, 1986, DECLARING COASTAL STRETCHES AS COASTAL REGULATION ZONE (CRZ) AND REGULATING ACTIVITIES IN THE CRZ.

New Delhi, the 19th February, 1991.

S.O. 114(E), Whereas a Notification under Section 3(i) and Section 3(2)(v) of the Environment (Protection) Act, 1986, inviting objections against the declaration of Coastal Stretches as Coastal Regulation Zone (CRZ) and importing restrictions on industries, operations and processes at the CRZ was published vide S.O. No.944 (E) 15th December, 1990.

And whereas all objections received have been duly considered by the Central Government;

Now, therefore, in exercise of the powers conferred by Clause (d) of sub-rule (3) of Rule 5 of the Environment (Protection) Rules, 1986, and all other powers vesting in its behalf, the Central Government hereby declares the coastal stretches of seas, bays, estuaries, creeks, rivers and backwaters which are influenced by tidal action (in the landward side) upto 500 meters from the High Tide Line (HTL) and the land between the Low Tide Line (LTL) and the HTL as Coastal Regulation Zone and imposes with effect from the date of this Notification, the following restrictions on the setting up and expansion of industries, operations or processes etc. in the said Coastal Regulation Zone (CRZ). For purposes of this Notification, the High Tide Line (HTL) will be defined as the line upto which the highest high tide reaches at spring tides.

1. Note – The distance from the High Tide Line (HTL) to which the proposed regulations will apply in the case of rivers, creeks and backwaters may be modified on a case by case basis for reasons to be recorded while preparing the Coastal Zone Management Plans (referred to below): however, this distance shall not be less than 100 meter or the width of the creek river or backwater whichever is less.

2. Prohibited Activities:

The following activities are declared as prohibited within the Coastal Regulation Zone, namely:

i) Setting up of new industries and expansion of existing industries, except those directly related to water front or directly needing foreshore facilities.

iii) Setting up and expansion of fish processing units including warehousing (excluding hatchery and natural fish drying in permitted areas):

iv) Setting up and expansion of units/mechanism for disposal of waste and effluents, except facilities required for discharging treated effluents into the water course with approval under the Water (Prevention and Control of Pollution) Act, 1974; and except for storm water drains:

v) Discharge of untreated wastes and effluents from industries, cities or towns and other human settlements. Schemes shall be implemented by the concerned authorities for phasing out the existing practices, if any, within a reasonable time period not exceeding three years from the date of this notification:

vi) Damping of city or town waste for the purposes of landfilling or otherwise; the existing practice, if any, shall be phased out within a reasonable time not exceeding three years from the date of this notification:

vii) Dumping of ash or any wastes from thermal power stations:

viii) Land reclamation, bunding or disturbing the natural course of sea water with similar obstructions, except those required for control of coastal erosion and maintenance or clearing of waterways, channels and ports and for prevention of sandbars and also except for tidal regulators, storm water drains and structures for prevention of salinity and for sweet water recharge:

ix) Mining of and rocks and other substrata materials, except those rare minerals not available outside the CRZ areas:

x) Harvesting or drawal of ground water and construction of mechanisms therefor within 200 m of HTL: In the 200 m to 500 m zone it shall be permitted only when done manually through ordinary wells for drinking, horticulture, agriculture and fisheries;

xi) Construction activities in ecologically sensitive areas as specified in Annexure-I of this Notification;

xii) Any construction activity between the Low Tide Line and High Tide Line except facilities for carrying treated effluents and waste water discharges into the sea, facilities for carrying sea water for cooling purposes, oil, gas and similar pipelines and facilities essential for activities permitted under this Notification; and

xiii) Dressing or altering of sand dunes, hills features including landscape changes for beautification, recreational and other such purpose, except as permissible under this Notification.
Regulation of permissible activities:
All other activities except those prohibited in para 2 above, will be regulated as under:

1) Clearance shall be given for any activity within the Coastal Regulation Zone only if it requires water front and foreshore facilities.

2) The following activities will require environmental clearance from the Ministry of Environment & Forests, Government of India, namely:
   
i) Construction activities related to Defence requirements for which foreshore facilities are essential (e.g. slipways, jetties etc); except for classified operational component of defence projects for which a separate procedures shall be followed, (Residential buildings, office buildings, hospital complexes, workshops shall not come within the definition of operational requirements except in very special cases and hence shall not formally be permitted in the CRZ);

   ii) Operational constructions for ports and harbours and light houses requiring water frontage; jetties wharves, quays, slipways etc. (Residential buildings & office buildings shall not come with the definition of operational activities except in very special cases and hence shall not normally be permitted in the CRZ);

   iii) Thermal power plants (only foreshore facilities for transport of raw materials facilities for in-take of cooling water and out fall for discharge of treated waste water/cooling water); and

   iv) All other activities with investment exceeding rupees five crores

1) The coastal States and Union Territory Administrations shall prepare, within a period of one year from the date of this Notification, Coastal Zone Management Plans identifying and classifying the CRZ areas within their respective territories in accordance with the guidelines given in Annexures I and II of the Notification and obtain approval (with or without modifications) of the Central Government in the Ministry of Environment & Forests,

ii) Within the framework of such approved plans, all development and activities within the CRZ other than those covered in para 2 and para 3(2) above shall be regulated by the State Government. Union Territory Administration or the local authorities as the case may be in accordance with the guidelines given in Annexures I and II of the Notification; and

iii) In the interim period till the Coastal Zone Management Plans mentioned in para 3(3)(i) above and prepared and approved, all developments and activities within the CRZ shall not violate the provisions of this Notification. State Governments and Union Territory Administrations shall ensure adherence to these regulations and violations, if any, shall be subject to the provisions of the Environment (Protection) Act, 1986.
Procedure for monitoring and enforcement:

The Ministry of Environment & Forests and the Government of State or Union Territory and such other authorities at the State or Union Territory levels, as may be designated for this purpose, shall be responsible for monitoring and enforcement of the provisions of their notification within their respective jurisdictions.

{N.K.-15619/1/841A-III (Vol.II)}

R. RAJAMANI

Secretary
COASTAL AREA CLASSIFICATION AND DEVELOPMENT REGULATIONS

(Classification of Coastal Regulation Zone)

6(1) For regulating development activities, the coastal stretches within 500 metres of High Tide Line of the landward side are classified into four categories, namely:

Category I (CRZ-I)

i) Areas that are ecologically sensitive and important, such as national parks/marine parks, sanctuaries, reserve forests, wildlife habitats, mangroves, corals/coral reefs, areas close to breeding and spawning grounds of fish and other marine life, areas of outstanding natural beauty/historically heritage areas, areas rich in genetic diversity, areas likely to be inundated due to rise in sea level consequent upon global warming and such other areas as may be declared by the Central Government or the concerned authorities at the State/Union/Territory level from time to time

ii) Area between the Low Tide Line and the High Tide Line

Category-II (CRZ-II)

The area that have already been developed upto or close to the shore-line. For this purpose, "developed area" is referred to as that area within the municipal limits or in other legally designated urban areas which is already substantially built up and which has been provided with drainage and approach roads and other infrastructural facilities, such as water supply and sewerage mains.

Category-III (CRZ-III)

Areas that are relatively undisturbed and those which do not belong to either Category-I or II. These will include coastal zones in the rural areas (developed and undeveloped) and also areas within Municipal limits or in other legally designated urban areas which are not substantially built up

Category-IV (CRZ-IV)

Coastal stretches in the Andaman & Nicobar, Lakshadweep and small islands except those designated as CRZ-1, CRZ-II or CRZ-III

Norms for Regulation of Activities

6(2) The development or construction activities in different categories of CRZ areas shall be regulated by the concerned authorities at the State/Union Territory level, in accordance with the following norms

CRZ-I

No new construction shall be permitted within 500 metres of the High Tide Line. No construction activity, except as listed under 2(xii), will be permitted between the Low Tide Line and the High Tide Line.
CRZ-II

i) Buildings shall be permitted neither on the seaward side of the existing road (or roads proposed in the approval Coastal Zone Management Plan of the area) nor on seaward side of existing authorised structures. Buildings permitted on the landward side of the existing and proposed roads/existing authorised structures shall be subject to the existing local Town and Country Planning Regulations including the existing norms of FSI/FAR.

ii) Reconstruction of the authorised buildings so be permitted subject to the existing FSI/FAR norms and without change in the existing use.

iii) The design and construction of buildings shall be consistent with the surrounding landscape and local architectural style.

CRZ-III

i) The area upto 200 metres from the High Tide Line is to be earmarked as 'No Development Zone'. No Construction shall be permitted within this zone except for repairs of existing authorised structures not exceeding existing FSI, existing plinth area and existing density. However, the following uses may be permissible in this zone agriculture, horticulture, gardens, pastures, parks, playfields, forestry and salt manufacture from sea water.

ii) Development of vacant plots between 200 and 500 metres of High Tide Line in designated areas of CRZ-III with prior approval of Ministry of Environment & Forests (MEF) permitted for construction of hotels beach resorts for temporary occupation of tourists/visitors subject to the conditions as stipulated in guidelines at Annexure-II.

iii) Construction/reconstruction of dwelling units between 200 and 500 metres of the High Tide Line permitted so long it is within the ambit of traditional rights and customary uses such as existing fishing villages and gothans. Building permission for such construction/reconstruction will be subject to the conditions that the total number of dwelling units shall not be more than twice the number of existing units; total covered area on all floors shall not exceed 33 per cent total of the plot size; the overall height of construction shall not exceed 9 metres and construction shall not be more than 2 floors (ground floor plus one floor).

iv) Reconstruction/alteration of an existing authorised building permitted subject to (i) to (iii) above.

CRZ-IV

Andaman-Nicobar Islands

i) No new construction of building shall be permitted within 200 metres of the HTL.

ii) The buildings between 200 and 500 metres from the High Tide Line shall not have more than 2 floors; shall not be more than 50 per cent of the plot size and the total height of construction shall not exceed 9 metres;

iii) The design and construction of building shall be consistent with the surrounding landscape and local architectural style.

iv) Cenals and sand from the beaches and coastal waters shall not be used for construction and other purposes.
v) Dredging and underwater blasting in and around coral formations shall not be permitted; and

vi) However, in some of the islands, coastal stretches may also be classified into categories CRZ-I or II or III with the prior approval of Ministry of Environment and Forests and in such designated stretches, the appropriate regulations given for respective categories shall apply.

Lakshadweep and small islands:

i) For permitting construction of buildings, the distance from the High Tide Line shall be decided depending on the size of the islands. This shall be laid down for each island, in consultation with the experts and with approval of the Ministry of Environment & Forests keeping in view the land use requirements for specific purposes vis-a-vis local conditions including hydrological aspects erosion and ecological sensitivity.

ii) The buildings within 500 metres from the HTL shall not have more than 2 floors (ground and 1st floor). The total covered area on all floors shall not be more than 50 percent of the plot size and the total height of construction shall not exceed 9 metres.

iii) The design and construction of buildings shall be consistent with the surroundings landscape and local architectural style.

iv) Corals and sand from the beaches and coastal waters shall not be used for construction and other purposes.

v) Dredging and underwater blasting in and around coral formations shall not be permitted; and

vi) However, in some of the islands, coastal stretches may also be classified into categories CRZ-I or II or III, with the prior approval of Ministry of Environment & Forests and in such designated stretches, the appropriate regulations given for respective Categories shall apply

ANNEXURE-II

GUIDELINES FOR DEVELOPMENT OF BEACH RESORTS/HOTELS IN THE DESIGNATED AREAS OF CRZ-III FOR TEMPORARY OCCUPATION OF TOURIST/VISITORS, WITH PRIOR APPROVAL OF THE MINISTRY OF ENVIRONMENT & FORESTS.

7(i) Construction of beach resorts/hotels with prior approval of MEF in the designated areas of CRZ-III for temporary occupation of tourist/visitors shall be subject to the following conditions:

i) The project proponents shall not undertake any construction (including temporary construction and fencing or such other barriers) within 200 metres (in the landward side) from the High Tide Line and within the area between the Low Tide and High Tide Lines.

ii) The total plot size shall not be less than 0.4 hectares and the total covered area on all floors shall not exceed 33 per cent of the plot size i.e. the FSI shall not exceed 0.33. The open area shall be suitably landscaped with appropriate vegetal cover.

iii) The construction shall be consistent with the surrounding landscape and local area architectural style.
iv) The overall height of construction up to the highest ridge of the roof, shall not exceed 9 metres and the construction shall not be more than 2 floors (ground floor plus one upper floor).

v) Ground water shall not be tapped within 200 m of the HTL; within the 200 metre 500 metre zone it can be tapped only with the concurrence of the Central/State Ground Water Board.

vi) Extraction of sand, levelling or digging of sandy stretches except for structural foundation of building, swimming pool shall not be permitted within 500 metres of the High Tide Line;

vii) The quality of treated effluents, solid wastes, emissions and noise levels etc., from the project area must conform to the standards laid down by the competent authorities including the Central/State Pollution Control Board and under the Environment (Protection) Act, 1986.

viii) Necessary arrangements for the treatment of the effluents and solid wastes must be made. It must be ensured that the untreated effluents and solid wastes are not discharged into the water or on the beach; and no effluents/solid waste shall be discharged on the beach.

ix) To allow public access to the beach, at least a gap of 20 metres width shall be provided between any two hotels/beach resorts, and in no case shall gaps be less than 500 metres apart and

x) If the project involves diversion of forest land for non-forest purposes, clearance as required under the Forest (Conservation) Act, 1980 shall be obtained. The requirements of other Central and State laws as applicable to the project shall be met with.

xi) Approval of the State/Union Territory Tourism Department shall be obtained.

7(2) In ecologically sensitive areas (such as marine parks, mangroves, coral reefs, breeding and spawning grounds of fish, wildlife habitats and such other areas as may be notified by the Central/State Government Union Territories construction of beach resorts/hotels shall not be permitted.

Source: *The Gazette of India, Extra-ordinary No 105, Feb 20, 1991*
APPENDIX - VI.1

Coastal Regulation Zone (Amendment) Notification

MINISTRY OF ENVIRONMENT AND FORESTS

NOTIFICATION

New Delhi, the 18th August, 1994

S.O. 595 (E) --- Whereas by the notification of the Government of India in the Ministry of Environment and Forest No.S.O. 114 (E), dated the 19th February, 1991 (hereinafter referred to as the said notification) Coastal Stretches were declared Coastal Regulation Zones and restrictions were imposed on the setting up and expansion of industries, operations and processes in the said zone;

And whereas the Central Government constituted an Export Committee under the Chairmanship of Shri. B.B. Volra to examine the issues relating to tourism and hotel facilities in the coastal zones;

And whereas the said Committee submitted its report to the Central Government on 31st day of December 1992 and the Central Government after considering the said report proposed to make certain amendment in the said notification;

And whereas vide No.S.O.859 (E), dated the 11th November, 1993 the objections/suggestions from the public were invited and duly considered and examined by the Central Government;

Now, therefore, in exercise of the powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule 5 of the Environment (Protection) Rules 1986, the Central Government hereby makes the following amendments in the aforesaid notification ---

[Amendment to No.S.O. 114 (E), dated the 19th February, 1991]

In exercise of the powers conferred by clause (a) of sub-rule (3) of rule 5 of the environment Protection Rule, 1986, the Central Government hereby makes the following amendments in the notification of the Government of India in the Ministry of Environment and Forests No.S.O. 114(E), dated the 19th February, 1991,

Namely ---

(a) in paragraph 1, for the portion beginning with the words “For purposes of this notification, the High Tide Line” and ending with the words “width of the creek, river or back water whichever is less”, the following shall be substituted, namely:---

“For the purposes of this notification, the High Tide Line means the line on the land upto which the highest water line reaches during the spring tide and shall be demarcated uniformly in all parts of the country by the demarcating authority so
authorised by the Central Government in consultation with the Surveyor General of India.

Note:

The distance from the High Tide Line shall apply to both sides in the case of rivers, creeks and backwaters and may be modified on a case by case basis for reasons to be recorded while preparing the Coastal Zone Management Plans. However, this distance shall not be less than 50 metres or the width of the creek, river or backwater whichever is less. The distance up to which development along rivers, creeks and backwaters is to be regulated shall be governed by the distance up to which the tidal effect of sea is experienced in rivers, creeks or backwaters, as the case may be; and should be clearly identified in the Coastal Zone Management Plans;

(b) In Annexure II, in paragraph 7, in sub-paragraph (1), for item (i), the following items shall be substituted, namely:

(i) The project proponent shall not undertake any construction within 200 metres in the landward side from the High Tide Line and within the area between the Low Tide and High Tide Line.

Provided that the Central Government may, after taking into account geographical features and overall Coastal Zone Management Plans, and for reasons to be recorded in writing, permit any construction subject to such conditions and restrictions as it may deem fit;

(ia) live fencing and barbed wire fencing with vegetative cover may be allowed around private properties subject to the condition that such fencing shall in no way hamper public access to the beach;

(ib) no flattening of sand dunes shall be carried out;

(ie) no permanent structures for sports facilities shall be permitted except construction of goal posts, net posts and lamp posts

(id) construction of basements may be allowed subject to the condition that no objection certificate is obtained from the State Ground Water Authority to the effect that such construction will not adversely affect free flow of ground water in that area. The State Ground Water Authority shall take into consideration the guidelines issued by the Central Government before granting such no objection certificate

Explanation:

Though no construction is allowed in the no development zone for the purposes of calculation of FSI, the area of entire plot including the portion which falls within the no development zone shall be taken into account.”


APPENDIX - VII

PROPOSED GUIDELINES FOR AQUACULTURE INDUSTRY (ACI)
IN TAMIL NADU

August, 1994

ZONING FOR AQUACULTURE

It seems desirable to create zones where aquaculture industry (ACI) can be set up. Coastal areas are top soils (0 to 30 cms) and sub soils (30 to 100 cms depth) show market salinity may fall in these areas. Other characteristics may include inability to cultivate these lands under paddy and oil seed crops, sea lands remaining fallow/uncultivated for the past 2-3 years, these lands being prone flooding by sea water, presence of salt manufacturing activity in the vicinity etc. ACIs draw water either directly from the sea or from creeks which carry sea water tides. For sea based ACI, the width of the zone may be upto 2 m from the high tide water mark. In other areas where there are creeks, the width of aquaculture zone may be drawn with reference to the length of the creek.

LEASING OF POROMBOKE (GOVT) LANDS FOR AQUACULTURE

Leasing of poromboke (Govt) lands for aquaculture per-se may not be done for the following reasons:

(a) Extent of these lands at micro (village) level is very small;

(b) These lands, by their very nature, are meant for enjoyment of all people (both rich and poor) and for all times (i.e. now and for future).

(c) Some of these lands fall in prohibited categories such as burial grounds, burning grounds, access to burial grounds, grazing grounds, river course poromboke etc. Therefore, they need to be preserved for their respective original purpose/use.

(d) Even those poromboke lands which do not fall in prohibited categories may be carefully preserved for enjoyment and benefit of all people.

(e) Exception to the above guidelines will be leasing of Govt land, in very small extent, to private parties for aquaculture so as to provide the private parties access to sea water. Even in this case, the benefited private party must compensate the Govt for the lands so leased to the extent of 150%. Since compensatory land is to be obtained from private parties, no lease rent may be charged.

(f) There are certain instances where ACIs may hold surround small extent of poromboke land. Some of these ACIs have been become operational. In such cases, ACIs may be permitted to hold these lands so that their farms are not fragmented provided ACIs compensate the Govt by surrendering their privately purchased lands measuring 150% of the extent of Govt lands received by them.

IRRIGATING AND FLOOD CHANNELS

Whenever existing of intending ACIs find that irrigation/flood channels of PWD run through their properties, they may maintain them in "as is where is condition" as far as possible. Realignment of said channels may be done only in exceptional cases and that too as per the detailed specifications regarding depth, lining etc. of the PWD (Irrigation). The works of realignment if taken may be executed under the supervision of PWD (Irrigation) at district level.
4. SUB SOIL WATER

Since most parts of coastal area have very small columns of potable water at shallow depth (upto 6 mt below ground level), ACIs may not use deep aquifers, water may be tapped only for legitimate drinking purpose and not for aquaculture (for diluting sea water during summer months when salinity shoots up or for processing plants)

5. POLLUTION CONTROL

At present, the enclosed standard (Annexure I) is prescribed for effluents let out by ACIs into the sea - as per BP No.30, dated 21.02.1984 of Tamil Nadu Pollution Control Board. ACI is of the Opinion that this standard is not relevant to it on following grounds.

(1) it draws sea water;

(2) the load of pollutants vanes during culture period and during harvest period and hence two separate standards may seem to be desirable.

(3) aquaculture is a biological activity.

Therefore effluents are turbid. They have substantial quantities of total suspended solids, phosphates, nitrates, nitrites, ammonia, free ammonia etc. These pollutants are present to a much smaller extent during culture period which lasts for about 120 days. During this period daily exchange of water takes place, resulting in 10% - 20% replacement of pond water. Thus once in every 5 days or once in every 10 days, the entire quantity of pond water is changed. Pumping of this water can be done usually at 10% of the pond quantity every day or 20% of the pond quantity. This is called water exchange. Therefore, during culture period, the water which is exchanged carries small quantities of pollutants. We can call it diluted effluent. On the other hand, at the end of culture period, harvest takes place by completely emptying the culture pond. There is heavy load of pollutants in the effluents discharged after harvest. Therefore, the ACIs may like to have two separate standards for treated effluents i.e. (a) one for culture period and (b) the other for harvest period. ACIs may suggest with reasons as to what those standards should be. ACIs may also suggest what are the practices that they follow/intend to follow to treat effluents before discharging them into the sea.

6. TREATED EFFLUENTS BEFORE DISCHARGE

Effluents need to be collected and treated before let out, at the time of their final outcome from the farm. Existing and future ACIs may be required to indicate what facilities they already have for collecting and treating effluent during culture period and during harvest period so that the final effluent discharged will conform to the standards which they would now like to be recommended.

7. POLLUTION CONTROL MONITORING AND ENFORCEMENT

State Pollution Control Board will come into the picture after the ACIs are set up with District Collector's permission. They shall taken samples of effluents generated by ACIs and enforce conformity to these standards as per the Water Act.

8. CLEARANCE FOR ACIs

At present, ACIs face considerable difficulty in obtaining clearances from various agencies of the State. Each District Collector may act as the single window for giving clearance for setting up ACIs. A check list to be applied to each case by the District Collector in consultation with various district level officers of Agriculture, PWD (Irrigation), PWD (Ground Water) Pollution Control Board etc. is given in the Annexure II.

(LATIKA D.PADALKAR)

APPENDIX VIII
TAMIL NADU AQUACULTURE (REGULATION) ACT, 1995.

PART IV - SECTION 2

TAMIL NADU ACTS AND ORDINANCES

The following Act of the Tamil Nadu Legislature Assembly received the assent of the Governor the 7th April 1995 and is hereby published for general information:

ACT NO.6 of 1995

An Act to provide for the regulation of coastal aquaculture in the State of Tamil Nadu and for matters connected therewith

Be it enacted by the Legislative Assembly of the State of Tamil Nadu in the Forty Sixth year of the Republic of India as follows:

Short title, extent & commencement

1 i) This Act may be called the Tamil Nadu Aquaculture (Regulation) Act, 1995

ii) It extends to the whole of the State of Tamil Nadu

iii) It shall come into force on such date as the Government may, by notification, appoint and different dates may appointed for different areas and for different provisions of this Act

Definitions

2 In this Act, unless the context otherwise requires

a) “aquaculture” means culture in captivity in ponds, pens, enclosures or otherwise of shrimps, prawns, fish or any other aquatic life in brackish water, in saline soil but does not include fresh water aquaculture.

b) “aquaculture unit” means a coastal aquaculture unit which undertakes aquaculture.

c) “coastal aquaculture” means aquaculture in coastal stretches of land estuaries, creeks, rivers, streams, canals, or back waters influenced by tidal action,

d) “District Committee” means a District Committee constituted under Section 5,

e) “Director” means the Director of Fisheries, Tamil Nadu

f) “Eco-restoration Fund” means the Eco-restoration Fund established under section 8,

g) “Government” means the State Government,

h) “Inspecting Officer” means any Officer of the Fisheries department not below the rank of an Inspector of Fisheries, as may be authorised by the Director to exercise the powers conferred on, and discharge the duties imposed upon the Inspecting Officer under this Act, for such area as may be specified by the Director,
1) “Person” includes any company, family, firm, society or association of individuals, whether incorporated or not;

2) “Places of heritage” means any such place of historical, archaeological or artistic importance which has been in existence for not less than one hundred years, as may be prescribed.

3) 1) No person shall, without a licence granted by the Director and except in accordance with the conditions specified in such licence, establish or, or after the date of commencement of this Act, any aquaculture unit.

2) Every person who has established any aquaculture unit which is in existence immediately before the date of commencement of this Act, shall obtain a licence within three months from the said date in accordance with the provisions of this Act.

3) Where a person has more than one aquaculture unit, whether in the same town or village or in different towns or villages, he shall obtain a separate licence in respect of each aquaculture unit.

4) Every application for a licence under section 3 shall be in such form, containing such particulars and be accompanied by such fee not exceeding rupees five hundred as may be prescribed and shall be submitted to the District Committee.

5) 1) For the purposes of this Act, the Government may, by notification with effect from such date as may be specified therein, constitute for each district a District Committee consisting of the following members, namely:

   a) the District Collector, who shall be the Chairman of the District Committee, ex-officio, and

   b) such other officials as may be prescribed.

6) 1) The District Committee may meet as often as may be necessary and shall, subject to the provisions of sub-section (2) observe such rules of procedure in regard to transaction of business at its meetings (including the quorum at meetings) as may be prescribed.

2) The Chairman of the District Committee, or in his absence any member nominated by him in that behalf, shall preside at a meeting of the District Committee.

7) 1) The District Committee shall examine every application received under section 4 and make such enquiries as it considers necessary in all respects and forward the same to the Director with its remarks in such manner and within such time, as may be prescribed.

2) The District Committee shall, while examining the applications under sub-section (1), have regard to the following matters, namely:

   a) the application for grant of licence is in compliance with the provisions of this Act and the rules made thereunder.
h) the proposed site for aquaculture unit does not fall in the prohibited area

Explanation - For the purpose of this clause, "prohibited area" means wet lands including biodiversity rich areas like, mangroves and swamps, migratory bird routes and breeding grounds, sanctuaries, national parks and biosphere reserves designated as protected areas or areas committed to community conservation or production forestry, place of heritage or place of worship, grey or dark areas in the map prepared by the Public Works Department (Ground Water).

c) cultivable lands are not converted for aquaculture;

d) aquaculture unit does not envisage drawal of ground water for culture purpose;

e) aquaculture unit shall not be established -

A) in the buffer zone ranging from -

i) fifty to one hundred metres width in the case of sea water based farm, and

ii) twenty to twenty five metres width in the case of estuarine water based farms,

B) 1) within one hundred metres from the outer border of a village or town, having a population of less than five hundred,

ii) within three hundred metres from the outer border of a village or town, having a population of more than five hundred, and

iii) within two kilo metres from any place of heritage,

Explanation - For the purpose of this clause

i) "buffer zone" means an intermediary zone between aquaculture zone and non-aquaculture zone,

ii) "aquaculture zone" means an area where aquaculture activities are permitted or taken up under this Act,

f) there shall be a gap of not less than twenty metres for every five hundred metres of sea water based farms and five metres for every three hundred metres of estuarine water based farms, for the access to the sea and to the estuary or brackish water river, as the case may be, and

g) such other matters as may be prescribed
1) There shall be established a fund to be called a Eco-restoration Fund which shall be utilised for correcting the imbalances caused to the environment by aquaculture units.

2) Every aquaculture unit shall deposit a sum of rupees five thousand per hectare to the Eco-restoration Fund which shall not bear any interest.

3) The Eco-restoration Fund shall be operated by the Director in such manner as may be prescribed.

4) Appropriate eco-restoration work shall be carried out by the aquaculture unit concerned to the satisfaction of the Director and in such cases seventy-five per cent of the money deposited by that aquaculture unit may be refunded by the Director after consulting the District Committee, at the end of such period, as may be prescribed.

5) Where the eco-restoration work has not been carried out by the aquaculture unit concerned, the money deposited by such aquaculture unit shall not be refunded to it and the eco-restoration work in such cases shall be carried out by the Director from out of the money deposited by such aquaculture unit.

Grant and renewal of licence

1) On receipt of an application from the District Committee with its remarks the Director, if satisfied, may, grant a licence subject to the conditions specified in sub-section (2), or refuse to grant a licence.

Provided that a licence shall not be refused unless the applicant has been given an opportunity of making his representation.

Central Act 6 of 1974

2) The following shall be the conditions of every licence issued under sub-section (1):

a) the aquaculture unit shall not be established without the consent of the Tamil Nadu Pollution Control Board constituted under the Water (Prevention and Control of Pollution) Act, 1974.

b) the aquaculture unit shall deposit a sum of rupees five thousand per hectare to the Eco-restoration Fund within such time as may be prescribed;

c) the aquaculture unit shall not divert the drainage channels of the Public Works Department without the approval of that department;

d) the aquaculture unit shall design the lay out and construction of farms providing for effluent settlement ponds with a view to discharge the treated effluents in conformity with the standards prescribed by the Tamil Nadu Pollution Control Board;

e) the aquaculture unit shall adopt such sustainable aquaculture practices in harmony with the environment as may be prescribed.
f) the aquaculture unit shall regulate the use of chemicals and drugs in such a way that they remain below detection level at the point of effluent discharge, and

g) such other conditions as may be prescribed.

3) Every licence granted under this section shall be valid for a period of five years from the date of its grant and may be renewed, from time to time, and the provisions of this Act shall apply in relation to a renewal of a licence as they apply in relation to the grant of a licence.

**Power to cancel or suspend licence**

10 1) Without prejudice to any other penalty to which the licensee may be liable under this Act, the Director may, at any time, by order in writing, cancel or suspend any licence granted or renewed under section 9, if

a) such licence has been obtained by fraud, misrepresentation or suppression of material particulars, or

b) the licensee has contravened any of the provisions of this Act or the rules made thereunder or any of the conditions subject to which the licence was granted.

2) Before cancelling or suspending a licence under subsection (1), the Director shall give the licensee, an opportunity of making his representation.

**Return of licence**

11 On the expiry of this licence or on receipt of any order suspending or cancelling it, the licensee shall return the licence to the Director,

Provided that the Director may, after such expiration or cancellation, give such reasonable time as he thinks fit to the licensee to enable him to wind up his aquaculture unit

12 If a licence granted is lost, destroyed, mutilated or damaged, the Director shall, on application and on payment of such fee not exceeding rupees fifty as may be prescribed, issue a duplicate licence.

13 The Director may issue such orders and directions of a general character as he may consider necessary in respect of any matter relating to the licences to carry on the business of aquaculture, to any licensee or licensees generally and every licensee shall give effect to such orders and directions.

14 1) For the purpose of carrying out the provisions of this Act or the rules made thereunder, the Inspecting Officer may, at all reasonable hours and with or without assistance —

a) enter into any aquaculture unit and inspect or examine the aquaculture land or its “water spread” area.
b) order the production of any account book, register, record or other document relating to such aquaculture unit and take or cause to be taken extracts from or copies of, such document.

c) ask all necessary questions and examine any person having control of, or employed in connection with, such aquaculture unit.

2) The licensee and all persons employed in connection with the aquaculture unit shall afford the Inspecting Officer all reasonable access and facilities for such inspection and examination as may be required for the purposes aforesaid and shall be bound to answer all questions to the best of their knowledge and belief, to produce documents in their possession, and to furnish such other information in relation to the aquaculture unit as may be required by such officer.

3) Where the Inspecting Officer, an inspection under-section (1) is satisfied that the licensee has contravened any of the provisions of this Act or the rules made thereunder or any of the conditions subject to which the licence was granted, the Inspecting Officer shall report the fact together with relevant particulars to the Director.

4) On receipt of the report under sub-section (3), if the Director is satisfied that the licensee has contravened any of the provisions of this Act or the rules made thereunder or any of the conditions subject to which the licence was granted, he may make such order as he thinks fit

Provided that no order under this sub-section adversely affecting the licensee shall be made unless the licensee has had a reasonable opportunity of making his representation.

15 11 Any person aggrieved by -- Appeal

a) an order of the Director refusing to grant or renew a licence or cancelling or suspending a licence under this Act, or

b) an order of the Director under sub-section (4) of section 14

may, in such form, in such manner and within such period, as may be prescribed, appeal to the Government;

Provided that the Government may entertain an appeal after the expiry of the prescribed period, if they are satisfied that the appellant was prevented by sufficient cause from filing the appeal in time.
2) On receipt of an appeal under sub-section (1), the Government shall, after giving the appellant an opportunity of being heard, pass such order on the appeal as they think fit.

1) Any person aggrieved by an order of the Government under section 15 may, within a period of sixty days from the date on which a copy of the order was communicated to him, file an application for revision of such order to the High Court:

Provided that the High Court may, within a further period of thirty days, entertain an application made after such period of sixty days, if it is satisfied that the petitioner had sufficient cause for not making the application within the said period of sixty days.

2) The application shall be in such form, verified in such manner and accompanied by such fee, as may be prescribed.

3) In disposing the application for revision, the High Court may confirm, cancel or vary such order:

Provided that no order prejudicial to any party shall be passed unless such party has been given an opportunity of being heard.

4) Every order passed under this section shall be final.

(Offences by companies)

17

1) If the person committing an offence under this Act is a company, every person who at the time the offence was committed, was in charge of, and was responsible to the company for the conduct of the business of the company, as well as the company, shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly.

Provided that nothing contained in this subsection shall render any such person liable to any punishment if he proves that the offence was committed without his knowledge or that he exercised all due diligence to prevent the commission of such offence.

2) Notwithstanding anything contained in sub-section (1) where any offence under this Act has been committed by a company and it is proved that the offence has been committed with the consent or connivance of, or is attributable to any neglect on the part of, any director, manager, secretary or other officer of the company, such director, manager, secretary or other officer shall also be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

Explanation-

For the purpose of this section,

a) "company" means anybody corporate and includes a firm society or other association of individuals; and
b) “Director” in relation to -

i) a firm means a partner in the firm.

ii) a society or other association of individuals, means the person who is entrusted, under the rules of the society or other association, with the management of the affairs of the society or other association, as the case may be.

**Penalties**

1) If any person contravenes, or attempts to contravene, or knowingly abets the contravention of, any of the provisions of this Act or any rule or order made thereunder, he shall be punishable with fine which may extend to twenty thousand rupees and in the case of a continuing contravention, with a further fine which may extend to one thousand rupees for each day during which such contravention is continued and conviction thereafter.

2) If any person wilfully obstructs any authority or officer, from entering any aquaculture unit in the exercise of any power confered on it or him by or under this Act, he shall be punishable with fine which may extend to one thousand rupees.

**Bar of jurisdiction of civil courts**

Except as otherwise provided in this Act, no civil court shall have jurisdiction to decide or deal with any question which is by or under this Act required to be decided or dealt with by any authority or officer of the Government.

**Cognizance of offence**

No court shall take cognizance of any offence punishable under this Act except on a report in writing of the fact constituting such offence made by an authority or officer authorised by the Government in this behalf.

**Jurisdiction of criminal court**

No court inferior to that of a Metropolitan Magistrate or a Judicial Magistrate of the first class shall try any offence punishable under this Act.

**Inspecting Officer, etc. to be public servants**

Every authority and every officer duly authorised to discharge any duty imposed on it or him by or under this Act, shall be deemed to be a public servant within the meaning of section 21 of the Indian Penal Code.

**Indemnity**

1) No suit, prosecution or other legal proceeding shall lie against any authority or officer or servant of the Government for anything which is in good faith done or intended to be done in pursuance of this Act or any rule or order made thereunder.

2) No suit or other legal proceeding shall lie against the Government for any damage caused or likely to be caused by virtue of the provisions of this Act or by anything which is in good faith done or intended to be done in pursuance of this Act or any rule or order made thereunder.

24. The provisions of this Act shall have effect notwithstanding anything inconsistent therewith contained in any other law for the time being in force or in any custom usage or contract.

**Act to override other laws**
1) The Director may, by order notified in the Tamil Nadu Government Gazette, authorise any authority or officer to exercise any of the powers vested in him by or under this Act and may, in like manner, withdraw such authority.

2) a The exercise of any power delegated under sub-section (1) shall be subject to such restrictions and conditions as may be specified in such order.

b The Director shall also have the power to control and revise the acts or proceedings of any authority or officer so empowered.

25

1) The Government may make rules to carry out the purposes of this Act.

2) In particular and without prejudice to the generality of the foregoing power, such rules may provide for all or any of the following matters, namely:

a the form of and the manner of making an application for a licence, the fees for such licence and renewal thereof, the conditions subject to which, and the form in which a licence may be granted and the period for which a licence may be renewed, under section 9;

b the fee payable in respect of a duplicate licence under section 12;

c the form and manner in which, and the period within which, an appeal may be made under section 15 and the procedure to be followed by the Government in disposing of the appeal;

d the form and matter of verification, of the application and the fee which shall accompany the application, for revision under section 16;

e any other matter which is to be, or may be, provided for, by rules under this Act.

3) a All rules made under this Act shall be published in the Tamil Nadu Government Gazette, and unless, they are expressed to come into force on a particular day, shall come into force on the day on which they are so published.

b all notifications issued under this Act shall, unless they are expressed to come into force on a particular day, come into force on the day on which they are published.
4) Every rule made or notification issued under this Act shall, as soon as possible after it is made or issued be placed on the table of the Legislative Assembly and if, before the expiry of the session in which it is so placed or the next session, the Assembly makes any modification in any such rule or notification or the Assembly decides that the rule or notification should not be made or issued, the rule or notification shall thereafter have effect only in such modified form or be of no effect, as the case may be, so, however, that any such modification or annulment shall be without prejudice to the validity of anything previously done under that rule or notification.

(By order of the Governor)

M Muniraman
Secretary to Government, Law Department.

Source: Tamil Government Gazette Extraordinary, No 182, April 10, 1995, Chennai
APPENDIX – VIII.1
PART II - SECTION 2

NOTIFICATIONS OR ORDERS OF INTEREST TO A SECTION OF THE PUBLIC ISSUED BY SECRETARIAT DEPARTMENTS

NOTIFICATIONS BY GOVERNMENT

ANIMAL HUSBANDRY AND FISHERIES DEPARTMENT


(G O Ms. NO.79, Animal Husbandry and Fisheries (FS-IV), 2nd May 1995)

No II (2)AHF/1711(a-1)95

In exercise of the powers conferred by sub-section (3) of section 1 of the Tamil Nadu Aquaculture (Regulation) Act, 1995 (Tamil Nadu Act 6 of 1995), the Governor of Tamil Nadu hereby appoints the 3rd day of May 1995 as the date on which all the provisions of the said Act shall come into force, in the whole of the State of Tamil Nadu.

CONSTITUTION OF DISTRICT COMMITTEE UNDER TAMIL NADU AQUACULTURE (REGULATION) ACT, 1995.

(G O Ms. NO 81, Animal Husbandry and Fisheries (FS-IV), 2nd May 1995)

No II (2)AHF/1711(a-1)95

In exercise of the powers conferred by sections 5 of the Tamil Nadu Aquaculture (Regulation) Act, 1995 (Tamil Nadu Act 6 of 1995), the Governor of Tamil Nadu hereby constitutes a District Committee for the purposes of the said Act in each of the districts specified below, with effect from and from the 3rd May, 1995, under the Chairmanship of the concerned District Collectors, namely -

1. Chonaghalpatu-MGR
2. Villupuram-Ramasamy Padayachar
3. Nagapattinam-Quaid-e-Mileth
4. Ramanathapuram
5. Nelloi Kattabomman
6. South Arcot-Vallalar
7. Thanjavur
8. Pudukottai
9. V.O.Chidambaram
10. Kanyakumari

2. The following officials in the concerned Districts shall be members of the respective District Committee, namely -

i. Chief Executive Officer, Brackish Water Fish Farmers Development Agency having jurisdiction over the district;

ii. Joint Director of Agriculture having jurisdiction over the district;

iii. Executive Engineer (Irrigation), Public Works Department;

iv. Executive Engineer (Groundwater), Public Works Department;

v. District Forest Officer,
vii. Regional Deputy Director, Town and Country Planning having jurisdiction over the district

3 Under sub-section (2) of section 5 of the Tamil Nadu Aquaculture (Regulation) Act 1995 (Tamil Nadu Act 6 of 1995). The Chief Executive Officer, Brackish Water Fish Farmers Development Agency having jurisdiction over the district is hereby authorised to be the Member-Secretary of the concerned District Committee - *ex officio*

4 The District Committee shall be treated as a First Class Committee for purposes of drawing Travelling Allowance and Daily Allowance.

G. Bhujanga Rao
Secretary to Government

APPENDIX - IX

MINISTRY OF AGRICULTURE, GOVERNMENT OF INDIA, 1995

GUIDELINES FOR SUSTAINABLE DEVELOPMENT AND MANAGEMENT OF BRACKISHWATER AQUACULTURE

BACKGROUND

1. Aquaculture entails managed farming or culture of organisms in freshwater or saline or brackishwater areas for the purpose of enhancing production, both for domestic and export markets. Aquaculture produce is also put into good use in other industries / activities such as pharmaceutical or cosmetics. The choice of technology, scale and intensity of aquaculture operations vary a great deal and hence would determine the environmental and socio-cultural impacts of aquaculture. Planned development of aquaculture also results in development of several ancillary / associated activities such as seed production, feed production and processing units.

2. Aquaculture is a viable means of diversification of fisheries to increase fish production both for domestic consumption and export, rural upliftment, employment and income generation to a large section of the people.

3. In some of the tropical and sub-tropical countries, uncontrolled development of intensive and super-intensive fish/shrimp culture has resulted in environment side effects.

4. As it happened in some of the South-East Asian countries, there has been a rapid expansion of shrimp aquaculture activity in India during the last 5-6 years. However, this activity has been concentrated only in certain areas, particularly Andhra Pradesh and Tamil Nadu along the east coast. It is realised that over-concentration of a large number of shrimp ponds and other related support facilities in a particular area might adversely affect the environment in the long run, if adequate steps are not taken to make the shrimp farming activities environmentally sustainable.

5. The experience gained by a number of Asian-Pacific countries particularly Taiwan, Philippines, Indonesia, China and Thailand, has shown that intensive shrimp aquaculture in these countries has led to environmental degradation, threatening the long-term sustainability of shrimp aquaculture itself. The main impacts are destruction of coastal mangroves, degradation of land resources and deterioration of water quality. Organic enrichment of ponds and the surrounding environment with shrimp pond wastes has also been linked to outbreak of diseases, poor productivity and hypernutritivation.

6. Hence there is a need to have guidelines for shrimp farmers, State Fisheries Departments, Pollution Control Boards and the Ministries of Government of India. The guidelines cover the entire gamut of shrimp farm management and measures to reduce the environmental impact of the waste water discharged from shrimp farms, treatment of such wastes and mitigation of the adverse impact of such wastes on the environment.

World aquaculture production trend

7. The world aquaculture production during 1991 from the freshwater resources was 8.3 million tonnes valued at US $ 13,679 million and from mariculture it was 4.38 million tonnes valued
at US $13,679 million and from mariculture it was 4.38 million tonnes valued at US $10,812 million.

8. Even though scientific aquaculture is of recent origin in India, there has been a steady increase in aquaculture production over the past decade. Production of finfish and shellfish from aquaculture has gone up from about 200,000 tonnes in 1980 to cover 1,350,000 tonnes during 1992-93 from a little over 735,000 ha. Water area, owing to the introduction of scientific fish/shrimp farming and artificial propagation for production, and supply of quality seed. By virtue of this, India today occupies the second position next only to China in global aquaculture production.

9. The world culture shrimp production, which was 733,000 tonnes in 1991, is reported to have declined to 689,000 tonnes during 1993. The world's top three producers of cultured shrimp in 1992 viz. China, Indonesia and Ecuador showed a slump in shrimp production during 1993. Some of the major causes cited for reduction in shrimp production include diseases caused by pollution, reduction in hatchery output, over-stocking, poor growth, mortality etc. deterioration in water quality due to shrimp farming in certain areas also appears to have compounded the problems, thus causing a slump in production.

Status of shrimp culture in India

10. Even though we have an estimated brackishwater area of about 12 lakh ha. Hardly 80,000 ha. is under shrimp farming, out of which over 80% is under traditional/ extensive farming. The remaining 20% is under modified extensive and semi-intensive farming. The shrimp aquaculture activity in the country is slowly gaining momentum and if adequate precautionary measures are not taken at this turning phase, we may also face the same situation as experienced by some South-East Asian countries. For sustainable aquaculture, it is important that proper environmental monitoring plan and waste water treatment systems are integrated in shrimp aquaculture projects which are of semi-commercial or commercial nature.

11. The guidelines are given in the Annexure.

ANNEXURE

GUIDELINES

Introduction

1.1 Rapid expansion of aquaculture in India is likely to lead to a number of social and environmental side effects which have been witnessed elsewhere in the world. Therefore, the basic objective of laying down guidelines for sustainable aquaculture is to reduce/curb and eliminate any adverse impact of aquaculture on the environment keeping in view the experience of South-East Asian countries in this regard and developing it as an eco-friendly activity. These guidelines are expected to be useful in formulating appropriate shrimp farming management practices and adopting measures for mitigating the environmental impact for management of shrimp pond wastes and utilisation of the land/water resources in a judicious manner.
1.2 The activities commonly associated with shrimp farming and their likely impact on the environment are listed below. The norms to be adopted by the shrimp aquaculturists in particular and the regulatory agencies in general in the country are indicated in the same sub-para, where relevant.

2. Brackishwater Aquaculture Systems

2.1 Extensive Culture

Traditional extensive culture systems are characterised by low stocking densities (Post-Larvae, PL 1-5/pl.) and little or no supplementary feeding or fertilizer and as such are unlikely to increase the organic load of the coastal eco-systems. The extensive systems would also help in the utilisation of excess nutrients from the coastal waters through the food chain. So far no reports are available where extensive fish/shrimp culture has deprived the aquatic eco-systems of nutrients. It is further corroborated by the fact that extensive ponds in some areas have been used for sustainable aquaculture of fish/shrimp. The only problem reported with extensive system is the very acidic nature of the discharges from the newly constructed ponds, particularly located on potential acid sulphate soils.

2.2 Semi-intensive and intensive culture

2.2.1 Transition from extensive to semi-intensive and intensive shrimp farming is characterised by increasing inputs such as fertilizers and feed, consequently leading to an increase in the nutrients and organic matter. The potential for increasing the nutrients and organic loads from intensive culture tends to be higher than from semi-intensive culture. As a measure for encouraging sustainable aquaculture, intensive aquaculture which leads to over-capitalization and more stress on the ambient environment should not be encouraged and adopted.

Encourage scientific extensive & semi-intensive farming

2.2.2 Scientific extensive and semi-intensive farming of shrimp alone should be encouraged, as a means of integrating more effectively the use of land and water resources. The maximum yield from scientific extensive farming would be around 2t/ha/yr. And from semi-intensive shrimp farms, around 5t/ha/yr. In two crops

3. Impact of mangrove clearance, role of mangroves and adverse effect of their destruction

3.1 Mangroves play an important role in soil binding, as a source of nutrient cycling, as a breeding ground and nursery areas for many important fin and shellfishes. There is evidence that removal of mangroves leads to a decline in finfish and shellfish recruitment to the open waters through reduced availability of post-larvae.

3.2 Large concentration of shrimp farms in mangrove areas has not proved sustainable elsewhere in the world. Poor soils and deteriorating water quality have led to abandonment in several areas. Government permission should not be given for any construction activity within the natural mangrove areas, or ecologically sensitive wet lands, swamps, etc.
4. Impact of land resources

Multi-user conflicts

4.1 Large-scale shrimp aquaculture may bring in excessive demand on land resources, resulting in multi-user conflicts. Construction of shrimp ponds may make inroads into agricultural land. States must undertake surveys to identify lands which are fit for different purposes. They should discourage conversion of agriculture land for aquaculture. Construction of shrimp ponds on marginal land not fit for cultivation alone should be permitted.

Site selection and culture management

4.2 A vast majority of problems affecting the shrimp culturists as well as the environment could be avoided by better site selection and improved culture management. Site selection process should include proper environmental impact assessment. The existing criteria for site selection also needs to be reviewed and consideration should be given to long-term capacity of the area to sustain aquaculture development.

Master plan for development

4.3 Detailed master plans for development of aquaculture through macro and micro-level surveys of the potential areas and zonation of coastal areas delineating the land suitable and unsuitable for aquaculture using the Remote Sensing data, ground truth verification, Geographical Information System (GIS) and socio-economic aspects should be considered.

Environment Monitoring and Management Plans (EMMPs)

4.4 The shrimp culture units with a net water area of 40 ha. Or more shall incorporate an Environment Monitoring Plan and Environment Management plan covering the areas mentioned below:

- Impact on the water courses in the vicinity;
- Impact on ground water quality;
- Impact on drinking water sources;
- Impact on agricultural activity;
- Impact on soil and soil salinisation;
- Waste water treatment
- Green belt development (as per specifications of the State Pollution Control Board)
- All farms of 10 ha. And more but less than 40 ha. Shall furnish detailed information on the aforesaid aspects.

Environmental Impact Assessment

4.5 An Environmental Impact Assessment (EIA) should be made even at the planning stage by all the aquaculture units above 40 ha. Size. For 10 ha. And above a statement will be required to be given in the detailed plans. The State Pollution Control Boards should ensure that such an EIA has been carried out by the aquaculture units seeking No Objection Certificate from them, before giving the clearances for such projects.
5. Feed quality and its management

5.1 The quality of feed plays an important role in waste output in shrimp culture, and there is scope to improve pond environment by good feed management. Nutrients and organic loads are higher in ponds where shrimps are fed with trash fish and fresh diets than where pelleted moist or dry feeds are used. Fresh diets, infrequent feeding and high stocking densities, increase nitrogen loads in the waste water from the shrimp farms. A considerable amount of detritus and wastes often accumulate on the pond bottom, in areas where water circulation is slow, leading to increased BOD and release of harmful gases, which could cause stress on bottom living shrimps. On the contrary, regular feeding with pelleted diets is known to maximize the growth of shrimps and minimise the nutrient enrichment of the waste water.

5.2 The feed waste plays an important role in the total waste loading in the environment. This is because, feed settles directly on the pond bottom and the feed wastage can have a significant effect on sediment quality and ultimately the health of the shrimps which normally live at the bottom.

5.3 Hence the use of wet diets such as fresh fish and invertebrates has to be reduced and preferably avoided in shrimp aquaculture systems. Feed Conversion (FCR) should also be optimised. Monitoring of feed input is required to keep feed wastage to the minimum. Similarly, careful monitoring of standing stock in the ponds will also help to ensure that correct feeding levels are observed.

6. Impact of shrimp pond wastes

Role of nutrients and organic matter

6.1 Studies with intensive shrimp farming suggest that nutrients and organic matter in shrimp pond wastes have potential for the following impacts:

i) reduce dissolved oxygen in receiving waters, due to discharge of waste water low in dissolved oxygen and breakdown of dissolved and particulate organic matter and other waste materials (BOD and COD)

ii) hyper-nutrition and eutrophication of receiving waters, resulting in increased primary productivity (with potential risks of phytoplankton blooms), alteration of biological community structure and secondary productivity; and

iii) increased sedimentation due to organic matter, leading to changes in productivity and benthic community structure, plus possible siltation.

6.2 Such impacts depend on the quantum of waste water outflow and the capacity of the environment to assimilate the waste materials. It is, therefore, desirable to match loads with the capacity of the environment to accept the waste materials.

7. Use of chemicals, fertilizers, piscicides, antibiotics, etc.

7.1 Chemicals should be avoided in shrimp culture ponds for prevention or treatment of disease, as feed additives, disinfectants, for removal of other fish or for treatment of soil or water. However, chemicals may be required in hatcheries. Entry of such chemicals
into the natural water from the hatcheries should be carefully monitored and steps should be taken to remove such materials from the waste waters.

Use of fertilizers

7.2 Both organic and inorganic fertilizers are used widely in semi-intensive culture systems for promoting the growth of fish food organisms, particularly for the early postlarval stages. This may contribute to the nutrient load in receiving waters. Therefore, as far as possible only organic manure/fertilizers and other plant products should be used for such purposes.

Use of piscicides

7.3 Similarly, piscicides and molluscicides are widely used for removing predators and competitors from shrimp ponds. It would be advisable for aquaculturists to use only the biodegradable organic plant extracts for this purpose as they are less harmful than the chemical agents. Use of chemical piscicides in culture systems should be avoided.

Use of chemotherapeutants

7.4 Some of the chemotherapeutants such as formalin and malachite green which are commonly used as disinfectants are known to be toxic and may affect adversely the pond ecosystem, the external waters, etc. and hence their usage in culture system should be avoided.

Use of antibiotics/drugs

7.5 A number of antibiotics used in shrimp culture for preventing outbreak of disease are harmful and may result in development of shrimp pathogens resistant to such drugs and the transfer of these pathogens into human beings might result in development of resistance in human pathogens. The use of antibiotics/drugs in culture system, therefore, should be avoided.

8. Shrimp disease, production loss and environment

8.1 Outbreak of disease in shrimp culture systems is related to the environmental factors such as deterioration of water quality, sedimentation and self-pollution. The production losses are also linked to the acid sulphate soil particularly in the areas which have been developed by destruction of mangrove areas for shrimp farming.

9. Introduction of new species

9.1 Since the introduction of imported shrimp seed may bring with it a number of problems including disease, disease producing pathogens etc., the use of exotic seed in the culture systems should be prohibited.

10. Social side effects of aquaculture

10.1 Access to the sea front and other common resources to the coastal communities by the aquaculture units should be ensured. The interests of the communities and organisations in the area should be safeguarded.
10.2 Care should be taken to see that natural drainage canals which are used as water source for aquaculture units are not blocked so as to avoid flooding of low lying areas and villages.

10.3 Channelisation of saline water supplies for shrimp culture can lead to changes in the water quality and soil characteristics. Salinisation of ground water might render drinking water sources non-potable. Salt water intrusion into some of the freshwater aquifers may also be accompanied by soil salinisation in the coastal areas resulting in further devaluation of the marginal agricultural land and conflicts with local farmers and residents.

10.4 Use of common property resources like the creeks, canals, etc., may result in conflicts between traditional users and the aquaculturists. The traditional rights have to be protected in the larger interests of the community.

10.5 To avoid problems of ground water salinisation, drawal of ground water should be prohibited for shrimp aquaculture.

10.6 An appropriate legal framework should be evolved by the States for developing shrimp culture taking into account technical, environmental and social issues arising from development of this activity.

11. **Creation of buffer zones**

11.1 Spacing between adjacent farms may be location specific. In smaller farms, at least 20m. distance between two adjacent farms may be considered, particularly for allowing easy access to the common public, to the fish landing centres and other common facilities. Depending upon the size of the farms, a maximum of 100-150 m between two farms could be fixed. In case of better soil texture, the buffer zone for the estuarine based farms could be 20-25 m. A gap having a width of 20m for every 500m for every 300m distance in the case of sea based farms and a gap of 5 m width for every 300 m estuarine based farms could be provided for easy access.

11.2 A minimum distance of 50-100 metres shall be maintained the nearest agricultural land (depending upon the soil condition), canal or any other water discharge/drainage source and the shrimp culture unit.

11.3 Aquaculture units shall be located at least 100m. away from any human settlement in a village/hamlet of less than 500 population and beyond 300m. from any village/hamlet of over 500 population. For major and heritage towns it should be 2 km. All aquaculture units shall also maintain 100m. distance from the nearest drinking water sources.

11.4 Water spread area of a farm shall not exceed 60% of the total area of the land. The rest 40% could be used appropriately for other purposes. Plantation could be done wherever possible.

11.5 For the existing farms, these provisions should be made within one year of issuance of appropriate orders by the State concerned.

12.1 The unit has to abide by the rules and regulations notified by Ministry of Environment and Forests, Government of India on Water Pollution, Coastal Regulation Zone, etc.

12.2 The units with 10 ha. or more waterspread area shall obtain No Objection Certificate of the State Pollution Control Boards (SPCB) before commencement of Aquafarming. In addition all units established under Export Oriented Unit / Joint Venture guidelines will be required to obtain such certificate.

12.3 The units of 40 ha. And more waterspread area shall obtain regular consent of the SPCB under Sec. 25/26 of Water (P&CP) Act 1974.

12.4 The shrimp culture units should obtain all the requisite clearances from various Departments concerned before approaching the Government for issuance of permit/licence.


13.1 Improved pond water quality and soil quality by aeration of the pond and fertilising it with organic manures/fertilizers should be resorted to for preventing serious disease outbreaks and more effective environment management. For maintaining good water quality in shrimp farms, periodic water exchange besides aeration is very desirable. Daily water exchange of 10-30% may be effected, keeping in view the stocking density, the quality of feed administered and the phase of cultural operation.

14. Source of seed and stocking densities

14.1 Intensive shrimp seed collection from the natural sources may lead to depletion of target and non-target species of fin and shellfish. Thus seed collection from the natural resources, should be discouraged by the State Governments with a view to protecting a large spectrum of fin and shellfish species from being destroyed. There is an apparent relationship between stocking density and disease problems. Farms stocking less than 25 Pl/m² of shrimp have some advantage in avoiding disease outbreaks and in reducing the build up of harmful organic matter on pond bottoms. As far as possible only hatchery produced seed should be used in culture operation.

15. Bottom sediment management

15.1 It is advisable to let ponds dry between harvests rather than removing sediment accumulations from the pond bottom. This method is probably less environmentally damaging than indiscriminate discharge of bottom sediment. If shrimp stocking densities are kept low (below 25 Pl pr m²), then sediments can be kept in good condition by simply drying the pond between harvests. Higher stocking rates involve higher feeding rates. In these circumstances, the rate of build up of organic matter in pond bottoms may be too high to be oxidised by simple drying. Therefore, for sea based semi-intensive farms with a production capacity of 2.5 tonnes of shrimp/ha/crop a maximum stocking density of 15 Pl/Sq.m shall be prescribed. For the sea based modified extensive farms envisaging production of 1.5 tonnes of shrimp/ha/crop, the maximum density shall be 10 Pl/Sq.m.
The solid waste of the farms, including sludge and scrapped soil from the ponds should not be disposed off into the waterways. The waste shall be disposed off within the premises of the farm after adequate without allowing it to get into waterways.

16. Waste Production

Change in water quality

16.1 Direct output of waste from shrimp culture ponds and hatcheries can alter the water quality along the coastline. The dissolved and particulate nutrients and organic matters including small quantities of chemicals, micro-organisms and detritus can alter the water quality to a great extent and hence have to be properly treated before such wastes are discharged into the open waters or in the drainage canal.

Composition of waste water

16.2 The waste produced from intensive shrimp ponds consists of uneaten feed, feces and dissolved metabolites/wastes such as ammonia, urea and carbon dioxide. These wastes are also accompanied by fertilizers when they are applied.

Waste water treatment

16.3 Treatment of waste water offers scope for reducing the impact on water quality in the external environment. The biochemical oxygen demand, suspended solids, nitrogen and phosphorous contents have to be reduced in the waste waters. Therefore, the waste water before being released into the open waters has to be properly treated to reduce the organic load to desired levels. Such waste water could also be used for undertaking secondary aquaculture projects, particularly for culture of mussels, oysters, seaweed, other finfishes, etc. Such integrated projects would also offer scope for improving the waste water quality, reducing the organic and nutrient loss and producing an additional cash crop.

16.4 In addition to these biological amelioration of waste water, settlement/sedimentation ponds may be constructed along the drainage canals. The drainage canals may be designed in such a way that they are wide enough to slow down the flow of water from ponds, so as to allow the settlement of these suspended solids.

Provision of waste water treatment pond

16.5 Not less than 10% of the total pond area should be provided/equipped with waste water treatment or sedimentation pond. Every semi-intensive farm should have a sedimentation tank. The waste water should be discharged into receiving water bodies only after checking the quality for specified parameters and standards.

16.5.1 The following standards are prescribed for treatment of the waste water discharged from the aquaculture systems, hatcheries, feed mills and processing plants for the time being. They would be subject to revision as and when further investigations are undertaken for drawing up waste water standards.
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Parameters</th>
<th>FINAL DISCHARGE POINT</th>
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</thead>
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<td>Coastal Marine Waters</td>
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<td>pH</td>
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<td>2.</td>
<td>Suspended solids Mg/l</td>
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<tr>
<td>3.</td>
<td>Dissolved Oxygen Mg/l</td>
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<td>4.</td>
<td>Free Ammonia (as NH3/N) Mg/l</td>
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<td>5.</td>
<td>Biochemical Oxygen Demand-BOD (5 days @ 20°C) Max.Mg/l</td>
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<td>6.</td>
<td>Chemical Oxygen Demand-COD Mg/l Max</td>
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<td>7.</td>
<td>Dissolved Phosphate (as P) Mg/l Max</td>
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<tr>
<td>8.</td>
<td>Total Nitrogen (as N) Mg/l</td>
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</tr>
</tbody>
</table>

17. **Creation of awareness**

17.1 Appropriate human resources development and awareness programmes through training of fish/shrimp farmers and officials should be initiated for enhancing the technical knowledge and environmental awareness among the fisheries personnel, extension workers, aquaculturists and all those involved in related activities for planning and operation of sustainable aquaculture.

18. **Enactment of a legislation**

18.1 On the basis of the aforesaid guidelines and other relevant factors the State Governments may enact suitable legislation for regulating shrimp aquaculture activity in the respective States.

A check list of DOs and DON'T's is annexed.
<table>
<thead>
<tr>
<th><strong>Dos</strong></th>
<th><strong>DON'T's</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Select most appropriate site for aquaculture after detailed site investigation</td>
<td>Do not use land fit for agriculture for aquaculture</td>
</tr>
<tr>
<td>Social and physical needs of the community should be assessed and their activities should not be curbed in any way</td>
<td>Over-Capitalization of aquaculture leading to intensification and super-intensification should not be encouraged.</td>
</tr>
<tr>
<td>Give emphasis on proper environmental impact assessment at project planning stage itself.</td>
<td>Destruction of mangrove areas and ecologically sensitive wet lands and conversion of agricultural and other productive lands should not be permitted.</td>
</tr>
<tr>
<td>Identify zones of suitable and unsuitable areas using remote sensing data, Geographic Information System etc., and prepare Master plan for development.</td>
<td>Traditional aquaculture in large areas with low productivity levels should not be encouraged in future.</td>
</tr>
<tr>
<td>Existing traditional system may be attempted to be upgraded.</td>
<td>Chemicals, antibiotics, piscicides, etc., in hatchery and culture systems shall not be used.</td>
</tr>
<tr>
<td>Encourage scientific extensive and semi-intensive aquaculture. Abide by all rules and regulations of Central/State Governments.</td>
<td>Seed collection from wild for stocking the ponds should not be encouraged.</td>
</tr>
<tr>
<td>Maintain specified distance between farm units, between nearest fresh water canal and an aquaculture unit and also from the nearest drinking water source.</td>
<td>Do not over-stock the ponds.</td>
</tr>
<tr>
<td>Have separate water supply and drainage system</td>
<td>Do not use wet diets for feeding shrimps.</td>
</tr>
<tr>
<td>Use organic manure and fertilizers at optimal doses</td>
<td>Do not discharge the waste water into the open environment or drainage canal without proper treatment.</td>
</tr>
<tr>
<td>Dos</td>
<td>DONT's</td>
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<tr>
<td>--------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Resort to aeration and daily water</td>
<td>Do not infringe on the common</td>
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<tr>
<td>exchange for maintaining good</td>
<td>property resources leading to</td>
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<tr>
<td>water and soil quality and for</td>
<td>conflicts between the users.</td>
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<tr>
<td>reducing organic load.</td>
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<tr>
<td>- Use hatchery produced seed for</td>
<td></td>
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<tr>
<td>stocking</td>
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<tr>
<td>- Use only dry or semi-moist diet</td>
<td></td>
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<tr>
<td>with optimal feed conversion ratio</td>
<td></td>
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<tr>
<td>- Monitor feed input for keeping</td>
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<tr>
<td>feed waste to a minimum</td>
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<tr>
<td>- Allow the ponds to dry between</td>
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<tr>
<td>harvests</td>
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<tr>
<td>- Keep stocking densities at</td>
<td></td>
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<tr>
<td>prescribed levels for extensive and</td>
<td></td>
</tr>
<tr>
<td>semi-intensive practices.</td>
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<tr>
<td>- Incorporate Environment</td>
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<tr>
<td>Monitoring Plan and Environment</td>
<td></td>
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<tr>
<td>Management Plan in all projects</td>
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<tr>
<td>above 10 ha. area</td>
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<tr>
<td>- Treat waste water for reducing</td>
<td></td>
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<tr>
<td>organic load and excess materials</td>
<td></td>
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<tr>
<td>- Provide not less than 10% total</td>
<td></td>
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<tr>
<td>pond area for treatment of waste</td>
<td></td>
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<tr>
<td>water</td>
<td></td>
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<tr>
<td>- Discharge waste water as per</td>
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<tr>
<td>standard prescribed for treatment of</td>
<td></td>
</tr>
<tr>
<td>wastes</td>
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</tr>
</tbody>
</table>

Source: Ministry of Food and Agriculture, Department of Agriculture and Co-operation, New Delhi, 1996.
The Main Points of The Supreme Court Judgement, 11 December 1996


2- The authority so constituted by the Central Government shall implement “the precautionary procedure” and “the Polluter Pays” principle.

3- No shrimp culture pond can be constructed on setup within the coastal regulation zone as defined in the CRZ notification. This shall be applicable to all seas, bays, estuaries, creeks, rivers and backwaters.

4- All aquaculture industries/shrimp culture industries/shrimp culture ponds operating/set up in the coastal regulation zone as defined under the CRZ notification shall be demolished and removed from the said area before March 31 1997.

5- The farmers who are operating traditional and improved traditional systems of aquaculture may adopt improved technology for increased production, productivity and return with prior approval of the ‘authority’ constituted by this order.

6- The agricultural lands, salt pan lands, mangroves, wet lands, forest lands, land for village common purposes shall not be used/converted for conversion of shrimp culture ponds.

7- No aquaculture industries/shrimp culture industries/shrimp culture ponds shall be constructed/set up within 1000 meters of Chilika lake and Pulicat lake (including bird sanctuaries namely Yadurapattu and Nelapattu)

8- Aquaculture industry/shrimp culture ponds already operating and functioning in the said area of 1000 meters shall be closed and demolished before March 31, 1997.

9- Aquaculture industry/shrimp culture industry/shrimp ponds other than traditional and improved traditional may be set up/constructed outside 1000 meters of chilika and pulicat lakes with the prior approval of the authority as constituted by this court. Such industries which are already operating in the said areas shall obtain authorisation from the “Authority” before April 30 1997, failing which the industry concerned shall stop functioning with effect from the said date.
10. Aquaculture activity including intensive and semi-intensive activity which has the effect of causing salinity of soil or the drinking water or wells and/or by the use of chemical feeds increases shrimp or prawn production with consequent increase in sedimentation which, on putrefaction is a potential health hazard, apart from causing siltation, turgidity of water courses and estuaries with detrimental implication on local fauna and flora shall not be allowed by the aforesaid authority.

11. Aquaculture industry/shrimp culture industry/shrimp culture ponds which have been functioning/operating within the coastal regulation zone as defined by CRZ notification and written 1000 meters from Chilika and Pulicat lakes shall be liable to compensate the affected persons on the basis of the polluter pays principle.

12. The authority shall with the help of expert opinion and after giving opportunity to the concerned polluters assess the loss to the ecology and environment of the affected areas and shall be liable to compensate individuals/families who have suffered because of the pollution and shall assess the compensation to be paid to the said individuals/families. The authority shall further determine the compensation to be recovered from the polluters as cost of reversing the damaged environment. The authority shall lay down just and fair procedure for completing the exercise.

Source- All India Reporter, 1997
APPENDIX - XI

Bill No. XVII-C of 1997

THE AQUACULTURE AUTHORITY BILL, 1997

A

BILL

OBJECTIVE

o provide for the establishment of an Aquaculture Authority for regulating the activities connected with aquaculture in the coastal areas and for matters connected therewith or incidental thereto.

BE it enacted by parliament in the Forty-Eighth year of the Republic of India as follows:

CHAPTER I

PRELIMINARY

1. (1) This Act may be called the Aquaculture Authority Act, 1997

(2) Provisions of section 24 shall come into force at once and the remaining provisions of this Act shall come into force on such date as the Central Government may, by notification in the Official Gazette, appoint.

Definition

2. In this Act unless the context otherwise require:-

(a) "aquaculture" means culturing under controlled conditions in ponds, pens and enclosures or otherwise of shrimp, prawn, fish or any other Aquatic life in saline water but does not include water aquaculture;

(b) "Authority" means the Aquaculture Authority established under sub-section (1) of section 3;

(c) "Chairperson" means the Chairperson of the Authority;

(d) "Coastal area" means the area declared as the Coastal Regulation Zone for the time being in the notification of the Government of India in the Ministry of Environment and Forests No. S.O. 114(E), dated the 19th February, 1991 and includes such other area as the Central Government may, by notification in the Official Gazette, specify;

(e) "Member" means, member of the Authority appointed under section 3 and includes the Chairperson and the member-secretary;

(f) "Prescribed" means prescribed by rules made under this Act;

(g) "Regulations" means regulations made by the Authority under this Act;

(h) Words and expressions used herein and not defined but defined in the Environment (Protection) Act, 1986 shall have the meanings assigned to them in that Act.
CHAPTER II
THE AQUACULTURE AUTHORITY

3. (1) With effect from such date as the Central Government may, by notification in the Official Gazzette, appoint in this behalf, there shall be established for the purpose of this act an Authority to be called the Aquaculture Authority.

(2) The head office of the Authority shall be at such place as the Central Government may decide.

(3) The Authority shall consist of the following members who shall be appointed by the Central Government namely :-

(a) the Chairperson who has been a judge of a High Court;
(b) one member who is an expert in the field of Aquaculture;
(c) one member who is an expert in the field of Pollution control;
(d) one member who is an expert in the field of Environment protection;
(e) one member to represent the Ministry of Environment and Forests of the Central Government;
(f) one member to represent the Ministry of Agriculture of the Central Government.
(g) one member to represent the Ministry of Commerce of the Central Government.
(h) four members to represent the coastal States;
(i) one member secretary;

(4) The term of office of the members shall be three years.

(5) The salaries and allowances payable to, and the other terms and conditions of service of the members shall be such as may be prescribed.

4. A person shall be disqualified for being appointed as a member if he -

(a) has been convicted and sentenced to imprisonment for an offence which, in the opinion of the Central Government, involves moral turpitude or
(b) is an undischarged insolvent; or
(c) is of unsound mind and stands so declared by a competent court; or
(d) has been removed or dismissed from the service of the Government or a Corporation owned or controlled by the Government; or
(e) has, in the opinion of the Central Government, such financial or other interest in the Authority as is likely to effect prejudicially the discharge by him of his functions as a member.
5. Subject to the other terms and conditions of service as may be prescribed, any person ceasing to be a member shall be eligible for reappointment as such member.

6. (1) The Authority shall meet at such times and places and shall observe such rules of procedure in regard to the transaction of business at its meetings, including the quorum threat, as may be specified by regulations.

(2) If for any reason the Chairperson is unable to attend any meeting of the Authority any other member chosen by the members present at the meeting shall have and exercise a second on casting vote.

(3) All questions which come up before any meeting of the Authority shall be decided by the majority of votes of the members present and voting, and in the event of an equality of votes, the Chairperson or in his absence the person presiding shall have and exercise a second on casting vote.

7. No act or proceeding of the Authority shall be invalidated merely by reason of:

(a) any vacancy in, or any defect in the constitution of the Authority; or

(b) any defect in the appointment of a person acting as a member of the Authority; or

(c) any irregularity in the procedure adopted by the Authority not affecting the merits of the case.

8. (1) For the purpose of discharging its functions, the Authority shall appoint such number of officers and other employees as it may consider necessary on such terms and conditions as may be specified by the regulations.

(2) The Authority may appoint, from time to time, any person as adviser or consultant as it may consider necessary on such terms and conditions as may be specified by the regulations.
9. All orders, decisions and other instruments of the Authority shall be authenticated under the signature of the Chairperson or any other member or any officer of the Authority authorised by it in this behalf.

CHAPTER III
POWERS AND FUNCTIONS OF THE AUTHORITY

10. (1) The Authority shall exercise the following powers and perform the functions, namely:–

(a) to prescribe regulations for the construction and operation of aquaculture farms within the coastal areas;

(b) to inspect aquaculture farms with a view to ascertaining their environmental impact caused by aquaculture;

(c) to grant licences to aquaculture farms

(d) to order removal or demolition of any aquaculture farms which is causing pollution after hearing the occupier of the farm;

(e) perform such other function as may be prescribed

14 of 1947 (2) Where the Authority orders for removal or demolition of any aquaculture farm under clause (d) of sub-section (1), the workers of the said farm shall be paid compensation in accordance with the provision of the Industrial Disputes Act, 1947.

11. Subject to any rule made in this behalf, any person generally or specially authorised by the Authority in this behalf, may, wherever it is necessary to do so for any purposes of this Act, at all reasonable times, enter upon any aquaculture land, pond, pen or enclosure and –

(a) make any inspection, survey, measurement, valuation or inquiry;

(b) remove or demolish any structured therein;

(c) do such other acts or things as may be prescribed;
provided that no such person shall enter on any aquaculture land, pond, pen, or enclosure without giving such occupier at least twenty-four hours notice in writing or his intention to do so.

12. (1) Save as otherwise provided in this section, no person shall carry on aquaculture farming in the coastal areas unless he holds a licence issued in this behalf by the Authority.

(2) Notwithstanding anything contained in sub-section (1), a person engaged in aquaculture farming immediately before the appointed day may continue to carry on such activity without such a licence for a period of six months from that day and if he makes an application for such licence under this sub-section within the said period of six months, till the communication to him of the Authority disposing of such application.

(3) A licence issued under this section:–

(a) shall be valid for a period of five years;
(b) may be renewed from time to time for a like period; and
(c) shall be in such form and shall be subject to such conditions as may be specified by regulations.

(4) A person who intends to carry on aquaculture farming shall make an application in such form and on payment of such fees as may be prescribed for the issue of a licence.

(5) No application for the issue of a licence to commence any activity connected with aquaculture farming shall be granted unless the Authority after making such enquiry as it thinks fit is satisfied that grant of such licence shall not be detrimental to the coastal environment.

(6) No licence shall be granted for aquaculture farming proposed to be carried out within two hundred metres from the High Tide Line:

Provided that in case of creeks, rivers and backwaters, no such licence shall be granted within the Coastal Regulation Zone declared for the time being under the Environment (Protection) Act, 1986.
Provided further that nothing in this sub section shall apply in the case of an aquaculture farm which is in existence on the appointed day.

Explanation: - For that purposes in this sub section, “High Tide Line” means the line on the land up to which the highest water line reaches during the spring tide.

(7) No application for renewal of a licence for carrying on any activity connected with aquaculture farming shall be rejected unless the holder of such licence has been given a reasonable opportunity of presenting his case.

(8) Every person to whom a licence has been issued or renewed under this section shall comply with the terms and conditions specified in the licence and the provisions of the Act and the rules, regulations and orders made thereunder.

Explanation: - For the purposes of this section, “appointed day” means the date of establishment of the Authority

CHAPTER-IV
FINANCE, ACCOUNTS AND AUDIT

13. The Central Government may, after due appropriation made by parliament by law in this behalf, pay to the Authority in each financial year such sums as may be considered necessary for the performance of function of the Authority under this Act.

14. (1) The Authority shall have its own fund and all sums which may, from time to time, be paid to it by the Central Government and all the receipts of the Authority (including any sum which any State Government or any other authority or person may hand over to the Authority) shall be credited to the fund and all payments by the Authority shall be made therefrom.

(2) All moneys belonging to the fund shall be deposited in such banks or invested in such manner as may, subject to the approval of the Central Government, be decided by the Authority.

(3) The Authority may spend such sums as it thinks fit for performing its functions under this Act, and such sums shall be treated as expenditure payable out of the fund of the Authority.

15. The Authority shall prepare, in such form and at such time each year as may be prescribed, a budget in respect of the financial year next ensuing showing the estimated receipts and expenditure and copies thereof shall be forwarded to the Central Government.
16. The Authority shall prepare once every year, in such form and at such time as may be prescribed an annual report giving a true and full account of its activities during the previous year and copies thereof shall be forwarded to the Central Government and that Government shall cause the same to be laid before both Houses of Parliament.

17. (1) the Authority shall cause to be maintained such books of account and other books in relation to its accounts in such form and in such manner as may, in consultation with the Comptroller and Auditor-General of India, be prescribed.

(2) The Authority shall, as soon as may be, after closing its annual accounts prepare a statement of accounts in such form, and forward the same to the Comptroller and Auditor-General of India by such date, as the Central Government may, in consultation with the Comptroller and Auditor-General determine.

(3) The accounts of the Authority shall be audited by the Comptroller and Auditor-General of India at such times and in such manner as he thinks fit.

(4) The accounts of the Authority as certified by the Comptroller and Auditor-General of India or any other person appointed by him in this behalf together with the audit report thereon shall be forwarded annually to the Central Government and that Government shall cause the same to be laid before both Houses of Parliament.

CHAPTER V
MISCELLANEOUS

18. The Chairperson and other members and the officers and other employees of the Authority shall be deemed to be public servants within the meaning of section 21 of the Indian Penal Code.

19. No suit, prosecution or other legal proceeding shall lie against the Central Government or against the Chairperson or other members of the Authority or any other person authorised by the Chairperson or other members for anything which is in good faith done or intended to be done in pursuance of this Act or any rule or order made thereunder.

Annual report

Accounts and audit

Members, officers and other employees of the Authority to be public servants.

Protection of action taken in good faith
20. (1) If any difficulty arises in giving effect to the provisions of this Act, the Central Government may by order published in the official Gazette, make such provisions, not inconsistent with the provisions of this Act, as appear to it to be necessary or expedient for removing the difficulty:

Provided that no such order shall be made after the expiry of the period of two years from the date of the commencement of this Act.

(2) Every order made under this section shall, as soon as may be after it is made, be laid before each House of Parliament.

21. (1) The Central Government may, by notification in the Official Gazette, make rules to carry out the provisions of this Act.

(2) In particular and without prejudice to the generality of the foregoing powers, such rules may provide for all or any of the following matters, namely:

(a) the terms and conditions of the service of the members under sub-section (6) of section 3;

(b) the terms and conditions for reappointment of a member under section 5;

(c) to perform such other functions by the Authority under sub-section (c) of sub-section (1) of section 10;

(d) the application form and fee for grant of licence under sub-section (4) of section 12;

(e) the conditions and restrictions with respect to the exercise of the power to enter under section 11 and the matters referred to in clause (c) of the that section;

(f) the form in which and the time within which the Authority shall prepare its budget under section 15 and its annual report under section 16;

(g) the manner in which the accounts of the Authority shall be maintained and audited and the date before which the audited copy of the accounts together with the auditor's report thereon shall be furnished to the Central Government under section 17;

(h) any other matter which is required to be or may be, prescribed.
22. (1) The Authority may, by notification in the Official Gazette, make regulations not inconsistent with the provisions of this Act, and the rules generally to carry out the purposes of this Act.

(2) In particular, and without prejudice in the generality of the foregoing power such regulations may provide for all or any of the following matters, namely :-

(a) the times and places of the meetings of the Authority and the procedure to be followed for the transaction of business at such meetings;

(b) the terms and conditions of service, method of recruitment and the remuneration of the officers and other employees appointed by the Authority;

(c) the terms and conditions, method of appointment of any person as adviser or consultant;

(d) the form and conditions subject to which a licence may be granted under clause (c) of sub-section (3) of section 12;

(e) generally for better regulation of the aquaculture farming;

23. Every rule and every regulation made under this Act shall be laid as soon as may be after it is made, before each House of Parliament while it is in session, for a total period of thirty days which may be comprised in one session or in two or more successive sessions, and if, before the expiry of the session immediately following the session or the successive sessions aforesaid, both Houses agree in making any modification in the rule or regulation or both Houses agree that the rule or regulation should not be made, the rule or regulation shall thereafter have effect only in such modified form or be of no effect, as the case may be; so, however, that any such modification or annulment shall be without prejudice to the validity of anything previously done under that rule of regulation.

24. (1) Notwithstanding anything contained in clause (1) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 or clause (d) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, in the notification of the Government of India in the Ministry of Environment and Forest No.S.O. 114 (E), dated the 19th February 1991 (hereafter referred to in this section as the said notification), in paragraph 2, after sub-paragraph (xiii), the following sub-paragraph shall be inserted and shall always be deemed to have been inserted with effect from 19th day of February, 1991, namely:-

"(xiv) nothing contained in this paragraphs shall apply to aquaculture."
(2) The said notification shall have and shall be deemed always to have effect for all purposes as if the foregoing provision of the section had been in any force of all material times and accordingly notwithstanding anything contained in any judgement, decree or order of any court, tribunal or authority, no aquaculture farming carried on or undertaken or purporting to have been carried out or undertaken shall be deemed to be in contravention of the said notification and shall be deemed to be and to have always been for all purposes in accordance with law, as if the foregoing provision of this section had been in force at all material times and notwithstanding anything as aforesaid and without prejudice to the generality of the foregoing no suit or other proceeding shall be maintained or continued in any court for the enforcement of any direction given by any court of any decree or order directing the removal or closure of any aquaculture farms activity or demolition of any structures connected thereunder which would not have been so required to be removed closed or demolished if the foregoing provisions of this section had been in force at all material times.

RAJYA SABHA

A

BILL

to provide for the establishment of an Aquaculture Authority for regulating the activities connected with aquaculture in the coastal areas and for matters connected therewith or incidental thereto.

(As passed by the Rajya Sabha)

Source: Collected from the official files of Office of Commissioner of Fisheries, 2000.