## CHAPTER 1. INTRODUCTION

## 1.1 Background of the Study

Government of Venezuela has been reforming its economic structure by developing export of nonpetroleum products and materials, and various kind of industries as prevailing rigid economic system highly dependent on petroleum exportation, affected by fluctuations of international petroleum price.

Among the three national integrated development plans to reform the basic economic structure, the Integrated Orinoco-Apure River Improvement plan is the most important one because there are abundant iron ore, bauxite and other materials in the basin. Maintenance of the navigation system in the Orinoco River channel is required to establish a reliable waterway transportation system, as a high priority project for the plan.

However, high maintenance dredging cost of the channel, US\$ 30 million per annum, due to the sediment deposition from 1.01 million  $\text{km}^2$  river basin has become a heavy burden to the Orinoco delta, eventually resulting in high overall transportation cost. Enhancement of the transportation capacity, and reliable and effective river navigation system is required along with the integrated river improvement to compete in the international market place for exporting the materials.

Under these circumstances, the Government of the Republic of Venezuela requested the Government of Japan to conduct the Study on the Integrated River Improvement of the Orinoco River in the Republic of Venezuela. In response, the Government of Japan has decided to carry out the study in accordance with the agreement on Technical Cooperation signed between the two Governments on April 6, 1988.

The Japan International Cooperation Agency (JICA), the official agency responsible for the implementation of technical cooperation programs of the Government of Japan, undertook the Study, in close cooperation with the authorities concerned of the Government of the Republic of Venezuela.

This is the Summary of Final Report covering the Study on the Integrated River Improvement of the Orinoco River in the Republic of Venezuela.

## 1.2 Objective of the Study

The objective of the study is to formulate a master plan for integrated river improvement of the Orinoco River for vessel navigation, to conduct the feasibility study on river improvement for the priority project identified in the Master Plan, and to transfer technology to the counterpart personnel in the course of the study. The study area is shown in Fig. S-1-1.

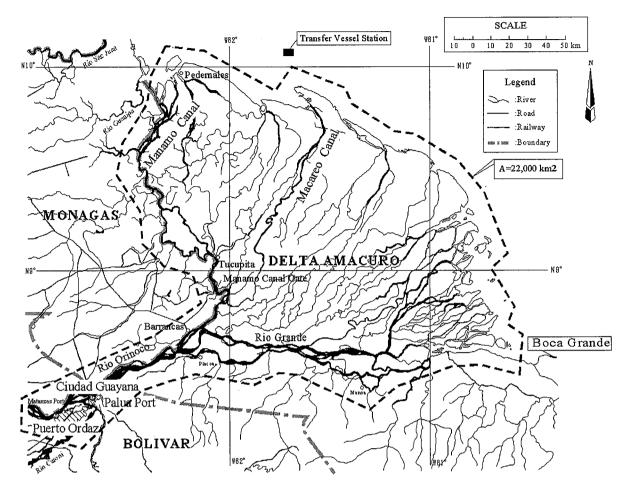


Fig. S-1-1 Study Area