CHAPTER 2

METHODOLOGY

2.1 LITERATURE SURVEY

Literature on environmental studies is quite modern and most of the books/treatises on the subject are post 1970. Literature is replete with books, on the basic philosophy of environmentalism, environmental administration, principles of environmental management, sustainable development and there are quite a large number of reports by international committees/agencies. The important and relevant literature reviewed, in the course of research are listed in the references.

On the leather tanning industry per se, however, there are not many publications and one has to rely mostly on published papers and seminar papers apart from reports prepared by institutions connected with leather industry. Some of the papers consulted are also listed in the references.

2.2 FIELD STUDY

Leather industry in the country is mainly concentrated in certain pockets of Tamil Nadu, Uttar Pradesh, West Bengal, Maharashtra and Karnataka. The author had the opportunity of observing the functioning of a number of units in different regions of the country during his tenure as Chief Executive of Council for Leather Exports, the national export
promotion council for the leather industry sponsored by Ministry of Commerce, Government of India.

During the course of the research work, which mainly focuses on the leather industry in Tamil Nadu, the author had close interaction with members of the industry, institutions such as Central Leather Research Institute (CLRI), Council for Leather Exports (CLE), Tamil Nadu Pollution Control Board (TNPCB), Department of Industries, Government of Tamil Nadu and Ministries of Industry, Commerce, Environment and Forests, Government of India. Contacts were established with industrial associations such as All India Hides & Skins Manufacturers Association, Indian Finished Leather Manufacturers & Exporters Association, Federation of Indian Chamber of Commerce and Industry, Federation of Indian Exports Organisation and Confederation of Indian Industry. Interaction with Project Co-ordinators of special programmes viz., National Leather Development Programme sponsored by United Nations Development Programme (UNDP) and Regional Programme for Pollution Control in the Tanning Industry in South East Asia sponsored by United Nations Industrial Development Organisation (UNIDO), provided useful insights into the modern technology applications and overall approach to the question of sustainable development of leather industry.

2.3 STRUCTURE OF THE THESIS

The thesis consists of ten chapters, which can be grouped into five major parts. Chapter 1, which sets out the backdrop of the study and defines its scope and Chapter 2, which dwells on the methodology, constitute the first part of the thesis. Chapter 1 brings out the relative importance of the leather industry to the country's economy and the
urgency in tackling the environmental issues facing this industry in the light of the global and domestic concerns.

The second part of the thesis comprises of Chapters 3 and 4 covering the theoretical aspects of environmental planning and management. Chapter 3 traces the growth of the concept of sustainable development and deals with principles and strategies of environmental management. The chapter describes the environmental decision model, the stages of decision making and the stakeholders involved.

In the process of economic development, it is imperative that the environmental administration reckons not just the economic costs but must also include the external costs and sacrifices to the society, to the environment or to the other species in the ecology. The costs are not merely the present costs but future total costs. Since the essence of environmental issues is that they inevitably involve, among other things, externalities and public type goods (ambient quality), the market mechanism cannot be relied upon to provide, all by itself, efficient levels of environmental goods and services. In other words governmental intervention has been, and continues to be, necessary. The regulatory mechanism devised by the governments all over has been based on the Command and Control (CAC) approach. Chapter 4 reviews the effectiveness of environmental policy and brings out the need for tempering the CAC approach with economic incentive instruments. This chapter also examines the extent of use of such economic incentive instruments in other countries and identifies the scope for application of such incentives in India.

The third part of the thesis consists of chapters 5 and 6 covering the general growth pattern of the leather industry in India. Chapter 5
deals with the global trends in the leather industry and the opportunities and threats facing the industry. To overcome the threat to the industry from the environmental angle, sustained efforts are a must to ensure that the tanners always and ever conform to the effluent standards prescribed. Chapter 6 delineates the various stages of the leather processing and the environmental challenges. The environmental norms prescribed for the industry and the various cleaner technology options to reduce the pollution load have been covered in detail in this chapter.

Case studies of the sustainable cleaner process and treatment technology options and study of the management issues relating to the Common Effluent Treatment Plants (CETPs) form the contents of the fourth part of the thesis covering chapters 7 and 8. The efficient chrome management through chrome recovery and reuse, ammonia free deliming, mechanical desalting and reduced sulphide liming are among the cleaner process technology options studied in detail. The later part of the chapter deals with improved treatment technology options including upflow anaerobic sludge blanket (UASB) system, wet-air oxidation, biomethanisation and sludge management.

The preponderance of small-scale tanneries generally found in clusters is a prominent feature of this industry and this has led to the concept of CETP. As on January 2000, there are 17 CETPs in the country covering about 850 tanneries. Chapter 8 deals with the technical features and management structure of these CETPs and identifies the issues in the technical, administrative and financial management of the CETPs. In-depth analysis of these issues leads to a desirable management model for the CETPs, which is also presented elaborately in this chapter.
The fifth and final part of the thesis is covered in Chapters 9 and 10. In-depth study of the environmental issues concerning the leather industry, the various cleaner processes and treatment technologies and the operational and management issues attempted in the present study lead to the preparation of a blueprint for the sustainable growth of this industry. This blueprint, which forms core of the thesis, is presented in Chapter 9. The conclusion and salient recommendations of the study are presented in the final chapter.