CHAPTER 4

Bounded top-down Approach
BOUNDDED TOP DOWN APPROACH

The third world countries face environmental problems at two levels -- one is the impact of high growth oriented development on environment and the other is the direct impact of the improved standards of living through different life style. The problem with the present development strategy is that activities at both levels are mutually reinforcing and hence aggravate the environmental degradation. The imperfect understanding of link between the poverty and environmental degradation often results in propagating linear policies, i.e., concentrating on either or the other problem, rather than following an integrated approach which would address both the problems.¹

Most of the environment degradation problems are mainly due to the lack of long term plans. Many short-term policies still continue despite the increased environmental concern. Such policies include (i) bias in agricultural policies towards well endowed region to the neglect of the environmentally fragile regions, (ii) inefficiency in water use due to lopsided irrigation policies which have enhanced the environment degradation, (iii) lack of proper land use policy, (iv) absence of environmental concerns in the industrial policies, (v) lack of integrated policies on natural resource management, (vi) more importantly lack of co-ordination between macro-policies at grass-root level.²
Recent social science research, particularly evaluation research and cost-benefit analysis, has produced a substantial literature on the impact of public policy. On the relationship of programme inputs to outputs and outcomes does not systematically yield useful information on why programmes have been successful or have failed. Policy makers who evaluate programme success or failure obviously need to know something about why they have to make the much-needed adjustments in the programme. However, the explicit focus of these analytic techniques on inputs and outputs does not systematically yield useful information on why programmes have been successful or why they failed. To know this, the study has to concentrate on policy implementation process. In its narrowest definition implementation refers primarily to the administrative process. In broader sense implementation refers to carrying out a process or the process of trying to move from a decision to programme or project operation.

Basically policy failure or success may result from defects in policy formulation and design or the planning process as well as in carrying out the process. But studies have shown that most of the reasons for programme failure lie in the policy enforcement stage.

During the past half a century, a disproportionate effort has been made to analyse the character of economic and social problems, the claims made for government action and the processes by which policy decisions are taken. More and more policy
analysts have tried to study and analyse the impacts or effects which policies may have on the people and the problems at which they had been directed. The focus on the determinants and consequences of the public policy has added much to our understanding of the policy process. But less attention has been paid to application or policy implementation. Policy implementation encompasses those actions by public and private individuals or groups that are directed at for the achievement of objectives set forth in prior policy decisions. Policy implementation takes place only after legislation has been passed and funds committed. Therefore, the study of implementation examines those factors that contribute to the realisation or non-realisation of policy objectives.

In India at the national level, though priority to environment had been prescribed in the directive principles of the Indian Constitution, no policy-making body was given the responsibility of protecting the environment till 1980. The Ministry of Environment and Forests was set up in 1980 as a focal agency of the Central Government for planning, promotion and coordination of environmental related programmes. The integrated environment protection act was promulgated in 1986 [The Environment (Protection) Act of 1986]. However, there are some other legislation's which directly or indirectly have an impact on the environment like the Indian Forest Act, 1927, Wild Life Protection Act 1972, Water Act 1974, Water Cess Act, 1977, Forest (Conservation) Act, 1980, Air Act 1981, and Coastal Regulation Zone Notification of 1991 etc.
Aquaculture is mentioned only rarely in the Fisheries Act or in other legislation's in most countries in the region. Aquaculture often lies mid-way between agriculture and fisheries and also gets affected by a range of legislation's from other sectors. Rapid expansion of aquaculture has highlighted the need for a legal framework for the industry in many Asian countries.\textsuperscript{8} Public policies in Asian farmed shrimp exporting countries have frequently been designed to promote the expansion of commercial shrimp farming, as it can be highly remunerative for many of state's support groups. At the same time, policies may be adopted in response to concerns of other groups to mitigate the negative social and environmental impacts of shrimp farming. Many countries have relied on preventive measures to avoid harm and reduce risk of harm caused by shrimp culture. They include (i) setting of environmental standards (ii) restrictions and prohibitions on eco-degrading agents (iii) licensing and (iv) environmental impact assessment. Very few countries have legal provisions for compensation to third parties adversely affected by externalities arising from shrimp farming.\textsuperscript{9}

When policy implementation becomes unmanageable, it indicates that conflicts are broad based and process for settling them are inadequate. There are too many difficult issues and very few opportunities for authoritative resolution and action. Basically, administrative agencies have adapted to weaknesses in the political institutions of governance, weakness that results in policy stalemate and disorganised political conflict.\textsuperscript{10}
National legislation designed to regulate shrimp aquaculture received the most attention. Nearly every country producing farmed shrimps seems to be in the process of designing regulations to protect environment from pollution and other damages generated by shrimp aquaculture.

There seems to be little analysis of how well laws regulating shrimp farming are implemented or how appropriate they are for social and ecological context within India. A policy that is framed from the above may have the representative saying but may not be based on the factors of ground reality. There have been few critical analyses concerning the consequences of laws regulating aquaculture on local communities and different social groups within them. Though the Water (Prevention and Control of Pollution) Act of 1974 and the Environment (Protection) Act of 1986 were formed before the commencement of commercial shrimp aquaculture in India, these acts have clauses, which the shrimp industry had not been giving adequate attention.

The problem of rivers and streams gained importance as a result of the growth of industries and the increasing tendency to urbanise after independence. So the Government of India realising the importance of safety of water resources started taking initiation to ensure that the domestic and industrial effluents are not allowed to be discharged into the watercourses without adequate treatment. As a result of which the Union Government prepared a Draft Bill for the prevention and control of water pollution and put up for consideration in 1965. This bill was based on the

The main purpose of this Act is for prevention and control of water pollution and the maintenance and restoration of the wholesomeness of water. This Act recommended the formation of the Central Pollution Control Board and the respective State Pollution Control Boards in each state to monitor the environment pollution related issues. Presently all the Indian States have their own state pollution control boards. The main function of this Board is to promote the cleanliness of streams and wells in different areas of the states. The Central Board is to advise the Central Government on any matter concerning the prevention and control of water pollution, to resolve disputes among the Central Boards and State Boards. The function of Central Board is also to provide technical assistance and guidance to the State Boards, carry out and sponsor investigations and research relating to problems, pollution, and prevention and control of water pollution. The Act empowers the Central Board to plan, cause and execute different nation-wide programme for the prevention, control or abatement of water pollution. The Act provides for a regulatory mechanism in relation to “discharges” from any activity.

Tamil Nadu Pollution Control Board (TNPCB) came into existence on 19 February 1982. TNPCB has been looking after the environment pollution related acts formed till now. This includes even the acts that were formulated even before TNPCB
came into existence. The TNPCB is responsible for administering the regulatory enactment’s. Some of the Central Acts such as Water (Prevention and Control of Pollution) Act 1974, The Air (Prevention and Control of Pollution) Act 1981, The Water (Prevention and Control of Pollution) Cess Act 1977, The environment (Protection) Act, 1986 and the Hazardous Wastes (Management and Handling) Rules 1987, have also empowered TNPCB. Under the Water (Prevention and Control of Pollution) Act, 1974, new and existing industries and local bodies in Tamil Nadu have to obtain the consent of the Tamil Nadu Pollution Control Board for the discharge of sewage or trade effluent into any stream or well or server or on land. Industries or the local bodies can avail this by making an application for consent in the prescribed form, furnishing details of treatment and disposal arrangements. The Board has evolved standards for discharge of effluent depending upon the mode of disposal, either into inland surface waters or sewer or marine coastal area or on land. While issuing consent the Board stipulates necessary conditions for bringing the trade effluent to satisfy the standards prescribed by it and also proposals for new industrial units, an assessment is made for the suitability of site and adequacy of treatment measures are formulated by the board. 12

Though industrial shrimp culture came to full force only during the tail end of the 1980s, the rules and regulations of the Water (Prevention and Control of Pollution) Act directly impact on it. According to this Act the industry in Tamil Nadu needs the TNPCB’s consent for discharge of effluent by making an application. But none of the
shrimp farms out of 1250 (as per 1998 survey) had applied for the consent and were all functioning letting their hazardous effluents into nearby land and waterways like creek, estuary or even into the sea. Nothing had been done to abate the pollution caused due to the effluent discharge from the shrimp industry. The farm effluent is 100% untreated without any disposal arrangement. Though the TNPCB has issued standards for discharge of the shrimp farm effluents, the aquaculturists hardly bothered about the discharge treatment before letting it out into nearby field or waterways. As the effluent treatment needs measures which are costly. Till date no site selection before the construction of shrimp farms has been done. That is mainly the reason why there is so much of proliferation of illegal shrimp farms in the state.

The Environment (Protection) Act, 1986, in many ways, is comparatively well considered piece of legislation passed by Parliament for the purpose of planning and executing a nation wide programme for the prevention, control and abatement of environment pollution. This act was passed with the objective of furthering environmental safeguards, standards and to provide a mechanism for their speedy implementation. The Central Government had been empowered to lay down standards for maintaining the quality of environment. It may restrict areas in which industrial operations may be carried out but subject to certain safeguards and lay down procedures for handling of hazardous substances. The Act fixed the responsibility on people saying that no person, carrying on any industry, operation or process shall emit any environmental pollutant in excess of standards prescribed by the Central Government.
The Act also seeks to implement long-term requirements of environmental safety and to give directions to a system of speedy and adequate response to emerging situations, threatening the environment. The Act also provides for the coordination of activities of various regulatory agencies, creation of an authority with adequate powers for environmental protection and regulation of the discharge of environmental pollutants. The Act defines "environment" which includes water, air and land and the interrelationship that exists among and between the three and the human beings, other living creatures, plants, microorganisms and property. Further an "environmental pollutant" is defined to mean any substance, solid, liquid or gaseous, which when present in such concentration as may be injurious to the environment, causes environmental pollution. 13

This act was an attempt, for the first time, to lay down a comprehensive law on environment and goes beyond the scope of the Water and Air Pollution Acts passed in 1974 and 1981 respectively. Under this Act, one is required to give a notice of not less than 60 days to the Central Government of his intention to make a complaint. One can only go to the Court if the Government does not act on the notice after this period. It may be submitted that such provision impedes rather than serves the cause of environmental protection. This is very clear in case of shrimp aquaculture. This Act does not give a free hand to the affected mass to file their petition under this Act. The degradation of surrounding environment and the affected livelihood of local people caused by shrimp farms can not be protected under this Act. The Act empowers over
centralization of powers in the Central Government. The problem of legal importance in overcoming pollution is not so much that the laws along with police power do not reach the mass but stick somewhere midway without proper implementation. The Environmental justice is entrusted to bureaucratic machinery, which acts more on paper and not for people. The law is generally so clumsy that quick action is not possible. Legislation has to be strengthened and at the same time simplified for proper implementation. It can be said that legislation alone would not be enough if the enforcement machinery is not fully geared up.

Evidently, even the general standards for discharge of effluents are not taken into consideration seriously, as nowhere in Tamil Nadu there is any effluent treatment system available in any shrimp farm. None of the shrimp farms follow the standards prescribed by the Government in the Act as no aquaculture farm owner takes any steps to bring down the pollution level of the effluents to the prescribed level of the Act.

Coastal Regulation Zone has emerged as a separate management area since early 1990s. After the enactment of Environment (Protection) Act, 1986 the Government of India brought out a notification in 1991 so as to protect the coastal stretches in the country in the form of Coastal Regulation Zone Notification. The prime reason for the notification was to manage the coastal land resources, which has a significant bearing on the health and quality of marine life support system especially the continental shelves. Therefore the Government decided to ensure the sustainable use of the resources occurring along
the coastline. The government brought out the notification with a view for careful planning of land use for the coastal land farms and for the judicious exploitation of natural resources including land, water, minerals etc. This also helped in planning and implementation of developmental programmes in the coastal areas. 14

First notification in inviting objections against declaring certain coastal stretches as Coastal Regulation Zone (CRZ) and imposing restrictions on industries in their zone was issued on 15 December 1990. Subsequently after considering all such objections two further notifications have been issued on 19 February 1991 and 18 August 1994. These notifications have been considered as a truly comprehensive set of guidelines for coastal zone formulated by the Central Government. The Central Government had formulated these notification through the Department of Environment – Forests and Wildlife, Ministry of Environment and Forest, under the terms of the Environment (Protection) Rules, 1986, providing for the declaration of certain coastal stretches as the Coastal Regulation Zones (CRZ), and regulating activities therein.

Through the notification the Central Government declares the coastal stretches of seas, bays, estuaries, creeks, rivers and backwaters which are influenced by tidal action (in the landwardside) upto 500 meter’s from the High Tide Line (HTL) and the land between the Low Tide Line (LTL) and the HTL as the Coastal Regulation Zone. It must be noted that the basis of the regulations lies on the fact that the distance upto which development along water bodies on land is to be regulated. All these have to be clearly identified in the respective State’s Coastal Zone Management Plans (CZMP).
The activities prohibited within CRZ are:

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

ii. Setting up and expansion of fish processing units excluding hatcheries;

iii. Setting up and expansion of units/mechanisms for disposal of wastes and effluents into water courses with approval under the Water (Prevention and Control of Pollution) Act, 1974, and except storm water drains,

iv. Harvesting or drawl of ground water within 200 meter's of the HTL. In the zone between 200 meter's to 500 meter's from the HTL, such water usage would be permitted only when done manually, through ordinary wells for drinking, agriculture, horticulture or fisheries,

v. Any construction activity in the ecologically sensitive areas as specified in the CRZ -1;

vi. Any construction activity between the Low Tide Line (LTL) and the HTL, except facilities for carrying treated effluents and waste water discharge into the sea and facilities essential for activities permitted by CRZ notification;

vii. Land reclamation, bundling (dyking) or disturbing the natural course of seawater, except storm water drain and structures for prevention of salinity ingress.

The industries for whom it is necessary to function in CRZ need to have clearance and approval from PCB, Ministry of Environment and Forests (for big industries)
As per the notification the coastal stretches are divided into four categories as CRZ-I, CRZ-II, CRZ-III and CRZ-IV for the purpose of regulating development activities within 500 meter's of HTL. This categorization is merely a guideline for the states to specify the areas falling under their jurisdiction in one zone or other.

The ecologically sensitive and important area like mangrove forests, wildlife habitat, coral reefs, sanctuaries, areas close to breeding and spawning grounds of fish and other marine habitats, areas rich in genetic diversity and the area between the HTL and LTL are notified as CRZ-I. (For CRZ-II, CRZ-III, CRZ-IV see the CRZ Notification, 1991 and 1994 in appendix).^{15}

In accordance with the provisions of the notification, the Tamil Nadu Government prepared Coastal Zone Management Plan (CZMP) for the coastal stretches of 12 coastal districts in the Chennai Metropolitan Area (CMA) in 1996. The Ministry of Environment and Forests but for a revision provisionally approved this plan. The revision of CZM Plan was undertaken by the District Committee, which was headed by the District Collector. The revised plan was sent to the Ministry of Environment and Forestry for approval in 1999, through the State Coastal Zone Management Authority (SCZMA).^{16} Recently in 2002, this plan was approved by the Ministry of Environment and Forestry.
Though this notification is one of the very important laws of India it falls short in many respects. From the definition of CRZ point of view, the real meaning of HTL and LTL is not clear and there are no definite parameters to define or demarcate the HTL and LTL. It is clear that various regulatory bodies of the Centre and State are very likely to get confused about their responsibilities.

Analysis of the notification brings in two crucial issues. ¹⁷
1. What is the general acceptable definition of aquaculture? and
2. What is the nature of activities covered by the term aquaculture?

Some attempted to define aquaculture as “Aquaculture” includes culturing, growing or in any other manner, harvesting of fish, shrimps, prawns, crustaceans and other aquatic life form, on land, in captivity in ponds, pans, enclosures or otherwise, but does not include fresh water aquaculture”. Some others felt, coastal aquaculture implies farming along the edge of the sea which includes all water bodies that are confined to the coastal zone, both landwards and inshore areas of the sea. ¹⁸ The notification neither adequately defined aquaculture nor the natural activities covered under aquaculture.

There is a need of a comprehensive definition of aquaculture processes in the coastal zones, not just in terms of the definition of fish, shrimp or prawn but a more holistic definition covering the entire process of harvesting through commercial means of any aquatic or marine life. This may not necessarily be confined either to the sea
shore or sea based coastal zone. The Coastal zones are more prone to danger as the coastal zone apart from being an interface between land and the sea it is a separate legislative category and this needs legislation for its protection.

The other purpose of CRZ Notification is also to analyse the nature of aquaculture. This has the danger of getting fitted into the regulatory paradigm of the Notification. This Notification clearly prohibits industries in CRZ - I, except those directly related to the water front or need foreshore facility. This clause absolutely leaves aquaculture to function freely. Except 500-meter limit of High Tide Line (HTL) there is also legal tangles in bringing aquaculture under The Industrial Act. There might be a possibility to categorise aquaculture under agriculture. In 1995, the Karnataka Land Reforms Act of 1961 was amended to include aquaculture in the definition of agriculture category.\textsuperscript{19} Because of this problem, shrimp farming in Tamil Nadu and Andhra Pradesh fully violate the CRZ notification. In Tamil Nadu out of 1250 (1998 estimation) more than half of the farms are functioning within 500 meters from the High Tide Line. Though the Supreme Court of India has passed a judgement in December 1996 that no farm can operate within 500 meters from the High Tide Line. But many shrimp farms were still operating within this zone. However some of the farms are inoperative within this area because of the lands turning unsuitable even for aquaculture.
The unrestricted and widespread development of coastal shrimp culture in the state of Tamil Nadu led to several social and environmental problems. Environmental degradations and social disruptions occurred due to indiscriminate industrial shrimp culture which was strongly opposed by the local communities, environmentalists and several non-governmental organisations. With a view to regulate the shrimp industry and to protect the interest of coastal people, the Government of Tamil Nadu passed the Tamil Nadu Aquaculture (Regulation) Act, 1995. Though an Expert Committee was setup by the Government of Tamil Nadu to study the impact of shrimp culture in Tamil Nadu, even before the Committee Report was open for discussion the Government finalised the Tamil Nadu Aquaculture (Regulation) Act. Therefore the Act was passed before considering the recommendations of the Expert Committee.

As per the Act “aquaculture” means culturing in captivity in ponds, enclosures or otherwise of shrimps, prawns, fish or any other aquatic life in saline water, in saline soil but does not include freshwater aquaculture. According to the Act aquaculture is much more than mere shrimp culture.

As per the Regulation Act, license is compulsory for a shrimp farm. Every person, who wishes to start a shrimp farm unit, must first obtain a license from the Director of Fisheries on the recommendation by the District Committee. The District Committee is to be formed with the District Collector as it ex-officio Chairman. The other members of the District committee in each district are Chief Executive Officer of
the BFDA, Joint Director of Agriculture, Executive Engineer of Irrigation and ground Water departments of the Public works Department, District forest officer, District Environment Engineer of TNPCB and Regional Deputy Director of Town and Country Planning. However, Government is the final authority in this matter to allow or restrain an aqua farm.

The Act provided guidelines for the District Committee to follow at the time of scrutinising the application for issuing license to any aqua farm. Moreover an Eco-restoration fund has to be established for correcting the imbalance caused to the environment by aquaculture units. The Act provides for "appropriate eco-restoration work" to be carried on. The aquafarm must also get the clearance from the TNPCB and the approval of Public Works Department. However, the Director of Fisheries may withhold the renewal order by an order.

For the purpose of carrying out the provisions of this Act or the rules made thereunder, the Inspecting Officer who would be appointed by the Government was given wide-ranging powers. The Inspecting Officer was empowered to examine shrimp farms in the state was bestowed the power to enter into the aquaculture unit. The officer can inspect or examine the aquaculture land or its "water spread" area, account books, register or any other documents relating to aquaculture unit. The officer can put necessary questions at all reasonable hours and with or without assistance, and was
empowered to report the fact together with other relevant particulars to the Director of Fisheries.

Any person aggrieved by an order of the Director, refusing to grant or renew the license or canceling or suspending a license under this Act, can appeal to the Government of Tamil Nadu. The person can file an application for revision of such refusal order, within a period of 60 days from the date on which a copy of the refusal to license order was communicated to him.21

The major problem of Tamil Nadu Aquaculture (Regulation) Act is that it does not agree with the Coastal Regulation Zone Notification as the former allows aquaculture activity within 500 meter from the HTL. The CRZ notification prohibits developmental activities within the 500 meters zone from HTL point. Provisions of the Tamil Nadu Aquaculture (Regulation) Act therefore does not prohibit the establishment of aquaculture farms and other aquaculture related activities like construction of jetties, and canals etc.

Again there is a problem in the definition of aquaculture which fails to differentiate between intensive, semi-intensive, modified – extensive and extensive and modified traditional and traditional form of aquaculture. Further the aquaculture is sea-based and estuarine based forms and the impact generated by these two types of aquaculture would not be same on environment. The Act just generalises the limits of
aquaculture without specifying separately for sea based aquaculture and estuarine based aquaculture.

License can be issued after the site specific environmental impact assessment has been done for the aquafarm by a committee which is yet to be set by the Environmental Department, Tamil Nadu Pollution Control Board and the Ministry of Environment and Forests. Before issuing the license, the District Committee has to go for a field visit to check whether the site falls under prohibited area. But even the sensitivity of the environmental also has to be checked like, the salinity of soil, the distance from the main water stream, and also the nature of the proposed aquaculture (whether intensive, semi-intensive, modified extensive, or extensive). Till date no site selection has been done for shrimp farming. Neither TNPCB nor the Environment Department has done any environment impact assessment before any new shrimp farm have been set up.

It is a well-settled proposition of the law that the object and the reasons of an act are helpful in interpretation of the various provisions made therein. The object and reason for enforcement of this Act are to find a solution for the unrestricted development of the coastal aquaculture and the destruction inculcated on environment and society by this industry and also to achieve harmony between the two.
Even the Expert Committee set up by the State Government to survey, examine and to find facts about the coastal Aquaculture in Tamil Nadu was a team of Government officials without any local representative in it. The officials may represent only the Government views and may not adequately address the local problems. Even the District Committee does not provide for adequate representation from all interested parties. Non-governmental intervention and the views of the community have been excluded. There is no provision for elected panchayats to represent their views. Therefore the policy and the problems fall apart and the whole exercise becomes a bounded rationality.

This Act states that the cultivable lands cannot be utilised for aquaculture. There is no positive site criterion except that the land should not be cultivable land. Far from delimiting the site to be allowed, the bill confines only to excluding some specific areas (prohibited areas as per S.7 (2)(b) and cultivable land). Moreover the concept of cultivable land cannot be easily defined. According to the present practise any land lying uncultivated for about three to four years is considered as uncultivable land. There is no definition given for the "uncultivable and cultivable lands". It does not identify the type of land, which is suitable for aquaculture.

The concept of eco-restoration fund seems dangerous. A reflection of the "polluter pays" doctrine. It seems to be that the aquaculture industry can go in for non-sustainable exploitation of the environment if a specific amount is deposited for
environment restoration work. There is no provision to close down the farm, which has seriously impacted the environment. The land on which aquaculture had been practiced, ends up ultimately as a wasteland. This section of the Act specifies the constitution of Eco restoration fund of Rs.5000/- per hectare of land. It is known as advance fund. Once the owner proves that he has undertaken necessary restoration work the advance will be repaid or otherwise the Director of Fisheries will use the fund for restoration work. Evidently this amount is inadequate. Moreover the act does not tell what type of restoration should be done. And again any environmental degradation does not happen overnight, it is a continuous process. Even the Act does not speak about any parameter for environmental degradation like to what level of degradation a restoration work is needed or rather how much degradation an aquaculture unit can go for.

Section 14 of the Act describes the powers of the Inspecting Officer to enter and inspect the aqua farm. On the other hand, the Act does not confer the Inspecting Officer with powers to take sample, power to inspect the process of operation. The officials would not be able to assess the adverse impact of the unit on surrounding environment.

Again the Act does not demand a closure of the farm if it draws water at any point of culture. All type of shrimp culture need ground water to be mixed with brackish water to maintain the salinity level suitable for shrimp farming. So drawl of ground water is inevitable for shrimp farming. But out of the thousand shrimp farms
functioning in Tamil Nadu in 2000 none of them had applied for groundwater drawl permission to the TNPCB.

Discussing about the effluent treatment and use of chemicals and drugs in the aquaculture unit, the Acts points out that the use of chemicals and drugs has to remain below the detection level at the time of discharge. There is no mention about the chemicals in the effluent, which should be less than the minimum levels prescribed by the Water Pollution (Prevention) Act. As per the Act effluent treatment means collecting the shrimp farm effluents in a settlement tank. But the settlement tanks are not enough for the type of effluents discharged by the shrimp farms. These toxic farm effluents need a proper treatment procedure. There is a provision about the effluents but does not mention the soil on which the aquaculture has been done, as the bottom soil of the pond comes in close contact with the sediments of aquaculture. It is silent about the seepage of aquaculture water to the surrounding area. 22

Talking about the “buffer zones” between two farms, and between the village and the farm, the Act prescribes the minimum distance between a farm and the border of the village. Buffer zone is an area between two units or between the village and the farm, which is kept vacant, and this area is not to be used for any purpose. As a result of this the effluents from one unit does not get transferred either to the other unit or to the village through seepage. The area of buffer zone depends on the type of industry and also the type of effluent it discharges. The distance prescribed by the Act does not seem
to have any scientific significance. It also does not specify the kind of the buffer zone (whether there should be a canal or boundary etc.). Further no reason is given for the need of a buffer zone. Secondly the buffer zone appears to be at the cost of the society and there is no cost to the farm owner. As per the Act, the penalty levied does not exceed Rs.20000/- . The penalty amount increases to Rs.1000/- per day if the contravention continues.

There is a problem of enforcing the Act as the Act does not provide enough power to the Government officials and therefore the Government owned farms also easily escapes the responsibility of enforcement.23

Policy making that occurs in the administrative arena has less local participation because when the conflict is transferred to that arena it is also transformed and the issues are redefined and categorised as administrative, technical or scientific. As soon as an issue is institutionally defined as scientific advise and expertise, the scope of legitimate participants is drastically reduced. Even those who argued that participation is good for the soul of the citizen and necessary for the viability of democracy, have difficulty in reconciling with technical intricacies involved in resolving technically intensive public policy disputes. To be meaningful, public participation must be conducted on a highly selective basis, thereby promoting experts as the principal actors in most public policy decisions involving technical information.24
There is a gap between the officials, the owners of the shrimp aquafarms and the local residents. This gap can be bridged down by a common platform of understanding through participation and transparency.

Therefore there are many reasons why the Tamil Nadu Aquaculture (Regulation) Act could not address the problem adequately. During the policy formulation stage, there was hardly any participation neither from the public nor from technical experts. Technical or scientific point of view was not taken into consideration before drafting the Act.

Though many laws are there to regulate the shrimp industry, still the problem persists. The problem is with the implementation. The implementation has not been perfect because of many reasons.
END NOTES


2. ibid: 48-49.


4. ibid: 434.

5 ibid: 434-435.


12. The Water (Prevention and Control of Pollution) Act 1974, Bar Act, Tamil Nadu Pollution Control Board.
13. Water (Protection and Control of Pollution) Act, 1974 – provides for the establishment of Central and State Pollution Control Boards for the prevention and control of water pollution. The Act seeks to control pollution primarily through standard to be laid down by the boards and the consent orders issued by them. Stiff penalties are imposed for violation. The boards are given ample powers for investigation and inspection and to take samples and to establish laboratories to analyse the samples.

13. The Environment (Protection) Act, 1986 (see the Appendix)


15. The Coastal Regulation Zone (CRZ) Notification, 1991 and 1994 amendment. (see the Appendix) The activities except those prohibited, in the CRZ Notification have to include:

i. Clearance is needed for any activity within CRZ only if it requires water front and foreshore facilities.

ii. Environmental clearance from the Ministry of Environment and Forests, Government of India is required if the investment exceeds Rs. 5 Crores.

iii. Every coastal state and Union Territory shall prepare a CZMP identifying and classifying the CRZ area within their respective territories and obtain the approval of Ministry of Environment and Forests, Government of India within one year from the date of this notification.

iv. Within the framework of such approved plan(s) all permitted activity shall be regulated by State Government, Union Territory Administration or the Local Authority, whichever the case may be.

v. The respective State Government and Union Territory Administrations shall ensure adherence to the CRZ notifications and violations shall be subject to the provisions of the Environment (Protection) Act, 1986. The enforcement of CRZ would be the responsibility of the concerned governments within their respective jurisdiction.

17. "The Regulation of Blue Revolution", Third Community Based Law Competition/Protection of Local Communities their Resources and their Environment; the impact of aquaculture industry on the local communities of Tamil Nadu and Andhra Pradesh (1996). Submitted by the National Law School of India University Team: 146-147.

18. Abstract/Summary, Seminar on Protection of Local Communities, their resources and their environment (1996). Presented by the team of the National School of India University, Bangalore.


20. ibid: 159

21. The Tamil Nadu Aquaculture (Regulation) Act, 1995 (see the Appendix). The District Committee while examining the application for issuing license to shrimp farms as per the Tamil Nadu Aquaculture (Regulation) Act, 1995 would clarify the following matters as:

i. The application for grant of license should be in compliance with the provisions of this Act and the concerned rules.

ii. The proposed aquaculture site should not fall in the prohibited area as, the wetlands including bio diversity 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)

iii. Cultivable lands are not converted for aquaculture.

iv. Aquaculture unit shall not envisage drawl of groundwater for culture purpose.

v. Aquaculture unit shall not be established in buffer zone specially laid down in the Act.

vi. There should be a prescribed gap specified in the Act for every five hundred meters of sea water based and estuarine based farms.

While issuing the license certain conditions are to be considered as:
i. The aquaculture unit shall not be established without the consent of the Tamil Nadu Pollution Control Board constituted under Water (Prevention and Control of Pollution) Act, 1974.

ii. The aquaculture unit shall deposit a sum of Rs.5000/- per hectare to the Eco-restoration Fund

iii. The aquaculture unit shall not divert the drainage channels of the Public Works Department without the approval of the Department.

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

v. The aquaculture unit shall adopt such sustainable aquaculture practices in harmony with the environment.

vi. The aquaculture unit shall regulate the use of the chemicals and drugs in such a way that they remain below detection level at the point of effluent discharge and

vii. Other conditions of license as may be prescribed.

