

Chapter V

Conclusions and Suggestions

5.1. Conclusions

The following are the conclusions of the study undertaken:

1. Fresh water wetlands are disappearing at an alarming rate in Tamil Nadu (Bindu, 2005). Any conservation or management or restoration demands a good inventory. Agencies like ISRO, SRC and SACON, conducted inventory mapping of Indian wetlands. The present study was focused on inventory study of wetlands in Tiruchirappalli district at 1:250,000 scale. The result showed the presence of 2399 wetlands (2011) of which smaller wetlands are concentrated in the southern part of the district while in the northern part larger wetlands are present. The topography of Tiruchirappalli district is hilly in the northern side and the wetlands are replenished from the rivers from the Pachamalai and Kollimalai hills besides the Cauvery river.
2. The total wetlands in the Tiruchirappalli district is divided into the five categories based on the size. 2366 wetlands are under less than 0.5 sq.kms. size, while 31 wetlands fall under 0.5 to 0.75 sq.kms. 20 wetlands are in the size category of 0.75 to 1 sq.km. 5 wetlands fall under 1 to 1.25 sq.kms. Only 7 wetlands are greater than 1.25 sq.km. area.
3. Wetlands in the Tiruchirappalli district are shrinking in size and numbers. Three wetlands maintained by PWD namely Thirthalayur wetland (Thuraiyur taluk), Nagayanallur and

Mullipadi wetland (Musiri taluk) were subjected to boundary analysis. Results showed conclusively that these wetlands are shrinking due to monsoon failure and invading xerophytes.

4. Thiruthalyur wetland is selected for ecosystem evaluation and the study of socio-economic and cultural aspects. The following are the findings:

- Analysis of Thiruthalyur wetland soil reveals that it is a hydric mineral soil and is good for agriculture, and so there is a risk of converting the area for agriculture.
- Though the study period was 2011 to 2013, it was only in 2011 that water was available in Thiruthalyur wetland; in 2012, it was found only as small puddles, and in 2013 it was completely dry. The physico-chemical analysis revealed the results are within WHO drinking water standards. This suggests that this wetland is not moving towards eutrophication, the cause of which can be attributed to the fact that this wetland is not very near to human settlement and factories.
- Biodiversity studies carried out showed rich flora and fauna typical of a wetland habitat.

5. Thiruthalayur wetland provides ecological services, economical benefits and cultural benefits to the rural community in the vicinity.

5.2. Suggestions

Any conservation plans of wetlands will be successful only if they are based on a detailed study such as inventory, morphometric changes and ecosystem evaluation. These studies should be consistent enough to direct the conservation efforts in a right path. Government and other non-government organizations should give importance in funding such research undertaken by institutions or by individuals. Efforts for management of wetlands should be given more importance than to re-create a lost wetland because it is difficult to re-manifest a wetland. A number of wetland re-creation efforts failed (Salveson 1997). It takes more than water to restore a wetland. Restoration of biological structure and function remains uncertain. Effective assessment tools are needed for good evaluation of a wetland. Biomonitoring of a wetland and evaluation of physico-chemical factors helps in assessing the status of a wetland. Accordingly, management and conservation steps can be taken.

Data relating to the current ecological conditions of the wetlands in Tiruchirappalli district is inadequate. This necessitates an immediate need to create a database on the wetland types, morphological, hydrological and biodiversity data surrounding land use, hydrogeology, surface water quality and socio economic dependence.

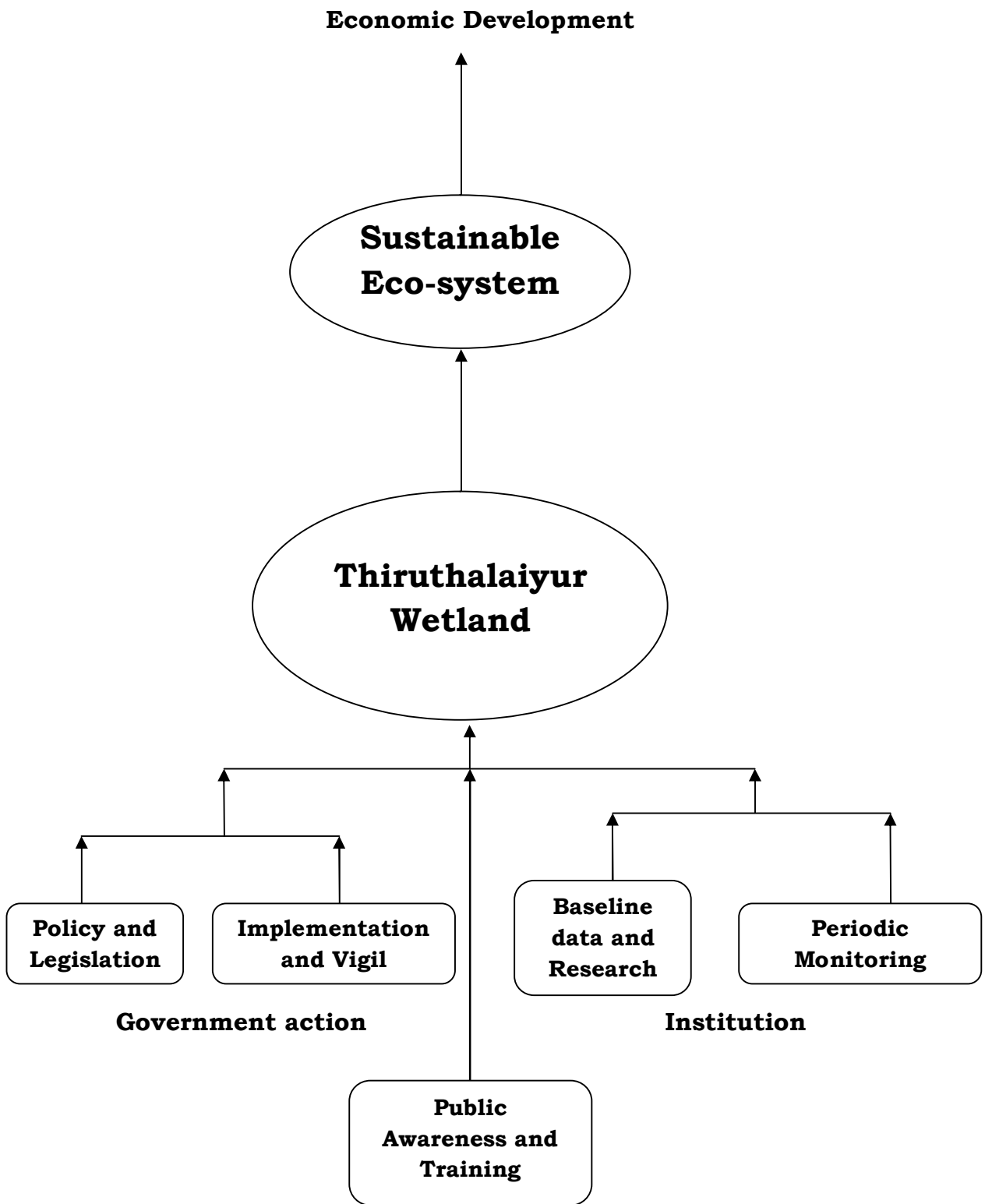


Fig. 5.1 Proposed wetland management action plan

Also institutions, colleges and regulating bodies must be involved in conducting regular water quality monitoring of surface water, ground water and biological samples. Such programmes provide technical support and information, which in turn help in understanding these systems better and therefore for formulating comprehensive restoration, conservation and management program (Fig. 7.1).

The natural functioning of a wetland can be revived by creating buffer zones for wetland protection, limiting anthropogenic activities around the demarcated corridor of the wetlands.

Most of the wetlands in Tiruchirappalli district is maintained by PWD and it is suggested that they should have a strong action plan to protect wetlands. The following are some suggestive measures.

- Periodic desiltation programs must be undertaken.
- Rural communities should be given awareness of the significance of wetlands and they should be educated for the sustainable use of the wetlands.
- Wetlands must be protected against pollution and encroachments.
- The inlet canals must be cleaned for the free flow of water.

SACON has come out with an action plan to halt the degradation of India's wetlands. This plan includes suggestion for a complete ban on converting wetlands measuring 0.50 hectares and above for any other land use and bans the use of pesticides near the watersheds.

Restoration programmes should include habitat restoration, elimination of undesirable species and restoration of native species.