

# Chapter 3-10

## Lake Biwa and Industry

### Abstract

From the second half of the 1960s onward, the Lake Biwa catchment area experienced a process of dramatic industrialization and urbanization. The results of this led to pollution of the water of the lake and other forms of environmental degradation which became apparent from around the 1980s. However, thanks to the undertakings implemented by citizens, business and local governments, thus industry is undergoing a transformation into an environmentally-friendly structure.

**Keywords:** Management principles of Omi merchants, Actions against pollution, Dematerialization

### 1. Geographic Characters and Industry

As a strategic point linking the east and west of Japan, Shiga, the region that surrounds Lake Biwa, is an area where land routes and waterways have developed since ancient times, and has supported the transportation of both people and commodities. Shiga still serves as a link between the east and west, and is a strategic point for transport between the Sea of Japan side and the Pacific Ocean side. It was these geographical conditions that gave rise to the so-called “Omi Merchants” who traded commodities produced in the east to the west and products in the west to the east as well, thus expanding trade on a nationwide scale. As their business grew during the process of the modernization of Japan from the Meiji Period (1868-1912) onward, these mer-

chants established management principles aimed at achieving co-existence and co-prosperity between society and business.

Furthermore, based on these geographical conditions, the textile industry grew on the lakefront prior to the Second World War utilizing the abundant water resources of Lake Biwa.

However, industrialization centered on these textile industries did not engender a fundamental transformation of the industrial structure, and agriculture still characterized the area.

The fully-fledged industrialization and urbanization in the Omi region (Shiga Prefecture) grew dramatically from the second half of the 1960s. The post-war process of rapid economic growth saw the development of Omi as a base for machining and assembly industries, particularly electro-mechanical industries. The location of Shiga as a nodal point for overland logistics spurred the growth of assembly industries that collect components through the supply chains and parts manufacturing industries that distribute components nationwide.

According to national censuses, the ratio of the workforce of secondary industries surpassed the national average in 1970, while the percentage of the workforce in primary industries fell below the national average in 1985, marking the transformation of the area from an agricultural to an industrial area. At the same time, rapid increases in the

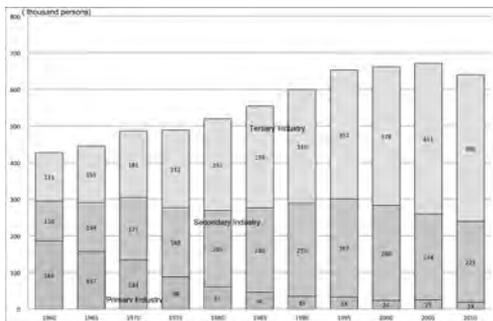


Fig. 3-10-1 Industrial structure of Shiga Prefecture, National Census

local population accelerated the process of urbanization.

## 2. Actions to Prevent Water Pollution by Business Firms

The process of industrialization and urbanization caused rapid eutrophication of the lake from the second half of the 1960s into the 1980s. Thus, such astonishing event ever experienced prompted citizens, business and local governments to cooperate in the implementation of initiatives to improve the environment.

Among business side, initiatives to reduce the pollutant load from industrial discharge spread. Then, the Environmental Conservation Association of Shiga Prefecture was organized by the manufacturing firms located around the lake in 1981 and they prompted undertakings to improve wastewater from industry. Many firms introduced environmental management systems such as ISO14001 in the 1990s, and have been implementing initiatives to improve the environment. Moreover, the Lake Biwa Business Messe (Enviro-Shiga) has been held annually since 1998 and is one of the foremost exhibitions in Japan relating to environmental business.

Since then, the Shiga Corporate Social Responsibility Management Prize was established in 2006, and the Biodiversity Initiative for Lake Biwa was announced by

business leaders in Shiga, while the desire of entrepreneurs to live up to responsibilities not only to society, but also to nature, was declared at COP10, the Conference of the Parties on Biodiversity. All these developments have been made possible by the management principles of the Omi Merchants.

## 3. Dematerialization of Industry

As environmental-improvements initiatives became established, industry itself underwent a process of dematerialization. Together with the promotion of measures such as efficient use of water and energy, resource-saving to reduce waste materials and reuse of waste materials, as linkage with the international supply chains advanced, the dematerialization of domestic and local industries progressed through the outsourcing of manufacturing functions to overseas bases. While the Shiga Prefectural input-output table for environmental analysis of 1995 and 2000 indicate that, on material basis, the amount of input resources within the prefecture has decreased resulting in a consequent reduction in the volume of materials shipped, on the other hand, consumption has increased. Although waste discharged has increased, recycled resources has increased, with the result that final amount of waste disposal has decreased, leading to reductions in CO<sub>2</sub> emissions.

Thus, although the volume of resources and energy used as well as greenhouse gas emissions has decreased and the pollutant load in Lake Biwa has undoubtedly dropped, it cannot yet be determined whether or not this actually translates into a reduction in the pollutant load on a global scale.

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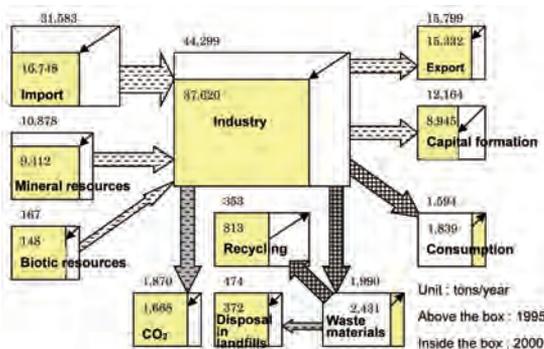


Fig. 3-10-2 Material flow of industry in Shiga Prefecture (Niren et al., 2006)