Chapter 4
Impact Assessment of Textile Industries of Rajasthan Using Geo-Spatial Techniques

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ABSTRACT

This chapter highlights water quality parameters of Rajasthan state using satellite remote sensing and GIS technology. Water and soil quality indices have been applied to identify and assess the magnitude of contamination due to textile effluents in the surroundings of textile industries. In the resultant indices, variability caused due to presence of textile effluents is prominently visible and interpreted with geo-statistical representations. Visible change in soil and water quality has been observed in surroundings of textile industries all over the Rajasthan state. Significant variations have been observed in Pali, Sanganer, Bhilwara regions due to presence of textile industries. To conclude, remote sensing and GIS technologies along with natural resource parameters as utilized in the study can be performed for generating assessment reports for extended area at regional as well as national level and providing backgrounds in formulation of government policies for sustainable development and management of textile industries.

DOI: 10.4018/978-1-7998-0311-9.ch004
INTRODUCTION

Textile industry is one of the oldest and traditional industry in the world starting from 3000BC. The textile industry is one of the second largest employments and labour intensive Industry. In today’s world, fibre or yarns, natural or man-made interlaced material are referred as textile. ‘Textile’ word is derived from ‘Texere’ Latin word which means ‘to weave’. The fundamental strength of this sector is strong production base. The business of textiles has expanded well beyond just the ordinary needs of the public. Although there still exist pockets where adequate clothing is still not available, it would be fair to say that a high degree of industrialization and the associated economics of scale has made fashion accessible to a large percent of the populace thus giving them greater choice. The textile industry has become one of the pillars of the new consumption driven market economy and encompasses several subsidiary trades which may or may not be directly connected with the production of garments themselves. With today’s largely integrated value chains and competition driving down prices, it is highly unlikely that the trend would subside anytime in the near future at least. Textiles have moved up from being a basic necessity into an era of growth where they reflect human aspersion. Development, production, manufacturing and distribution are the major processes involved in converting raw material into final textile industry product. Raw material (wool or cotton) collection, spinning to yarn followed by creation of fabric comes under the accountability of textile industry.

Handloom industry in the form of cottage industry used to exist before the textile industry took roots in India. Many products in the textile were used to prepare at home without using machines but industrial revolution led the production at mass level. Messers Freguson & Company established the first modern textile mill near Kolkata in 1817 and the first spinning mill was established by two Frenchmen in 1830 at Pondicherry. Flying shuttle, spinning jenny, power loom, cotton gin etc. were key inventions which brought the major revolution in industrialization and made it possible to produce mass level fabric. The Indian textile industry from the modern era to present time has created a special place in the world. India poses world’s largest Textile Industry. Indian textile industry has improved its production rate with frequent expansion and automation. Textile industry comes under major industries in India because it produces the essential consumer articles. Cotton, Staple Fibre and filament yarn come under the major production in Indian textile industries. The development and growth of this sector has a direct bearing on Indian economy. Around 50 lakhs people are engaged in textile industry in India. Gujarat, Maharashtra, Karnataka, Kerala, Tamil Nadu, West Bengal, Uttar Pradesh, and Madhya Pradesh are the leading textile manufacturing states in India (Chavan, 2001; Govindwar, Telke, Phugare, Jadhav, & Kalyani, 2009).
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