

JAPAN INTERNATIONAL COOPERATION AGENCY



MUNICIPALITY OF PANAMA
THE REPUBLIC OF PANAMA



THE STUDY ON SOLID WASTE MANAGEMENT PLAN FOR MUNICIPALITY OF PANAMA IN THE REPUBLIC OF PANAMA

*Final Report
Volume II*

MAIN REPORT

MARCH 2003



KOKUSAI KOGYO CO., LTD.



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PREFACE

In response to a request from the Government of the Republic of Panama, the Government of Japan decided to conduct a development study on Solid Waste Management Plan for Municipality of Panama in the Republic of Panama and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA selected and dispatched a study team headed by Mr. Hiroshi Kato, KOKUSAI KOGYO CO., LTD. to Panama three times between December 2001 and January 2003.

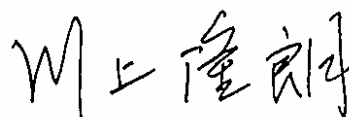
In addition, JICA set up an advisory committee headed by Dr. Hidetoshi Kitawaki, a professor of Toyo University, which examined the study from specialist and technical points of view.

The team held discussions with the officials concerned of the Government of Panama and conducted field surveys at the study area. Upon returning to Japan, the team conducted further studies and prepared this final report.

I hope that this report will contribute to the promotion of this project and to the enhancement of friendly relationship between our two countries.

Finally, I wish to express my sincere appreciation to the officials concerned of the Government of the Republic of Panama for their close cooperation extended to the Team.

March, 2003



Takao KAWAKAMI
President
Japan International Cooperation Agency

March 2003

Mr. Takao KAWAKAMI
President
Japan International Cooperation Agency

Letter of Transmittal

Dear Mr. KAWAKAMI,

We are pleased to submit the report of the Study on Solid Waste Management Plan for Municipality of Panama in the Republic of Panama.

This report consists of three components: a study on the present practices of waste management in Municipality of Panama; the formulation of the solid waste management master plan until the year 2015; and a feasibility study on the priority projects drawn from the master plan.

In the study on the present practices, six types of field investigations were conducted and existing data and information of various sources were collected and examined. By doing so, the current status of solid waste management in Municipality of Panama was thoroughly understood and the issues to be considered were identified.

The master plan was formulated aiming at overcoming these issues, with ultimate goals of the establishment of a sound municipal solid waste management system by 2015. In concrete terms, to eliminate waste from living environment for protecting the health of the citizens, to establish an appropriate final disposal system for mitigating environmental impacts caused by collected waste, and to contribute resource conservation through waste minimization have been developed as policies of the master plan. On the basis of the policies, technical, legal, organization and financial systems have been formulated. It was one of distinguishing characteristics of the study that six pilot projects were selected out of various improvement measures of the master plan with taking into account their urgency and implemented.

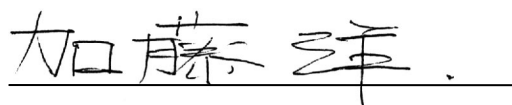
The feasibility study was carried out on two priority projects which are the construction of a new landfill that can receive waste until 2015 in the existing final disposal site, or Final Disposal Project, and a transfer and transport system that copes with the rapid urbanization in the east of Municipality of Panama, Transfer and Transport Project.

The Municipality of Panama has already implemented various measures for the goal of the master plan, such as enactment of a municipal ordinance on solid waste management that was jointly formulated by the Panamanian side and the Study Team, and invitation for bids on the Final Disposal Project for utilizing finance in the private sector. The study is actually yielding results.

We would like to take this opportunity to express our sincere gratitude to your Agency, the Ministry of Foreign Affairs, the Ministry of Economy, Trade and Industry, and the Ministry of Environment of Japan. We would also like to extend our deep appreciation to the Government of Panama, the Embassy of Japan and the JICA office in Panama for their vital cooperation during the implementation of our study in Panama.

Last but not least, we hope that the output of our study presented here will contribute to the improvement of solid waste management and citizens' welfare in the Municipality of Panama.

Respectfully,



Hiroshi KATO
Team Leader
The Study on Solid Waste Management Plan for
Municipality of Panama in the Republic of Panama

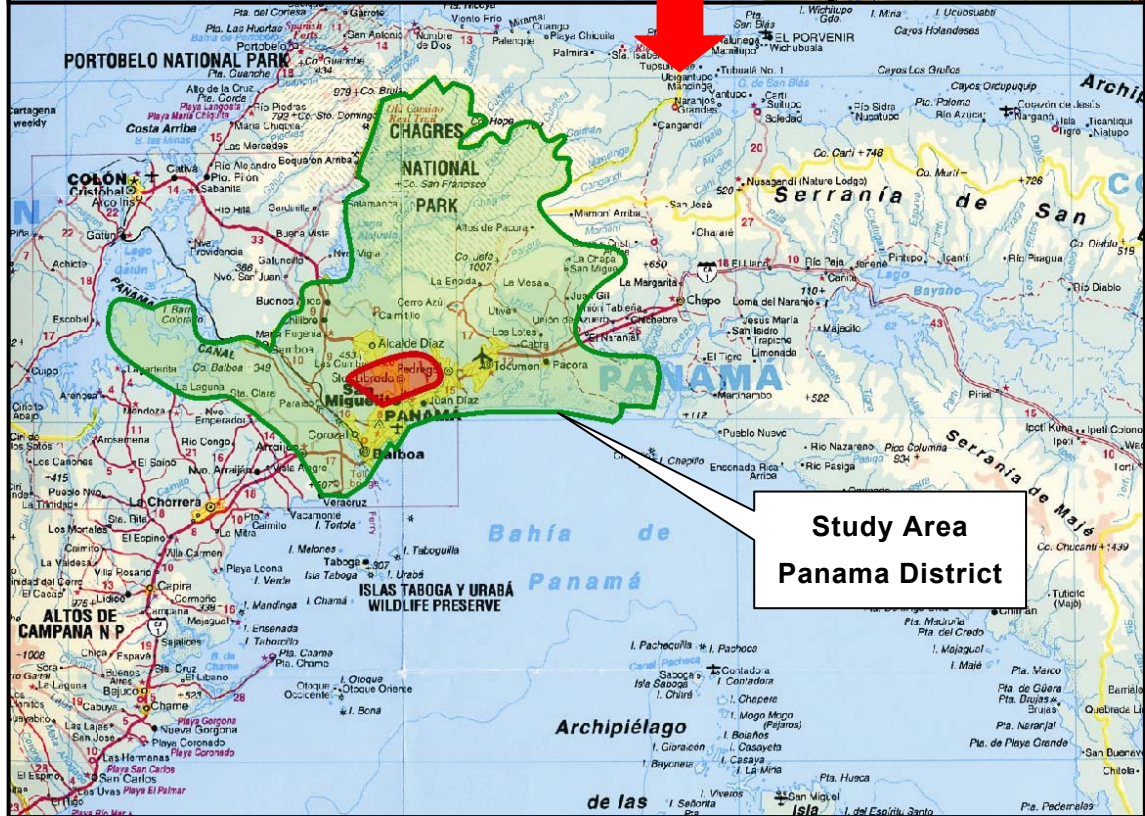
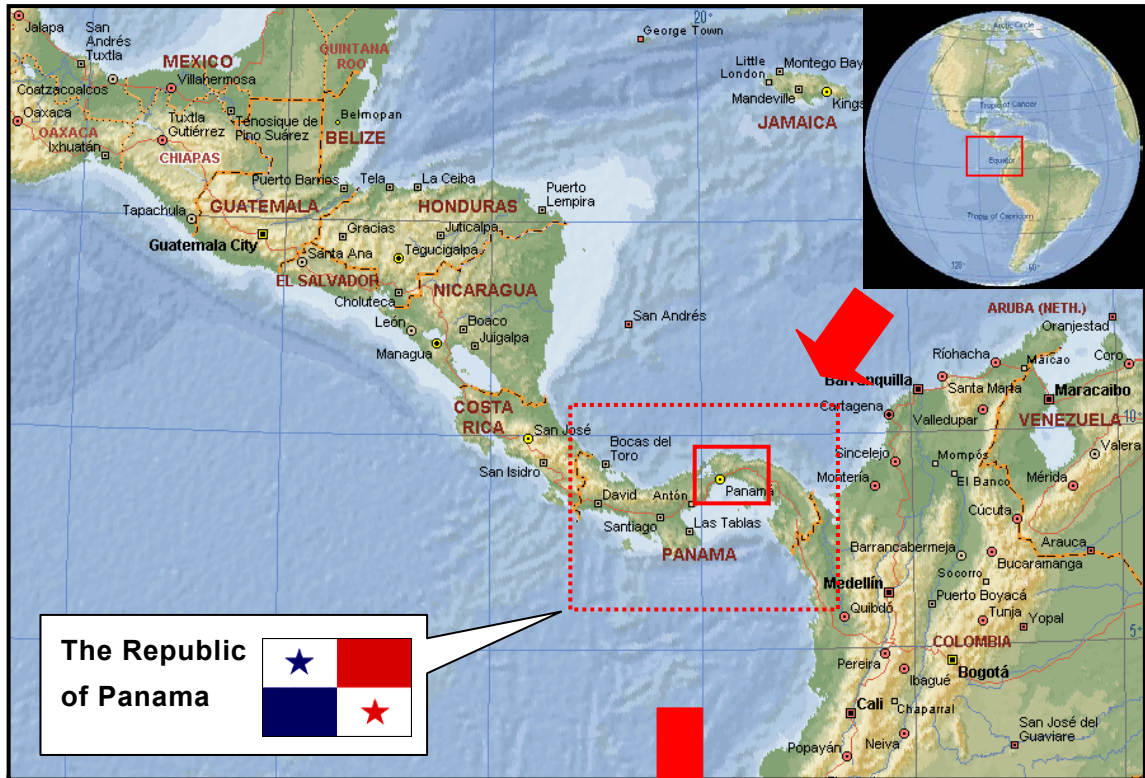
The Study on Solid Waste Management Plan for Municipality of Panama in the Republic of Panama

List of Volumes

- Volume I Summary
- Volume I (S) Summary (Spanish Version)
- Volume II Main Report
- Volume II (S) Main Report (Spanish Version)
- Volume III Annex
- Volume III (S) Annex (Spanish Version)
- Volume IV Data Book
- Volume IV (S) Data Book (Spanish Version)

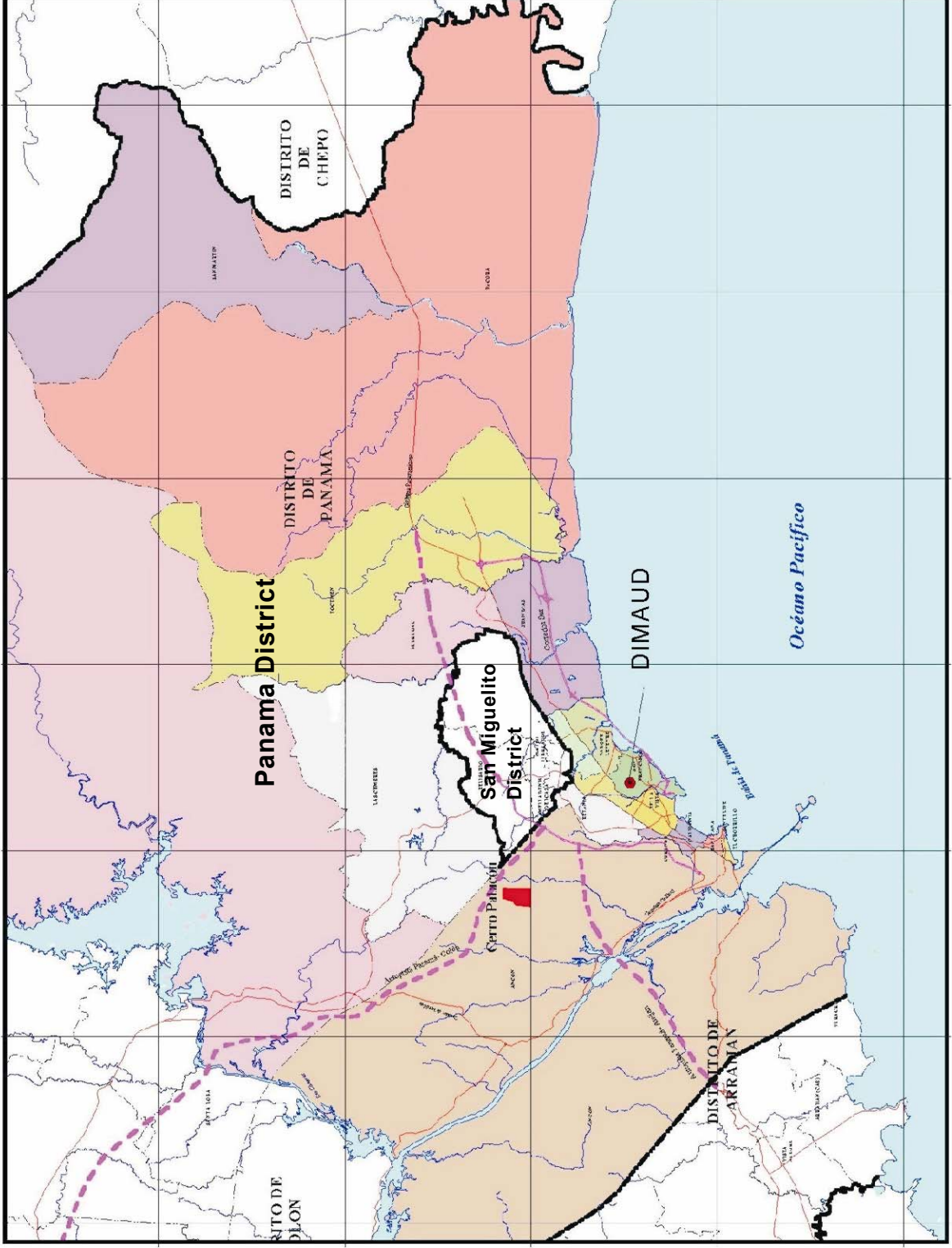
This is the Main Report.

In this report, the project cost is estimated by using the May 2002 price and an exchange rate of US\$1.00=B/1.00(Balboa)=JP¥125.00.



Location Map of the Study Area

(Source: Microsoft Encarta Interactive World Atlas)



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 0 1 2 3 km
 Escala gráfica
 ABRIL DE 2010

Legend

- Highway
- Planned road
- Arterial road
- District border*
- Corregimiento border
- River
- Final Disposal Site

*Border of Panama District is the border of the Study Area.

Map of the Study Area