

Ph D Thesis Abstract
INDUSTRIAL GROWTH AND ENVIRONMENTAL DEGRADATION:
A CASE STUDY OF INDUSTRIAL POLLUTION IN TIRUPPUR, SOUTH INDIA
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The rapid economic growth achieved after globalization by some of the developing countries, has adversely affected the quality of the environment, imposed considerable social costs and livelihood impacts and has become a major threat to sustainable development. Since environment regulation tends to be weak in developing countries some of these countries have begun to specialize in pollution intensive manufacturing, particularly in products which have good export potential. However it is also extremely important for developing countries to achieve a high level of economic growth to mitigate their socio-economic problems. But the major challenge here is: how to ensure development in a sustainable manner by a proper trade-off between environment and development. The thesis examines these tradeoffs in the context of the textile industry in Tiruppur.

The global diversification of textile manufacturing and exports with a considerable reduction in its share in western developed countries and an increase in eastern, especially Asian developing nations has had significant implications for the Indian textile sector. Since most of the textile centres have developed as small-scale clusters, pollution management and enforcement is not at a satisfactory level. Hence in many places the pollution load discharged into the environment has exceeded the assimilative capacity and caused severe degradation of eco-systems and ultimately affected the livelihood of the people who depend on the services provided by these eco-systems. The present study is an attempt towards the operationalization of sustainable development strategies through a case study of Tiruppur, a major textile cluster in South India. The focus of the study is on: (a) industrial growth of Tiruppur and its socio-economic contribution, (b) pollution abatement cost of textile processing, (c) environmental damage caused by textile effluents in different sectors and (d) appropriate policy options for achieving sustainable industrial development through various institutional and technological options.

Tiruppur, with more than 9000 small-scale hosiery related units has succeeded in manufacturing high quality garments with a good export market through industrial networking, flexible organizational structure, technological modifications and institutional support. Even though the employment potential (more than 2,00,000), export earnings (Rs. 4,500 crore per year), and value generation (Rs. 1,910 crore per year at single shift base) are appreciable, the environmental problems associated with effluent discharge by textile processing segment is also substantial. Around 700 units are discharging more than 80 million litres per day of effluents without proper treatment. Even though industries incurred large expenditure for pollution abatement through the construction of 278 Individual Effluent Treatment Plants (IETPs) and 8 Common Effluent Treatment Plants (CETPs), the treatment system is insufficient for reducing total dissolved solids (TDS) or salts particularly chloride and sulphate. Furthermore, affordability of further investments towards pollution abatement is difficult, particularly for smaller units.

Continuous discharge of untreated and partially treated effluents over a decade is responsible for the accumulation of pollutants in soil and water in Tiruppur and in downstream areas. The pollution impact is observed in the ground water, surface water bodies (river, tanks and reservoir) and soil and the damage cost is significant in agriculture, fisheries and domestic and industrial water supply. The total annual social cost of pollution in agriculture, fisheries and drinking water supply was estimated to be around Rs. 50 crore per year. The industries in Tiruppur themselves have been affected by pollution. Since their own wells were contaminated, industries had to transport a major share of the required water from peripheral villages at a cost of above Rs. 90 crore per year. Subsequently, a major public-private scheme was developed bring water from the Cauvery River from a distance of 55 Km. There is also evidence of pollution impact on human health and biodiversity.

A comparison of the relevant economic indicators and environmental indicators for Tiruppur clearly reveals that the industrial growth in Tiruppur has not been environmentally sustainable, due to the failure of markets, policies and institutions. The thesis concludes with recommendations of certain policies for achieving environmentally sustainable industrial development of Tiruppur.