MINUTES OF MEETINGS

BETWEEN THE JAPAN INTERNATIONAL COOPERATION AGENCY

(JICA) PROJECT TEAM,

THE

MINISTRY OF ENVIRONMENT AND NATURAL RESOURCES

THE REPUBLIC GUATEMALA (MARN),

AND

MINISTRY OF PUBLIC HEALTH AND SOCIAL ASSISTANCE

THE REPUBLIC OF GUATEMALA (MSPAS)

ON

THE ELEVENTH JOINT COORDINATING COMMITTEE (JCC) MEETING

FOR

THE PROJECT FOR CAPACITY DEVELOPMENT FOR WATER ENVIRONMENT CONSERVATION IN THE METROPOLITAN AREA

Guatemala City, March 9th, 2009

Ing. Masami Katayama
Leader
JICA Project Team

Ing. Luis Alberto Ferraté Felice
Minister
Ministry of Environment and
Natural Resources(MARN)

Dr. Víctor Israel Guerra Velásquez
Technical Vice Minister
Minister of Public Health and
Social Assistance (MSPAS)

Witnessed by

Lic. Hiroshi Saito
Resident Representative of
the Japan International
Cooperation Agency
(JICA) Guatemala Office

Done in duplicate in Spanish and English languages, each text being equally authentic. In case of any divergence of interpretation, the English text shall prevail.

1. Introduction

The 11th Joint Coordinating Committee (JCC) meeting was held on March 9th, 2009 at the Los Bosques meeting room of the Ministry of Environment and Natural Resources (MARN) with fourteen (14) participants including MARN officials, representatives from municipalities and a NGO as listed in Annex-1.

2. Main Topics

1) Opening by the Director of the General Directorate of Environmental Management and Natural Resources

Dra. Eugenia Castro, the Director of the General Directorate of Environmental Management and Natural Resources opened the 11th JCC meeting.

2) Presentation of the Progress of the MARN-JICA Project by the

Licda. Nadia Mijangos López, the Coordinator of the Unit of Water Resources and Watershed presented the progress of activities of the MARN-JICA Projects, focusing on two agreements for technical cooperation signed respectively with the Ministry of Public Health and Social Assistance and with AMSA, an incentive project titled MIMEDE, a strategy for social participation, and data sharing.

3) Presentation of Proposed Activities in the 5th year by the leader of the JICA Project Team

Ing. Masami Katayama, the Leader of the JICA Project Team presented proposed activities in the 5th year, between May 2008 and March 2009. His presentation slides are given in the Annex-2.

4) Discussions

After the above presentations, discussions including questions and answers were made among the participants. Records of the discussions are summarized in Annex-3.

5) Closing of the JCC Meeting by the Director of the General Directorate of Environmental Management and Natural Resources by Discussions

After the discussions, Dra. Eugenia Castro closed the meeting, hoping that the next JCC would have the participation of more related organizations. She thanked the presence of all the participants.

3. Attachments

Annex-1 Attendant List of the 11th Joint Coordinating Committee (JCC)

Annex-2 Presentation Slides by Ing. Masami KATAYAMA

Annex-3 Records of Discussions

Annex-1

THE PROJECT FOR CAPACITY DEVELOPMENT FOR WATER ENVIRONMENT CONSERVATION IN METROPOLITAN AREA

Place: Salon Los Bosques
Meeting: 11th JCC Meeting

List of Participants

Time: 10:00 to 11:30
Date: Monday, March 9, 2009

No	Name	Institution	Telephone No.	Email
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3	Juan Gemmell	MARN-DIGARN	2423-0500 2202	jgemmell@marn.gob.gt
4	Mario Gándara	MARN-JICA	ext.1025	
5	Estuardo Ortiz	MUNI MIXCO	2434-4571	harold.estuardo01@ahoo.com
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10	Rita Leticia Lemus	Muni Villa Canales	4084-8451	
11	Asael Enoc Mejia	Muni Villa Canales	5751-3618	
12	Olivia Orellana	URH YC /MARN	2423-0500	
13	Joram Gil	Fundación Solar	2360-1172	joramgil@ahoo.com
14	Ricardo Serrano	MARN		
15	Nadia Mijangos	URH YC /MARN	2423-0500	gmijangos@marn.gob.gt

MINISTERIO DE SALUD PUBLICA Y ASISTENCIA SOCIAL
DE GUATEMALA, C. A.

Annex-2

MINISTERIO DE AMBIENTE Y RECURSOS NATURALES

JICA

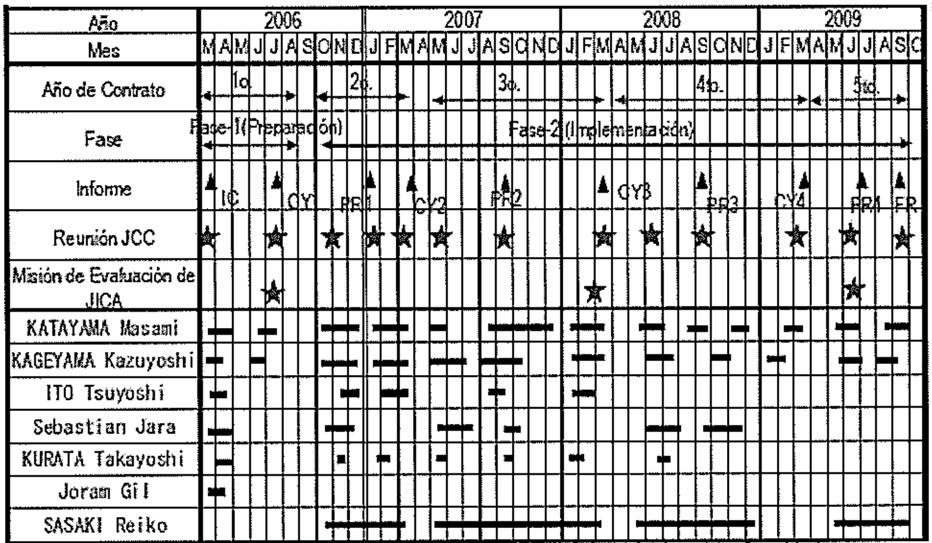
EL PROYECTO PARA
EL DESARROLLO DE CAPACIDADES PARA
LA CONSERVACIÓN DEL MEDIO AMBIENTE ACUÁTICO EN EL ÁREA METROPOLITANA

Plan de Actividades entre Abril y Septiembre de 2009

11ª. Reunión del Comité de Coordinación Conjunta
9 de Marzo de 2009

CTI Engineering International Co., Ltd.

Cronograma Tentativo del Proyecto



IC: Informe de Inicio, PR: Informe de Progreso CY: Informe de Anualde Cumplimiento de Contrato FR: Informe Final

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Actividades Comunes

1 **Evaluació final del proyecto (Junio de 2009)**
- Encuesta sobre los indicadores de la PDM
- Evaluación de la capacidad de la contraparte
- Entrevistas con la contraparte y oficiales de organizaciones relacionadas
- Talleres

2 **12va Reunión del JCC (Junio de 2009)**
- Presentación de los resultados de la evaluación final

3. **13va Reunión del JCC : (Septiembre de 2009)**
- Resúmen del proyecto

Actividades para el Resultado-1 (Políticas y Estrategias)

1 **Talleres (Junio y Septiembre) sobre:**

- El Borrador de las Estrategias para la Aplicación Efectiva del Reglamento de Aguas Residuales
- La Estrategia de Participación Social para la Diseminación de Educación Ambiental a través de los Líderes Locales.

Actividades para el Resultado-2 (Monitoreo de Aguas Residuales)

1 Preparación de la Guía Legal

2 Monitoreo de Aguas Residuales : 200 industrias para Septiembre de 2009

3 Evaluación de los Resultados del Monitoreo y Notificación a las Industrias

4 Evaluación del Sistema de monitoreo e interpretación

5 Publicación de un informe de los resultados del monitoreo

Actividades para el Resultado-3 (Componente de Información Ambiental)

1 Operación y actualización de la Base de Datos del Sistema

2 Acuerdos con las entidades relacionadas para compartir información del ambiente acuático

3 Evaluación de la Operación y actualización de la Base de Datos del Sistema

Actividades para el Resultado-4

(Diseminación del Reglamento y Educación Ambiental)

1. Implementación del Proyecto MIMEDE
   - Divulgación de la Calificacion (Septiembre)

2. Evaluación de las Actividades con MINEDUC para Educación Ambiental Formal del Agua
   - Taller con los maestros (Septiembre)

MINISTERIO DE SALUD PUBLICA Y ASISTENCIA SOCIAL
GUATEMALA, C. A.

Annex-3

Records of Discussions

Ing. Joram Gil (Fundación Solar):

Is there any incentive program to motivate the Municipalities?

Licda. Nadia Mijangos (MARN):

In this moment it is directed only to the industries. MARN does not have enough financial resources to carry out a program dedicated to the Municipalities. This year it was contemplated this way, but in near future MARN will be able to study the possibility to make a similar program for the Municipalities. It is necessary to take it into consideration that the Municipalities will need to prepare their technical study and environmental instruments; at the same time, the period of execution in the regulation is until the year 2015, for this it is necessary to consider these factors. It has been thought that based on the results of the experience of this year (MIMEDE) MARN could see the possibility to carry out a similar program the next year.

Ing. Masami KATAYAMA (JICA Project Team):

In my presentation I told that we would like to expand this circle of data sharing, of which members are only MARN and AMSA at this moment. I want to invite EMPAGUA, municipalities, and the other organizations to join the circle. If so, they will be able to share with MARN and AMSA data/information of the monitoring and the evaluation of the technical studies and water quality data of the Amatitlan Lake and its tributaries. These data/information are very useful for water environmental management of the municipalities. In other words, this data sharing could be an incentive for the municipalities.

Sr. Asael Mejía (Municipality de Villa Canales):

It is known that the industries are those that pollute more (80% was mentioned), the incentives are good but the punctual question is: Is there a regulation to impel sanctions to the industries? As we know in Guatemala we take actions when force is imposed.

Licda. Nadia Mijangos (MARN):

Having incentives doesn't mean that we will leave aside the command and control, there is a procedure settled down in the Law of Protection and Improvement of the Environment that sanctions administratively to those that do not comply with what is regulated, even this law can arrive to instances when the Ministry of Public can be involved, it is for this reason that it is necessary that the Municipalities should make efforts on the matter, because when knowing about industries that don't have their technical study or if they are not complying with the rules, the interested can present a denounce and the same one will be processed.

Ing. Joram Gil (Fundación Solar):

There is no promotion regarding wastewater, there is a lot of publicity related to solid waste, taking care of water, among others, but regarding wastewater, nobody makes anything about it, the thing is that maybe by means of this project something about this matter could be made,

this would be very appropriate.

Licda. Nadia Mijangos (MARN):

In the year 2007 promotion was made during 3 months on television at the schedule of the news, an amount of Q.275,000.00 was invested. At the present time a revision of the regulation is being carried out; for this, the authorities want to wait until finishing the discussion on the topic, to carry out the socialization campaign on the wastewater regulation.

Sr. Juan Gemmel (MARN):

What is the role of Empagua in the wastewater issue?

Licda. Nadia Mijangos (MARN):

EMPAGUA is working in the revision of the regulation by means of the participation of Licda. Alicia Monzón from EMPAGUA. MARN will have to elaborate an agreement to share information, similar to the one signed with AMSA, and this information will strengthen the legal aspects. Another role of EMPAGUA is making the technical study of the Municipality of Guatemala; this municipality is also forced to prepare it according to the regulation.

Sra. Tamayo Ito (JICA Guatemala):

Which one of the four components of the project is the one that have been more successful and which one should be strengthened in the remaining time of the project?

Licda. Nadia Mijangos (MARN):

We have not focused ourselves on the success by each component, because each one of them has given its contribution to the success of the project, it is good to recognize that the regulation by itself doesn't make bigger improvements, but supplemented with the policies and strategies, monitoring activities and evaluation, an information system and the environmental education topic, these have strengthened the capacity of MARN. It is possible that we need more supports on the implementation of strategies, because it becomes necessary to have more resources for this matter.

Sr. Asael Mejía (Municipality de Villa Canales):

Is MARN working nationwide or only in the city of Guatemala?

Licda. Nadia Mijangos:

MARN has emphasized more his actions in the metropolitan area since it is here where most of the contamination is occurring, but MARN also is reinforcing the capacities in the departmental delegations using techniques such as hatch, custody chain, monitoring, among others. With the departmental delegations we can cover the whole territory, but the MARN - JICA project area is focused only to 9 municipalities of the metropolitan area.

MINISTERIO DE SALUD PUBLICA Y ASISTENCIA SOCIAL REP. DE GUATEMALA, C. A.

MINUTES OF MEETINGS

AMONG THE JAPAN INTERNATIONAL COOPERATION AGENCY

(JICA) PROJECT TEAM,

THE MINISTRY OF ENVIRONMENT AND NATURAL RESOURCES

THE REPUBLIC GUATEMALA (MARN),

AND

MINISTRY OF PUBLIC HEALTH AND SOCIAL ASSISTANCE

THE REPUBLIC OF GUATEMALA (MSPAS)

ON

THE TWELVETH JOINT COORDINATING COMMITTEE (JCC) MEETING

FOR

THE PROJECT FOR CAPACITY DEVELOPMENT FOR WATER ENVIRONMENT CONSERVATION IN THE METROPOLITAN AREA

Guatemala City, August 6th, 2009

Ing. Masami Katayama
Leader
JICA Project Team

Licda. Emma Leticia Diaz Lara
Vice-Minister of Natural Resources
Ministry of Environment and
Natural Resources(MARN)

Dr. Víctor Israel Guerra Velásquez
Technical Vice Minister
Minister of Public Health and
Social Assistance (MSPAS)

Witnessed by

Lic. Takeo Sasaki
Resident Representative of
the Japan International
Cooperation Agency
(JICA) Guatemala Office

Done in duplicate in Spanish and English languages, each text being equally authentic. In case of any divergence of interpretation, the English text shall prevail.

1. Introduction

The 12th Joint Coordinating Committee (JCC) meeting was held on August 6th, 2009 at the Los Bosques meeting room of the Ministry of Environment and Natural Resources (MARN). The participants are listed in Annex-1.

2. Main Topics

1) Results of the Terminal Evaluation

As results of the Terminal Evaluation it was reported by Ing. Hiroko Kamata, Leader of the Japanese Evaluation Team, that the project objective and the outputs was being nearly accomplished as stipulated in the PDM although efforts should be continued to fully meet them by the end of the Project and to reach the overall goal in near future as well.

2) Proposed Activities for the 5th Year

Ing. Masami Katayama, Leader of the JICA Project Team presented proposed activities in the 5th year until December 8th. 2009. The Project will be concluded with the next JCC meeting, which will be held at the beginning of December. The presentation slides are given in Annex-2.

3) Concept Paper on the Second Phase of the Project

Licda. Nadia Mijangos, Coordinator of the Unit of Water Resources and Watershed explained about a concept paper that describes a new technical cooperation project proposed by MARN as the second phase of the present MARN-JICA Project. The JICA Terminal Evaluation Team will convey the paper to the JICA headquarters in Tokyo, which will examine the new project. The concept paper is given in Annex-3.

4) Presentation of Wastewater Management in Aichi Prefecture, Japan

Ing. Kei Omura explained about activities for wastewater management made by Aichi Prefecture, Japan, especially focusing on inspection of industrial wastewater. The presentation slides are given in Annex-4.

3. Attachments

Annex-1 Attendant list of the 12th Joint Coordinating Committee (JCC)

Annex-2 Presentation slides by Ing. Masami Katayama

Annex-3 English Translation of concept paper on the proposed second phase of the present MARN-JICA Project

Annex-4 Presentation slides by Ing. Kei Omura

TIEMPO DE SOLIDARIDAD — MARN MINISTERIO DE AMBIENTE Y RECURSOS NATURALES — JICA

ANNEX-A1

LISTADO DE ASISTENCIA

12a Reunion de Comité de Coordinación Conjuta JCC

Salon Los Bosques **Fecha: 06 de Agosto de 2009.**

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11	Tamayo Ito	JICA Guatemala	Ito.Tamayo@jica.go.jp	
12	Kei Omura	AICHI	omura4@ta2.so-net.ne.jp	
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14	Flor Solorzano	MARN/UPHyC	fsolorzano@marn.gob.gt	
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18	Renato Torres V.	LNS/MARN	renatotorres@yahoo.com	
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20	Paola Grimaldi	Sia/Marn	pgrimaldi@marn.gob.gt	

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TIEMPO DE SOLIDARIDAD — MARN MINISTERIO DE AMBIENTE Y RECURSOS NATURALES — JICA

LISTADO DE ASISTENCIA

12a Reunion de Comité de Coordinación Conjuta JCC

Salon Los Bosques **Fecha: 06 de Agosto de 2009.**

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24	Alma de Estrada	MARN	——	[firma]
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27	Carlos Ruiz Flores	MARN	Carlos Ruiz Flores	[firma]
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29	Ana María Ruiz	Segeplan	auai@segeplan.gob.gt	[firma]
30	Hiroko KAMATA	JICA	Kamata.Hiroko@jica.go.jp	[firma]
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32	Irania J. Navarro C.	URHyC MARN	iraniacorrales@gmail.com	[firma]
33	Juan Pablo Guzmán Pereira	URHyC MARN	[illegible]@yahoo.com	[firma]
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35	Enrique Ruiz	MARN		[firma]
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Annex-2

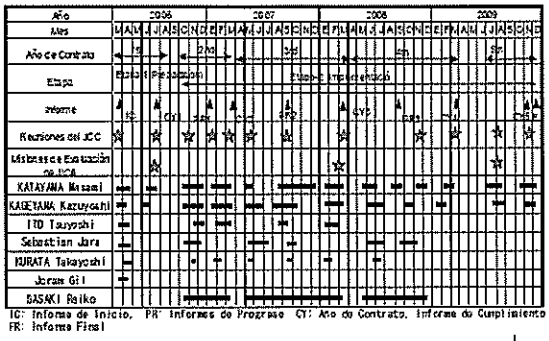
EL PROYECTO PARA
EL DESARROLLO DE CAPACIDADES PARA
LA CONSERVACIÓN DEL MEDIO AMBIENTE ACUÁTICO EN EL ÁREA METROPOLITANA

Avance y Plan de Actividades

12ª. Reunión del Comité de Coordinación Conjunta
6 de Agosto de 2009

CTI Engineering International Co., Ltd.

Cronograma Tentativo del Proyecto



IC: Informe de Inicio, PR: Informes de Progreso CT: Año de Contrato, Informe de Cumplimiento
FR: Informe Final

Actividades Comunes

1 Evaluació final del proyecto (Julio de 2009)
- Encuesta sobre los indicadores de la PDM
- Evaluación de la capacidad de la contraparte
- Entrevistas con la contraparte y oficiales de organizaciones relacionadas
- Talleres

2 12va Reunión del JCC (Junio de 2009)
- Presentación de los resultados de la evaluación final

3. 13va Reunión del JCC : (Noviembre de 2009)
- Resúmen del proyecto
- Reconocimiento a Compañías de Excelencia (Proyecto MIMEDE)

Actividades para el Resultado-1 (Políticas y Estrategias)

1 Talleres (Noviembre) sobre:
- El Borrador de las Estrategias para la Aplicación Efectiva del Reglamento de Aguas Residuales
- La Estrategia de Participación Social para la Diseminación de Educación Ambiental a través de los Líderes Locales.

Actividades para el Resultado-2 (Monitoreo de Aguas Residuales)

1 Preparación de la Guía Legal

2 Monitoreo de Aguas Residuales : 400 industrias para Noviembre de 2009 (330 a Julio de 2009)

3 Evaluación de los Resultados del Monitoreo y Notificación a las Industrias (175 a Julio de 2009)

4 Evaluación del Sistema de monitoreo e interpretación

5 Publicación de un informe de los resultados del monitoreo

Actividades para el Resultado-3 (Componente de Información Ambiental)

1 Reparación y Modificación del Sistema de Base de datos

2 Operación y actualización de la Base de Datos del Sistema (Ingreso de Datos por la URHC del MARN y AMSA)

3 Acuerdos con las entidades relacionadas para compartir información del ambiente acuático (MARN ha iniciado conversaciones con EMPAGUA)

4 Evaluación de la Operación y actualización de la Base de Datos del Sistema

Actividades para el Resultado-4

(Diseminación del Reglamento y Educación Ambiental)

1. Implementación del Proyecto MIMEDE
   - 5 compamies are interested in the MIMEDE Project
   - Divulgación de la Calificacion (Deciembre)
2. Evaluación de las Actividades con MINEDUC para Educación Ambiental Formal del Agua
   - Taller con los maestros (Julio)

Annex-3

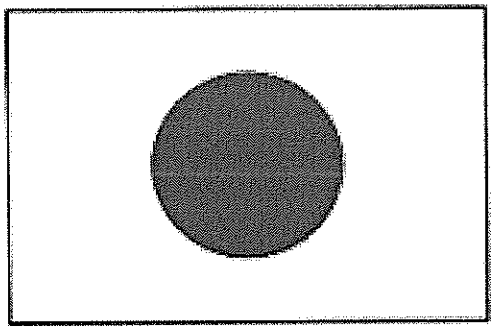
MARN

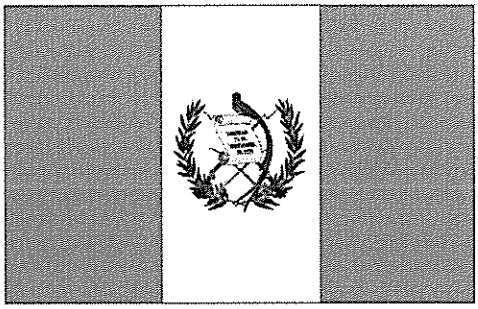
Ministerio de Ambiente y Recursos Naturales

TIEMPO DE SOLIDARIDAD

GOBIERNO DE ÁLVARO COLOM
G U A T E M A L A

II PHASE
PROJECT FOR THE CAPACITY DEVELOPMENT FOR THE CONSERVATION OF THE WATER ENVIRONMENT IN THE METROPOLITAN AREA





GUATEMALA JULY, 2009

COUNTRY: GUATEMALA

II STAGE OF THE PROJECT FOR THE CAPACITY DEVELOPMENT FOR THE CONSERVATION OF THE WATER ENVIRONMENT IN THE METROPOLITAN AREA

AUTHORITIES Ministry of Environment and Natural Resources
Dr. Luis Alberto Ferraté Felice Minister Licda. Enma Diaz Lara Vice Minister of Natural Resources Dr. Luis Zurita Tablada Vice Minister of Environment

Organization:	Water Resources and Watershed Unit	Address	20Th Street 28-56 Zone 10 Guatemala C.A.
Person to Contact:	Licda. Nadia Mijangos	Fax:	24230500
Position:	Coordinator of the Water Resources and Watershed Unit	E-mail:	nmijangos@marn.gob.gt
	Coordinator of the Water Resources and Watershed Unit	Phone Number	24230500 Ext. 2502

I. BACKGROUND

In respond to a request carried out by the Government of Guatemala to the Government of Japan in the year 2004; the Japan International Cooperation Agency "JICA" during August and September of the year 2005, elaborated a preliminary proposal; as a result of a series of studies and discussions, the Ministry of Environment and Natural Resources - MARN - and JICA agreed the implementation of "The project for the Capacity Development for the Conservation of the Water Environment in the Metropolitan Area". The total period of the project is 3.5 years starting from the month of March 2006 to September 2009; the project area includes 9 municipalities of the metropolitan area; the overall goal of the project is: "The policies for the conservation of the water resources in the metropolitan area are reinforced".

During the period from February 18 up to March 06 year 2008 an intermediate evaluation of the project was developed, and concluded that it has been fulfilled what was settled down in the Project Design Matrix of the project.

II. JUSTIFICATION

The Ministry of Environment and Natural Resources, MARN-within the framework of the Guidelines of the Government Socio-environmental Policy, has as a prime target for its governance to guide the governmental management at a national level, in a sustainable way, evolving and enriching, establishing as a priority to recover and preserve the cultural heritage in search of an ecological balance by avoiding predation and loss of environmental quality, for a better human and natural development, in this context, the institutional strengthening of MARN is essential to comply with the environmental guideline and other tools in order to conserve, preserve and improve the environment

There is a tendency to the deterioration of water bodies, especially by the pollution caused by domestic, agricultural and agro-industrial wastewater, causing negative effects on the population health, this is further exacerbated in the interior and rural areas There are estimations that considered that there are 1,660 million m3 / year of wastewaters; if serious measures are not taken on behalf of the country it could be increased up to 3,320 millions m3 in the year 2025 (Segeplan, 2006).

In the year 2006 the Regulation of Discharges and Reuse of Wastewater and sludge Disposition become effective, by the Governmental Agreement 236-2006, in order to contribute to the improvement the water quality.

With the purpose to strengthen the capacity of implementing these regulations for the conservation of water environment, MARN and the Japan International Cooperation Agency, conducted in the metropolitan area The Project for the Capacity Development for the Water Environment Conservation in the Metropolitan Area.

To reinforce the efforts undertaken through the Project implemented by MARN-JICA, is essential for the Ministry of Environment and Natural Resources to develop a second phase of the same one due to the high level of pollution existing in the metropolitan area which has direct influence in the Amatitlan Lake

Water is an integrated resource, water policies and interventions have an impact on development decisions and actions developed upriver, have implications in the lower basin, in this context, it is important to emphasize that the metropolitan area is located in the Upper part of the Maria Linda Basin; in this sense the actions must have an integrative approach

III. OUTLINE OF THE PROJECT

The second phase of the Project for the Capacity Development for the Water Environment Conservation in the Metropolitan Area aims to address four strategic components for the Ministry of Environment and Natural Resources

a. Water Quality

The Amatitlan Lake is subjected to large processes of contamination caused by untreated wastewater from industrial, agricultural, and domestic wastewater. The Amatitlan Lake is a clear example of the accelerated process of Eutrophication as a result of accumulation of wastewater discharges. Through the implementation of the Wastewater Regulation it is intended to develop wastewater assessments, control and monitoring processes

Environmental Quality Standards for Water Bodies (EQS) are the management foundation based on the quality of the water. The EQS define the goals for a water body by designating its use and the criteria for the protection of such uses; the effect of the important

activities is the determination of EQS standards for the Amatitlan Lake and tributaries

b. Protection of the Water Sources.

The protection of the renewable natural resources, especially water, deserves a priority and permanent attention, because the exaggerated expansion of the agricultural areas, inappropriate cattle handling practices and the aggressive pruning of woodlands, have resulted in an alteration of the hydrologic cycle and due to that the resultant scarce of the element base for human life and the development of all living beings.

The protected area called Cerro Alux is strategic for the metropolitan area, since it is a water recharging area, it has an area of 53.72 km2 which comprises 5 municipalities, San Pedro Sacatepéquez, Mixco, Santiago Sacatepéquez, San Lucas and San Juan Sacatepéquez, also has the ability to raise water in an amount 22 million m3/year

In this sense it is necessary to develop strategic interventions aimed to the creation of a water sources inventory, monitoring of the phreatic levels, establishment of a climate station to allow the generation of trustworthy information and finally to develop and implement protection actions for the water sources.

c. Environmental Education and Citizens Participation

The Environmental education output was a successful experience in the first phase of the MARN-JICA Project; in this context it is important to replicate the actions in this second phase

It is intended that in this second phase of the environmental education output, to constitute an ongoing and transversal process, to the MARN's interventions to promote the citizens participation; making considerations to the economic, social, cultural and ecological reality, with the purpose to encourage responsibility. Also in this second phase intends to implement the strategy of social participation developed in the first phase of the Project

d. Institutional Strengthening

The institutional strengthening is constituted by a series of actions, essentially those directed to the Human Capital strengthening of

MARN, inputs and equipment that allow the interventions with efficiency.

IV. OVERALL GOAL AND PROJECT PURPOSE

OVERAL GOAL:

The public policy and the regulation on the conservation of the water environment in the metropolitan area are more effective.

PROJECT PURPOSE:

The capacity for the implementation of public policies and regulations for the conservation of the water environment of MARN will be reinforced.

V. OUTPUTS AND RESULTS

WATER QUALITY

OUTPUT 1. Environmental Quality Standard EQS has been developed for the Lake of Amatitlan and its tributaries.

OUTPUT 2. Quality of the water bodies have being monitored in a partnership with AMSA.

OUTPUT 3. Incentive mechanisms to the private sector and municipalities that implement management plans related to water quality, have being settled down.

OUTPUT 4. The wastewater discharges from generators have being monitored.

WATER SOURCES PROTECTION

OUTPUT 1	An inventory of water sources has been elaborated (superficial and underground waters) from the water recharging area of the Maria Linda basin, with emphasis in the protected area of Cerro Alux.
OUTPUT 2	The phreatic levels and superficial waters in the protected area of Cerro Alux have being monitored.
OUTPUT 3	A weather station type A has being settled down in the protected area of Cerro Alux.
OUTPUT 4	Plans to protect water sources have been developed and implemented.

ENVIRONMENTAL EDUCATION AND CITIZEN'S PARTICIPATION.

OUTPUT 1	The Public Participation Strategy for public participation in the metropolitan area has being implemented.
OUTPUT 2	Processes for Capacity Development related to water and social-environmental sanitation have been developed in coordination with MINEDUC to Secondary School Teachers

INSTITUTIONAL STRENGTHENING.

OUTPUT 1	The Ministry of Environment and Natural Resources has being strengthened in promoting the integrated management of water resources in partnership with municipalities in the project area

VI. IMPLEMENTATION STRATEGY

The implementation strategy of the second phase of the Project will be through the joint work among the following actors:

- Ministry of Environment and Natural Resources
- Municipalities in the metropolitan area.
- Ministry of health and public assistance

- Authority for the integrated management of the basin and the Amatitlan Lake
- Cerro Alux Protected Area Authorities

General Objective	The public policy and the regulation on the conservation of the water environment in the metropolitan area are more effective.

Specific Objective	Area / Component	Results
Specific objective: Strengthening of MARN for the integrated management of the water resources in the high side of the María Linda basin	Water Quality	Standard EQS has been developed for the Lake of Amatitlán and its tributaries.
		Quality of the water bodies have being monitored in a partnership with AMSA.
		Incentive mechanisms to the private sector and municipalities that implement management plans related to water quality, have being settled down.
		The wastewater discharges from generators have being monitored.
	Protection of Water Sources.	Se ha elaborado un inventario de fuentes de agua (aguas superficiales y aguas subterráneas) de la zona de recarga hídrica de la Cuenca Maria Linda, con énfasis en el área protegida del Cerro Alux.
		The phreatic levels and superficial waters in the protected area of Cerro Alux have being monitored.
		A weather station type A has being settled down in the protected area of Cerro Alux.
		Plans to protect water sources have been developed and implemented.
	Environmental Education and Citizen's participation	The Public Participation Strategy for public participation in the metropolitan area have being implemented
		Processes for Capacity Development related to water and social-environmental sanitation have been developed in coordination with MINEDUC to Secondary School Teachers
	Institutional Strengthening	The Ministry of Environment and Natural Resources has being strengthened in promoting the integrated management of water resources in partnership with municipalities in the project area.

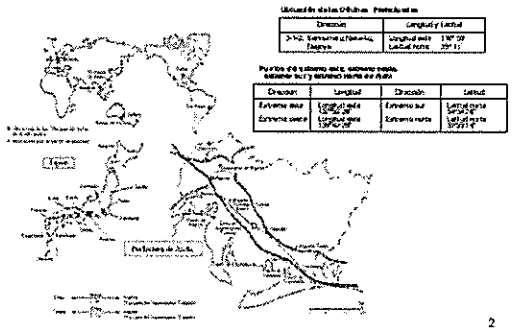
Annex-4

Control de la Calidad de Agua en Japón

Kei Omura
Miembro de la Comisión de Apoyo Interno
Proyecto de Fortalecimiento de la Capacidad de Conservación del Medio Ambiente de las Áreas Acuáticas del Área Metropolitana de Guatemala

1

Ubicación de la Prefectura de Aichi



2

I. Problemas de la contaminación del agua en Japón (Alrededor de 1970)

Debido a la contaminación del agua se produjeron los daños en la salud de la población, los impactos negativos en el medio ambiente de la vida de los ciudadanos y también en las diferentes industrias.

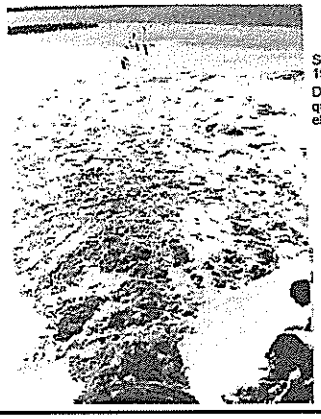
1. Daños en la salud de la población.
   - Mal de Minamata (Causado por el metilmercurio del desagüe de la fábrica)
   - Mal de Itai-Itai (Causado por el cadmio del desagüe de la fábrica)

2. Impactos en el medioambiente de la vida ciudadana y en las industrias.
   - Daños de la contaminación del agua potable, industrial, para riego, etc.
   - Daños en la pesca, etc.
   - Corrosión de las placas exteriores de las embarcaciones y pilares de los puentes, etc.
   - Problemas del saneamiento ambiental en las ciudades.
   - Deterioro del valor del paisaje urbano, etc.

3

Mal de Minamata

4



Septiembre de 1968
Descarga industrial que desemboca en el Río Kiso.

5

6

II. Antecedentes de las Restricciones

1. Normas ambientales

(1)Establecimiento de las normas ambientales de los cuerpos de agua públicos (1970)
(2)Agregado de las normas ambientales del nitrógeno y del fósforo.
lagos (1982), zona marítima (1993)
(3) Establecimiento de las normas ambientales del agua subterránea (1997)

2. Ley de Prevención de la Contaminación del Agua
(1) Puesta en vigor de la Ley de Prevención de la Contaminación del Agua (1971)
(2) Modificación de la Ley de Prevención de la Contaminación del Agua
- Prohibición de la infiltración del agua con contenido de sustancias nocivas hacia el agua subterránea (1989).
- Establecimiento de la promoción integral de las medidas contra las aguas residuales de origen doméstico (1990).

7

III. Atribuciones de Instrucción y Supervisión

1. Ministerio de Medio Ambiente
- Acondicionamiento de las disposiciones legales (Ley de Prevención de la Contaminación del Agua).
- Asesoría a la prefectura.
2. Prefectura
- Acondicionamiento de las ordenanzas. (Determinación de las normas de restricción más severas que la ley teniendo en consideración las características de la región)
- Evaluación del contenido de la declaración.
- Visita oficial de Inspección.(inspección in situ)
- Inspección administrativa por muestreo del agua
- Orden de mejoramiento (Mejoramiento de las facilidades, modificación del plan, etc.).
- Orden de suspensión de descarga (Se prohíbe el desagüe.)

8

IV. Estructura Organizativa y Visita de Inspección Oficial (Prefectura de Aichi)

1. Organización (Relativa a la contaminación del agua)
- División Ambiente Acuático y Suelo del Departamento del Medio Ambiente de la Gobernación de Aichi 31 personas
- Dependencias regionales de la Prefectura de Aichi (7 lugares) (Visita oficial de inspección , evaluación de los documentos) 91 personas
- Centro de Estudio Medioambiental de la Prefectura de Aichi (Relacionado con el análisis del agua) 11 personas

2. Estado de las visitas oficiales de inspección
(1º de abril de 2006 ~ 31 de marzo de 2007)
- Cantidad de establecimientos objeto (en el 31 de marzo de 2007) 9.728 establecimientos
- Cantidad de establecimientos inspeccionados 4.548 establecimientos
- Cantidad de muestreos de agua 1.014 establecimientos
- Medidas aplicadas 31 establecimientos
- Presupuesto 10.125.000 yenes (Excepto gastos del personal)

9

V Visita Oficial de Inspección

1 Objetivo
(1) Inspección normal Verificación del contenido de declaración
Análisis de Calidad de Agua
(2) Inspección urgente

2 Forma de Inspección
(1) Número del Personal 2 funcionarios
(2) Notificación Sin previo aviso
(3) Equipos Documento de declaración
Instrumento para tomar agua
kit de examen rápido

10

3 Puntos de inspección
(1) Inspección normal -Discrepancia con la declaración
-Verificación de la situación del planta de tratamiento
-Verificación de la calidad de aguas residuales
(2) Inspección urgente -Mejoramiento de calidad de aguas residuales

4 Medidas basadas en los Resultado de Inspección de Agua
(1) Exhortación de mejoramiento
(2) Orden de mejoramiento
(3) Orden de suspensión de descarga

11

Marzo,2009
Río Kiso

12

MINUTES OF MEETINGS

AMONG THE JAPAN INTERNATIONAL COOPERATION AGENCY

(JICA) PROJECT TEAM,

THE MINISTRY OF ENVIRONMENT AND NATURAL RESOURCES

THE REPUBLIC GUATEMALA (MARN),

AND

MINISTRY OF PUBLIC HEALTH AND SOCIAL ASSISTANCE

THE REPUBLIC OF GUATEMALA (MSPAS)

ON

THE TWELVETH JOINT COORDINATING COMMITTEE (JCC) MEETING

FOR

THE PROJECT FOR CAPACITY DEVELOPMENT FOR WATER ENVIRONMENT CONSERVATION IN THE METROPOLITAN AREA

Guatemala City, December 3rd, 2009

Ing. Masami Katayama
Leader
JICA Project Team

Dr. Luis Armando Zurita Tablada
Vice-Minister of Environment
Ministry of Environment and
Natural Resources(MARN)

Dr. Víctor Israel Guerra Velásquez
Technical Vice Minister
Minister of Public Health and
Social Assistance (MSPAS)

Witnessed by

Lic. Takeo Sasaki
Resident Representative of
the Japan International
Cooperation Agency
(JICA) Guatemala Office

Done in duplicate in Spanish and English languages, each text being equally authentic. In case of any divergence of interpretation, the English text shall prevail.

1. Introduction

The 13th Joint Coordinating Committee (JCC) meeting was held on December 3rd, 2009 at the Los Bosques meeting room of the Ministry of Environment and Natural Resources (MARN). The participants are listed in Annex-1.

2. Main Topics

1) Project Activities

Following a brief explanation of the backgrounds of the Project by Ing. Masami Katayama, Leader of the JICA Project Team, the representatives of the four Technical Working Groups, presented activities carried out under the Project.

Regarding the Output-1, strategies for effective enforcement of the Current Wastewater Regulation (El Reglamento de Descargas y Reuso de Aguas Residuales y Disposición de Lodos: Acuerdo Gubernativo No.236-2006) and for social participation for dissemination of water environmentl education were elaborated. One of the strategies that was implemented is The Project called "Model to incentive the Integrated Wastewater of Special Type management in the Metropolitan Area" (MIMEDE Project).

The main activity for the Output-2 was wastewater monitoring. Samples of wastewater and sludge of 400 industries in the Project Area were taken by MARN, and their quality analysis was made by LBNS (Laboratorio National de Salud) under an agreement among MARN, MSPAS (Ministry of Public Health and Social Assistance) and JICA (Japan International Cooperation Agency) covering 200 wastewater samples and another agreement signed between MARN and MSPAS to cover another 200 wastewater samples. Results of the wastewater monitoring were compiled in a monitoring report.

A water environmental database system was developed as a product of the activities for the Output-3. This GIS database, which is accessible from the website of MARN contains two kinds of data, data of the wastewater monitoring by MARN and data of water quality monitoring by AMSA for the Amatitlan Lake and its tributaries.

The Output-4 was regarding water environmental education. In addition to the dissemination campaign for the Current Wastewater Regulation, water environmental education activities for secondary school were made under the collaboration with the Ministry of Education (MINEDUC).

2) Conclusion of the Project

Licda. Nadia Mijangos, Coordinator of the Unit of Water Resources and Watersheds concluded the Project as follows:

Thanks to efforts of the personnel concerned and the cooperation of related organizations, the Project progressed almost as planned and the project purpose, "MARN's implementation capacity of the Current Wastewater Regulation for water environment conservation in the Metropolitan Area is reinforced." was attained.

3) Recommendations for Management of Water Environment in Guatemala

Ing. Masami KATAYAMA made several recommendations for the accomplishment of the Overall Goal, "The policy of conservation of water resources in the metropolitan area is reinforced." As follows:

Policy Issues

- The Government of Guatemala should invest for the development of sewerage systems with treatment plants at municipal level
- To strengthen the collaboration systems with municipalities for implementation of the Current Wastewater Regulation
- To implement incentive instruments

- To establish Environmental Quality Standards for water bodies
- To seek the understanding with stakeholders towards the revision of the Current Wastewater Regulation
- To strengthen the legal framework
- To strengthen the URHC
- To strengthen the collaboration systems with related organizations

Issues of Wastewater Monitoring

- To develop an effective surveillance program for the technical study
- To strengthen the surveillance systems especially towards those related to absorption wells
- To place a competent person for auditing the wastewater monitoring process
- To carry out the Data Interpretation and Feedback

3. Attachments

Annex-1 Attendant list of the 13th Joint Coordinating Committee (JCC)

PROYECTO PARA EL DESARROLLO DE CAPACIDADES PARA LA CONSERVACION DEL MEDIO AMBIENTE ACUATICO EN EL AREA METROPOLITANA

Lugar: Salón Los Bosques
La 13ª Reunión del Comité de Coordinación Conjunta JCC

Lista de Asistencia

Hora: 08:30 a 11:00 Hrs.

Fecha: 03 de Diciembre de 2009.

No	Nombre	Institución	Teléfono	Email
1	Sthefany Fuentes	AMSA	66859292	sfuentes@amsa.gob.gt
2	Elsa Jauregui	AMSA	66859292	ejauregui@amsa.gob.gt
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5	Carlos Ruiz	MARN/DGCL	52751684	Carlosruizflo@gmail.com
6	Antonio Oralle	JICA	23819400	Oralleja1@hotmail.com
7	Julia Flores			
8	Diana Sánchez	MARN/FODES	40975035	dcapacitacion2@marn.gob.gt
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10	Mario Gandara	Jica Project Team		Rgandara@yahoo.com
11	Flor Solorzano	MARN / URHyC	24230500	fsolorzano@marn.gob.gt
12	KAGEYAMA. K	JICA Project team		kageyama@ctii.co.jp
13	Marilyn Campos	URHyC	24232500	mcampos@marn.gob.gt
14	Carolina Cuevas	URHyC	24730500	mcuevas@marn.gob.gt
15	Nestor Fajardo	URHyC	57047956	Nfajardo@marn.gob.gt
16	DIEGO GARCIA DIAZ	URHyC	57623289	dgarcia@marn.gob.gt
17	Henry Sep	URHyC		henrysep@gmail.com
18	Adolfo Macario	URHyC	57785713	amacario@marn.gob.gt

A-1

A-1-181

Annex-1

PROYECTO PARA EL DESARROLLO DE CAPACIDADES PARA LA CONSERVACION DEL MEDIO AMBIENTE ACUATICO EN EL AREA METROPOLITANA

Lugar: Salón Los Bosques
La 13ª Reunión del Comité de Coordinación Conjunta JCC

Lista de Asistencia

Hora: 08:30 a 11:00 Hrs.

Fecha: 03 de Diciembre de 2009.

No	Nombre	Institución	Teléfono	Email
19	Margarita Giron	JICA PROJECT TEAM	ext. 2525	margarita.jica@gmail.com
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21	Carlos Mazariegos	✓ ✓	✓ ✓	crmazariegos@marn.gob.gt
22	Ricardo Serrano	marn - URHyC	- - ✓	rserrano@marn.gob.gt
23	Doran Muñoz	✓	✓	dmuñoz@marn.gob.gt.
24	Juliana Simmons	Marn	2715	JmSimmons@marn.gob.gt.
25	Dr. Zurita Tablada	Vice-ministro Ambiente	1216	Viceministroambiente@marn.gob.gt.
26	Claudia Benavente	Coord RRPP	1124	
27	Alejandro Bosarreyes	SID / MARN	2409	abosarreyes@marn.gob.gt.
28	Jorge Mario Aceituno D.	SIA/MARN	2410	jmaceituno@marn.gob.gt
29	Benergi Rodas	URHyC / MARN	2103	brodas@ _ ✓
30	Nadia Mijangos	MARN/URHyC	2501	nmijangos@marn.gob.gt
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19

Annex-2

PDM and PO

PDM_0 (Prepared in March 2006)

Project Title: The Project for Capacity Development for Water Environment Conservation in the Metropolitan Area
Project Period: March 2006 to October 2009 (44 months)
Target Area: The Metropolitan Area of Guatemala
Target Group: Staff of the Ministry of Environment and Natural resources

Narrative summary	Objectively verifiable indicators	Means of verification	Important assumptions
<Overall Goal> • Public policy and regulation on water environment conservation in the metropolitan area will be effective.	• Values of water quality parameters in the metropolitan area	• Regular monitoring • White paper on water environment or hearing to stakeholders	• Environment-oriented policy of the Guatemalan government will not change.
<Project Purposel> • MARN's implementation capacity of public policy and regulations for water environment conservation in the metropolitan area will be reinforced.	• Concrete fruits of MARN's water environment conservation policy • Progress of collaboration with related organizations	• Projects and plans made by MARN • Agreement documents for collaboration with related organizations	• Budget of MARN will not decrease drastically. • Mutual consent of collaboration among the related organization for water environment conservationwill not changed.
<Output> **Output 0:** PDM（Draft）and PO(Draft) to be implemented in Stage2 will be elaborated.	• PDM and PO	• Contract Yearly Completion Report	• Mandates of MARN regarding water environment conservation will not be changed.
Output 1: Strategy formulation and implementation capacity for water environment conservation will be reinforced.	• Number of MARN staff • MARN's administrative execution capacity	• MARN's activity report (annual report)	
Output 2: Implementation of wastewater control will be prepared.	• Manuals and guidelines for wastewater control are furnished. • An inventory of effluent factories and farms is prepared.	• Manual and guideline books. • Inventory book	
Output 3: Compilation and administration of water quality information will be systematized.	• Conditions of unification and sharing of water quality data management among related organizations. • Condition of management and storage of water quality data. • Adequacy of water quality monitoring.	• Database of water quality • Water quality monitoring reports	
Output 4: Environmental education, diffusion on water environment conservation will be implemented by MARN, based on the collaboration with related organizations.	• Water quality information is published. • Education materials are prepared. • Education activities are implemented.	• Water quality information system • MARN's activity report (annual report) • Education materials	

<Activities>	<Input>	
0-1 : To review MARN's present condition regarding water environment conservation (legislation, strategies, activities, etc.). 0-2 : To examine feasibility of Activities 1-1 to1-3, 2-1 to 2-3, 3-1 to 3-5, 4-1 to 4-3. 0-3 : To review and finalize PDM and PO for Stage 2 based on the 0-2 activity. 1-1 : To review current strategies of government water policy and to develop strategies on water environment conservation in the metropolitan area. 1-2 : To recommend institutional and organizational improvement regarding water environmental conservation. 1-3: To implement training for MARN's staff in water environment conservation policies and strategies. 2-1 : To review and improve existing implementation plan of wastewater control. 2-2 : To elaborate guideline for MARN's staff regarding application of wastewater control regulation. 2-3 : To implement training for MARN's staff regarding application of wastewater control. 3-1 : To elaborate water quality monitoring plan in collaboration with other related organizations. 3-2 : To establish inter-institutional collaboration for data collection. 3-3 : To collect water quality data from other related organization. 3-4 : To develop and manage water quality database. 3-5 : To implement training on monitoring data administration. 4-1 : To publish water environment information. 4-2 : To implement environmental education, awareness raising, diffusion, and activities regarding water environment conservation in collaboration with other related organization.	**Japanese side** 1. experts : Stage 1: Policy and Strategy, Water Quality Management, PCM, Organization and Institution, Water Quality Analysis and Laboratory, Pollusion Sources (6 persons). Stage2: Policy and Strategy, Wastewater Control, Environmental Education, Water Quality Information PCM, Organization and Institution, Water Quality Analysis and Laboratory, Pollusion Sources (5 persons) 2. Training Programs in collaboration with Mexican organizations (1) Invitation of Mexican experts (2) Training of counterpart personnel in Mexico **Guatemala side** - For Stage 1 and Stage 2 1. Counterpart personnel • Chairman of Joint Coordinating Committee(1 person) • Project Director (1 Person) • Project Manager (1 Person) • Project members 2. Facilities for Japanese side The Gatemalan side will provide office space under the secure conditions. The facilities will be eqqipped with desks, meeting tables, communication equipment, etc. 3. Equipment and materials The Gatemalan side will provide other necessary equipment and materials necessary for project implementation. 4. Budget for project operation The Gatemalan side will provide salary and allowance for the staff of the Guatemalan side, including budget for travel expenses and operation expenses required under the project.	• **<Preconditions>** • Staff of MARN and other associated functions are assigned to the Project by an official instruction.

PO_0 (Prepared in March 2006)

Year	2006				2007				2008				2009		
Contract Year	1st year			2nd Year		3rd Year			4th Year				5th Year		
Month	1 to 3	4 to 6	7 to 9	10 to 12	1 to 3	4 to 6	7 to 9	10 to 12	1 to 3	4 to 6	7 to 9	10 to 12	1 to 3	4 to 6	7 to 9
Activity	0Q	1Q	2Q	3Q	4Q	5Q	6Q	7Q	8Q	9Q	10Q	11Q	12Q	13Q	14Q
<Stage 1>															
0: PDM(Draft) and PO (Draft) to be implemented in Stage 2 will be elaborated.															
0-1: To review MARN's present condition regarding water environment conservation(legislation, strategies, activities, etc.)															
0-2: To examine feasibility of Activities: 1-1 to 1-2, 2-1 to 2-3, 3-1 to 3-5, 4-1 to 4-2.															
0-3: To review and finalize PDM and PO for the stage 2 based on the 0-2 activity.															
<Stage 2>															
1: Strategy formation and implementation capacity for water conservation will bw reinforced.															
1-1 : To review current strategies of government water policy and to develop strategies on water environment conservation in the metropolitan area.															
1-2 : To recommend institutional and organizational improvement regarding water environment conservation.															
1-3: To implement training for MARN's staff in water environment conservatin policies and strategies.															
2 : Implementation of Water discharge regulation will be prepared.															
2-1: To review and improve existing implementation plan of water discharge regulation.															
2-2 : To elaborate guideline for water discharge regulation.															
2-3 : To implement training for MARN's staff in water discharge regualation.															
3: Compilation and administration of water quality information will systematized.															
3-1 : To elaborate water quality monitoring plan in collaboration with related organization.															
3-2 : To establish inter -institutional collaboration for data collection.															
3-3 : To collect water quality data from other related organizations.															
3-4 : To develop and manage water quality database.															
3-5 : To implement training for MARN's staff in monitoring data administration.															
4 : Environmental education, diffusion on water environment conservation will be implemented by MARN, based on the collaboration with related organization.															
4-1 : To publish water environment information.															
4-2 : To implement activities of environmental education, awareness raising and diffusion in collaboration with other related organization.															
4-3 : To implement traing for MARN's staff in environmental education, awareness raising and diffusion.															

PDM_{01} (Revised on July 4, 2006)

Project Title: The Project for Capacity Development for Water Environment Conservation in the Metropolitan Area

Project Period: March 2006 to September 2009 (42 months)

Target Area: Nine (9) Municipalities in the Metropolitan Area of Guatemala(Guatemala, Mixico, Villa Nueva, Villa Canales, Chinautla, San Miguel Petapa, San Pedro Ayampuc, Santa Catarina Pinula and Amatitlan

Target Group: Staff of the Ministry of Environment and Natural resources

Narrative summary	Objectively verifiable indicators	Means of verification	Important assumptions
<Overall Goal> • Public policy and regulation on water environment conservation in the metropolitan area is effective.	• 50 % of the 9 municipalities and selected industries accomplish the first stage reduction schedule of the wastewater regulation (for the municipalities in 2015 and for industries in 2011).	• Monitoring results by MARN	• Water environment-oriented policy of the Guatemalan government does not change.
<Project Purpose> • MARN's implementation capacity of the wastewater regulation for water environment conservation in the metropolitan area is reinforced.	• The results of the Capacity Assessment regarding the wastewater regulation are improved from XX points in October 2006 to XX points in September 2009. • Perception of MARN is improved from XX points in October 2006 to XX points in September 2009. • The staff number of the Unit of Watershed and Water Resources of MARN is increased from 8 (7 permanent and 1 temporal) in July 2006 to 16 (8 permanent and 8 temporal) in September 2009.	• Results of Capacity Assessment • Questionnaire survey • Annual Report of MARN	• Budget of MARN does not decrease drastically. • Mandates of MARN regarding water environment conservation are not changed.
<Output> **Output 0:** PDM_1 and PO_1 to be implemented in Stage2 are elaborated.	• PDM_1 and PO_1 are elaborated.	• PDM_1 and PO_1	• Participation of counterpart personnel is ensured. • Transfer of counterparts is less. • The progress of the technical studies by industrial and agro-industrial wastewater generators is conducted on schedule. • Budget for water quality analysis by MARN is ensured. • Necessary information is provided in time.
Output 1: Strategy formulation capacity for effective enforcement of the wastewater regulation is reinforced.	• By December 2007 strategies for effective enforcement of the wastewater regulation (financial frameworks for municipalities, collaboration mechanism with municipalities, incentives for industries, procedures of setup of environmental standards for water bodies) are proposed. • The proposed four strategies are officially approved by the Minister of MARN. • The proposed strategies are revised based on comments from related organizations.	• Proposed four strategies • Approval by the Minister • Comments from related organizations • Revised four strategies	
Output 2: Activities for the implementation of the wastewater regulation are commenced.	• By November 2006 rational way of water quality analysis is studied. • By September 2009 manuals for wastewater monitoring and legal process for wastewater control are furnished. • By May 2007 an inventory of industrial and agro-industrial effluents is prepared. • By August 2009 sampling and quality analysis of wastewater is conducted for 400 industrial and agro-industrial wastewater generators (200 under the pilot project and the rest 200 by MARN).	• Manuals or guidelines • Inventory • Map of sampling sites • Results of water quality analysis	
Output 3: Sustainable system of compilation and administration for water environmental information is established.	• Digital map data are collected from MAGA by September 2006. • Water quality monitoring data are continuously collected from AMSA. • By September 2008 database system of water environmental information is established. • By September 2008 training for management of the database system is provided to more than 30 staff of MARN. • Between September 2008 and August 2009 updating of the database is made appropriately by the staff of MARN.	• Agreement with AMSA • Database system • Training records	

Narrative summary	Objectively verifiable indicators	Means of verification	Important assumptions
Output 4: Environmental education and dissemination related to the wastewater regulation is implemented by MARN, based on the collaboration with related organizations.	• Perception and knowledge on the wastewater regulation among the municipalities, industries and local residents is improved from XX points in October 2006 to XX points in September 2009. • Materials for dissemination of the wastewater regulation are developed by March 2007. • Materials of formal education are developed by December 2007. • Trainer's training is provided to 30 staff of the Ministry of Education by September 2008. • Monitoring of the teachers' training is conducted between October 2008 and August 2009.	• Questionnaire survey • Materials for dissemination • Materials of formal education • Training records • Monitoring report	
<Activities> 0-1 : To review MARN's present condition regarding water environment conservation (legislation, strategies, activities, etc.). 0-2 : To examine feasibility of Activities 1-1 to1-3, 2-1 to 2-3, 3-1 to 3-5, 4-1 to 4-3. 0-3 : To review and finalize PDM and PO for Stage 2 based on the 0-2 activity. 1-1 : To propose policies and strategies for effective enforcement of the wastewater regulation. 1-2: To revise the proposed strategies based on comments from related organizations. 1-3: To implement training for the staff of MARN and related organizations on water environment conservation policies and strategies. 2-1 : To prepare guideline for the implementation of wastewater control. 2-2 : To implement training for the staff of MARN and related organizations on wastewater control. 3-1 : To collect data on water environment information. 3-2 : To develop and manage water environmental information database. 3-3 : To implement training for the staff of MARN and related organizations on data administration of water environment. 4-1 : To conduct environmental education/dissemination related to the wastewater regulation to the municipalities, industries and local residents. 4-2 : To develop environmental education materials, and provide trainer's training for water environmental education 4-3 : To implement training for the staff of MARN and related organizations on environmental education	**<Input>** **Japanese side** 1. Experts : Stage 1: Policy and Strategy Water Quality Management, PCM, Organization and Institution, Water Quality Analysis and Laboratory, Pollution Sources (6 persons). Stage2: Policy and Strategy, Wastewater Control, Environmental Education, Water Quality Information, Organization and Institution (5 persons). 2. Training Programs 3. Expenses (1) Pilot projects (2) Database system preparation (3) Others **Guatemala side** - For Stage 1 and Stage 2 5. Counterpart personnel • Chairman of Joint Coordinating Committee and Project Director (1 person) • Deputy Project Director (1 Person) • Project Manager (1 Person) • Working Group Members 6. Facilities for Japanese side The Gatemalan side provides office space under the secure conditions. The facilities will be equipped with desks, meeting tables, communication equipment, etc. 7. Equipment and materials The Gatemalan side provides other necessary equipment and materials necessary for project implementation. 8. Budget for project operation The Gatemalan side provides salary and allowance for the staff of the Guatemalan side, including budget for travel expenses and operation expenses required under the project.		**<Preconditions>** • Staff of MARN and other associated functions are assigned to the Project by an official instruction.

PO_{01} (Output-1)

Revised on July 4, 2006

Output-1: Strategy formulation capacity for effective enforcement of the wastewater regulation will be reinforced.

Activities	Expected Results	Schedule																Person in Charge	Implementer	Materials and Equipment	Cost	Remarks
		2006				2007				2008				2009								
		3	6	9	12	3	6	9	12	3	6	9	12	3	6	9	12					
1-1:To propose policies and strategies for effective enforcement of the wastewater regulation.																						
1-1-1: To propose financial frameworks for municipalities to construct and maintain treatment plants.	Proposed financial mechanism				■	■	■	■										Mario Pineda	Working group 1	None	Cost for interview survey (Input by JICA)	
1-1-2: To propose a collaboration mechanism with municipalities for monitoring of wastewater	Proposed collaboration mechanism				■	■	■	■	■									To be named	Working group 1	None	Minimal	
1-1-3: To propose incentives for industries to comply with the wastewater regulation.	Proposed Incentive measures					■	■	■	■									To be named	Working group 1	None	Minimal	
1-1-4: To propose procedures for setup of water quality standards for public water bodies (classification of water bodies).	Proposed Procedures					■	■	■	■									To be named	Working group 1	None	Minimal	
1-1-5: To obtain an official approval from the Minister of MARN	Approval								■									Nadia	Working group 1	None	Minimal	
1-2: To revise the proposed strategies based on comments from related organizations																						
1-2-1: To collect comments from related organizations	Collected comments									▒	▒	▒						To be named	Working group 1	None	Cost for seminars, materials (JICA Input)	
1-2-2: To revise the strategies based on the collected comments	Revised strategies												■	■	■			To be named	Working group 1	None	Minimal	
1-3:To implement training for the staff of MARN and related organization on water environment conservation policies and strategies.																						
1-3-1: To organize a technology transfer seminar with Mexican expert invited as a lecturer.	One-week seminar				■													Katayama	JICA Project Team	Text, Seminar Place	Input by JICA	

■ Activities under the Project, ▒ Activities under the responsibility of MARN

PO_{01} (Output-2)

Revised on July 4, 2006

Output-2: Activities for the implementation of the wastewater regulation is commenced.

Activities	Expected Results	Schedule																Person in Charge	Implementer	Materials and Equipment	Cost	Remarks
		2006				2007				2008				2009								
		3	6	9	12	3	6	9	12	3	6	9	12	3	6	9	12					
2-1: To prepare guideline for the implementation of wastewater control.																						
2-1-1: To determine plan and program for the implementation of wastewater control	Implementation plan for wastewater control																	Nadia	Working group 2	None	Minimal	
2-1-2: To conduct an inventory survey for industrial factories in the study area.	Inventory of industrial factories																	Flor	Working group 2	None	Minimal	
2-1-3: To provide and modify legal guidance for the implementation of wastewater regulation and	Legal guidance																	Serrano	Working group 2	None	Minimal	
2-1-4: To study rational way for water quality analysis	Study results																	Flor	Working group 2	None	Minimal	
2-1-5: To collect information necessary for manual or guideline preparation.	Collected information																	Nadia	Working group 2	None	Cost for traveling (Input by JICA)	
2-1-6: To prepare a draft manual (1st.edition) of the wastewater control.	Draft Manual																	Flor & Eric	Working group 2	None	Minimal	
2-1-7: To prepare 2nd. and 3rd.editions of the manual for the wastewater control.	Manual for wastewater control.																	Flor & Eric	Working group 2	None	Minimal	
2-1-8: To establish cooperation system with the competent agencies for water quality analysis	Agreement.																	Nadia	Working group 2	None	Minimal	
2-1-9: To implement monitoring and legal process as pilot project	Report of pilot project for wastewater control																	Eric	Working group 2	Sampling Equipment	Input by JICA	
2-1-10: To continue monitoring work for wastewater control																		Eric	Working group 2	Sampling Equipment	Input by MARN	
2-1-11: To evaluate monitoring work	Monitoring report																	Kageyama	Working group 2	None	Minimal	
2-1-12: To publish summary report of the wastewater monitoring results.	Summary report																	Flor	Working group 2	None	Minimal	
2-2: To implement training for the staff of MARN and related organization on wastewater control																						
2-2-1: To organize a technology transfer seminar with Mexican expert invited as a lecturer.	One-week seminar																	Katayama	JICA Project Team	Text, Seminar Place	Input by JICA	
2-2-2: To prepare guidance for the evaluation of the																		Nadia	Working	None	Minimal	

Activities	Expected Results	Schedule																Person in Charge	Implementer	Materials and Equipment	Cost	Remarks
		2006				2007				2008				2009								
		3	6	9	12	3	6	9	12	3	6	9	12	3	6	9	12					
technical study																		&Flor	group 2			
2-2-3: To organize workshop for the evaluation of the technical study (30 trainees)	5-day seminar					■												Nadia & Flor	Working group 2	Materials, Seminar place	Cost for Seminar (Input by JICA)	
2-2-4: To provide training for the evaluation of technical study (5 trainees)	5-day training					▒												Flor	Working group 2	None	Minimal	
2-2-5: To dispatch the staff of MARN and related organizations to Mexico for technical training on sampling and water quality analysis.	Dispatch of person(s) of MARN and/or related organization(s)						■											Kageyama	JICA Project Team	None	Input by JICA	

■ Activities under the Project, ▒ Activities under the responsibility of MARN

PO_{01} (Output-3)

Revised on July 4, 2006

Output-3: Compilation and administration of water environment information will be systematized

Activities	Expected Results	Schedule 2006 3	6	9	12	2007 3	6	9	12	2008 3	6	9	12	2009 3	6	9	12	Person in Charge	Implementer	Materials and Equipment	Cost	Remarks
3-1:To collect data on water environmental information.																						
3-1-1: To make an agreement with AMSA for acquiring of water quality monitoring data	Agreements																	Nadia	Working group 3	None	Minimal	
3-1-2: To collect water quality monitoring data from AMSA	Collected Data																	Alejandro	Working group 3	None	Minimal	
3-1-3: To collect digital map data from MAGA	Digital map																	Alejandro	Working group 3	None	Minimal	
3-1-4: To digitize the inventory of industries	Digital data																	Bayron	Working group 3	None	Minimal	
3-1-5: To digitize the technical study results	Digital data																	Bayron	Working group 3	None	Minimal	
3-1-6: To digitize the wastewater monitoring results	Digital data																	Bayron	Working group 3	None	Minimal	
3-2: To develop and manage water environmental information database.																						
3-2-1: To design the database system for water environmental information.	Specification of database system.																	To be named	Working group 3	None	Minimal	
3-2-2: To establish the database system for water environmental information.	Database system																	To be named	Working group 3	Software	Cost required (Input by JICA)	
3-2-3: To implement training on the database system for water environmental information.	Report of training																	To be named	Working group 3	Computers	Minimal	
3-2-4: To operate and update the database system by MARN	Updating of system																	Bayron	Working group 3	None	Minimal	
3-2-5: To evaluate operation and updating of the database system by MARN	Evaluation																	Kurata	Working group 3	None	Minimal	
3-3:To implement training for the staff of MARN and related organization on data administration of water environment																						
3-3-1: To organize a technology transfer seminar with Mexican expert invited as a lecturer.	One-week seminar																	Katayama	JICA Project Team	Text, Seminar Place	Input by JICA	

Activities under the Project, Activities under the responsibility of MARN

PO_{01} (Output-4)

Revised on July 4, 2006

Output-4: Environmental education and dissemination related to the wastewater regulation is implemented by MARN, based on the collaboration with related organizations.

Activities	Expected Results	Schedule																Person in Charge	Implementer	Materials and Equipment	Cost	Remarks
		2006				2007				2008				2009								
		3	6	9	12	3	6	9	12	3	6	9	12	3	6	9	12					
4-1: To conduct environmental education/dissemination related to the wastewater regulation to the municipalities, industries and local residents.																						
4-1-1: To conduct guidance for the technical study to the industries and the municipalities	Guidance			▒	▒													Nadia	MARN	None	Minimal	
4-1-2: To establish a collaboration system among the related organizations	Agreement				■	■												Nadia & Jara	WG 4	None	Minimal	
4-1-3: To prepare an environmental education/dissemination action plan	Action Plan				■													Julia	WG 4	None		
4-1-4: To conduct dissemination of importance of the wastewater regulation to the municipalities, industries and local residents.	Dissemination				■	■	■	■	■	■	▒	▒	▒	▒	▒	▒		Julia & Ana	WG 4	Pamphlet,Advertisement by Mass-media, etc.	Cost required (Input by JICA)	
4-2: To develop environmental education materials, and provide trainer's training for water environmental education for junior high school.																						
4-2-1: To establish collaboration system with related organizations for water environmental formal education.	Agreement					▒	▒	▒										To be named	WG 4	None	Minimal	
4-2-2: To prepare an action plan for trainer's training	Action plan						■											To be named	WG 4	None	Minimal	
4-2-3: To develop materials for water environmental formal education	Materials						■	■	■									To be named	WG 4	Video, Booklet, etc.	Cost required (Input by JICA)	
4-2-4: To provide training to school teachers' trainers	Training									▒	▒	▒						To be named	WG 4	Developed Materials	Minimal	
4-2-5: To monitor training to school teachers by the trainers	Monitoring results												■	■	■	■		To be named	WG 4	None	Minimal	
4-2-6: To evaluate the above process	Evaluation results															■		Ito	WG 4	None	Minimal	
4-3: To implement training for the staff of MARN and related organization on environmental education																						
4-3-1: To organize a technology transfer seminar with Mexican expert invited as a lecturer.	One-week seminar				■													Katayama	JICA Project Team	Text, Seminar Place	Input by JICA	
4-3-2: To dispatch the staff of MARN to Mexico for technical training on environmental education	Dispatch of MARN counterpart(s)						■											Jara	JICA Project Team	None	Input by JICA	

■ : Activities under the Project, ▒ : Activities under the responsibility of MARN

PDM_1 (Revised on January 27, 2007)

Project Title: The Project for Capacity Development for Water Environment Conservation in the Metropolitan Area
Project Period: March 2006 to September 2009 (42 months)
Target Area: Nine (9) Municipalities in the Metropolitan Area of Guatemala(Guatemala, Mixco, Villa Nueva, Villa Canales, Chinautla, San Miguel Petapa, San Pedro Ayampuc, Santa Catarina Pinula and Amatitlan
Target Group: Staff of the Ministry of Environment and Natural resources

Narrative summary	Objectively verifiable indicators	Means of verification	Important assumptions
<Overall Goal> • Public policy and regulation on water environment conservation in the metropolitan area is effective.	• 50 % of the 9 municipalities and selected industries accomplish the first stage reduction schedule of the wastewater regulation (for the municipalities in 2015 and for industries in 2011).	• Monitoring results by MARN	• Water environment-oriented policy of the Guatemalan government does not change.
<Project Purpose> • MARN's implementation capacity of the wastewater regulation for water environment conservation in the metropolitan area is reinforced.	• The results of the Capacity Assessment regarding the wastewater regulation are improved from 1.08 points in November 2006 to 3.5 points in September 2009. • Perception of MARN is improved from 39% in November 2006 to 60% in September 2009. • The staff number of the Unit of Watershed and Water Resources of MARN is increased from 8 (7 permanent and 1 temporal) in July 2006 to 16 (8 permanent and 8 temporal) in September 2009.	• Results of Capacity Assessment • Questionnaire survey • Annual Report of MARN	• Budget of MARN does not decrease drastically. • Mandates of MARN regarding water environment conservation are not changed.
<Output> **Output 0:** PDM_1 and PO_1 to be implemented in Stage2 are elaborated.	• PDM_1 and PO_1 are elaborated.	• PDM_1 and PO_1	• Participation of counterpart personnel is ensured. • Transfer of counterparts is less. • The progress of the technical studies by industrial and agro-industrial wastewater generators is conducted on schedule. • Budget for water quality analysis by MARN is ensured. • Necessary information is provided in time.
Output 1: Strategy formulation capacity for effective enforcement of the wastewater regulation is reinforced.	• By December 2007 strategies for effective enforcement of the wastewater regulation (financial frameworks for municipalities, collaboration mechanism with municipalities, incentives for industries, procedures of setup of environmental standards for water bodies) are proposed. • The proposed four strategies are approved by the Minister of MARN. • The proposed strategies are revised based on comments from the municipalities and the industrial chamber, etc.. • A collaboration system is established between MARN and municipalities for the implementation of the wastewater regulation.	• Proposed four strategies • Approval by the Minister • Comments from the municipalities and the industrial chamber, etc. • Revised four strategies • Agreement for collaboration	
Output 2: Activities for the implementation of the wastewater regulation are commenced.	• By November 2006 rational way of water quality analysis is studied. • By September 2009 manuals for wastewater monitoring and legal process for wastewater control are furnished. • By May 2007 an inventory of industrial and agro-industrial effluents is prepared. • By August 2009 sampling and quality analysis of wastewater is conducted for 400 industrial and agro-industrial wastewater generators (200 under the pilot project and the rest 200 by MARN).	• Manuals or guidelines • Inventory • Map of sampling sites • Results of water quality analysis	
Output 3: Sustainable system of compilation and administration for water environmental information is established.	• Digital map data are collected from MAGA by September 2006. • Water quality monitoring data are continuously collected from AMSA. • By September 2008 database system of water environmental information is established. • By September 2008 training for management of the database system is provided to more than 30 staff of MARN. • Between September 2008 and August 2009 updating of the database is made appropriately by the staff of MARN.	• Agreement with AMSA • Database system • Training records	

Narrative summary	Objectively verifiable indicators	Means of verification	Important assumptions
Output 4: Environmental education and dissemination related to the wastewater regulation is implemented by MARN, based on the collaboration with the municipalities, AMSA, MINEDUC, etc..	• Perception and knowledge on the wastewater regulation among the municipalities, industries and local residents is improved from average 15 % in November 2006 to average 50 % in September 2009. • Materials for dissemination of the wastewater regulation are developed by March 2007. • Materials of formal education are developed by December 2007. • Trainer's training is provided to 30 staff of the Ministry of Education by September 2008. • Monitoring of the teachers' training is conducted between October 2008 and August 2009.	• Questionnaire survey • Materials for dissemination • Materials of formal education • Training records • Monitoring report	
<Activities> 0-1 : To review MARN's present condition regarding water environment conservation (legislation, strategies, activities, etc.). 0-2 : To examine feasibility of Activities 1-1 to1-3, 2-1 to 2-3, 3-1 to 3-5, 4-1 to 4-3. 0-3 : To review and finalize PDM and PO for Stage 2 based on the 0-2 activity. 1-1 : To propose policies and strategies for effective enforcement of the wastewater regulation. 1-2: To revise the proposed strategies based on comments from related organizations. 1-3: To implement training for the staff of MARN, the municipalities, AMSA, INFOM, MSPAS, etc. on water environment conservation policies and strategies. 2-1 : To prepare guideline for the implementation of wastewater control. 2-2 : To implement training for the staff of MARN, the municipalities, AMSA, INFOM, MSPAS etc. on wastewater control. 3-1 : To collect data on water environment information. 3-2 : To develop and manage water environmental information database. 3-3 : To implement training for the staff of MARN, the municipalities, AMSA, INFOM, MSPAS, etc. on data administration of water environment. 4-1 : To conduct environmental education/dissemination related to the wastewater regulation to the municipalities, industries and local residents. 4-2 : To develop environmental education materials, and provide trainer's training for water environmental education 4-3 : To implement training for the staff of MARN, the municipalities, AMSA, INFOM, MSPAS, etc. on environmental education.	**<Input>** **Japanese side** 1. Experts : Stage 1: Policy and Strategy Water Quality Management, PCM, Organization and Institution, Water Quality Analysis and Laboratory, Pollution Sources (6 persons). Stage2: Policy and Strategy, Wastewater Control, Environmental Education, Water Quality Information, Organization and Institution (5 persons). 2. Training Programs 3. Expenses (4) Pilot projects (5) Database system preparation (6) Others **Guatemala side** - For Stage 1 and Stage 2 9. Counterpart personnel • Chairman of Joint Coordinating Committee and Project Director (1 person) • Deputy Project Director (1 Person) • Project Manager (1 Person) • Working Group Members 10. Facilities for Japanese side The Gatemalan side provides office space under the secure conditions. The facilities will be equipped with desks, meeting tables, communication equipment, etc. 11. Equipment and materials The Gatemalan side provides other necessary equipment and materials necessary for project implementation. 12. Budget for project operation The Gatemalan side provides salary and allowance for the staff of the Guatemalan side, including budget for travel expenses and operation expenses required under the project.		**<Preconditions>** • Staff of MARN and other associated functions are assigned to the Project by an official instruction.

PO_1 (Output-1)

Revised on January 23, 2007

Output-1: Strategy formulation capacity for effective enforcement of the wastewater regulation will be reinforced.

Activities	Expected Results	Schedule																Person in Charge	Implementer	Materials and Equipment	Cost	Remarks
		2006				2007				2008				2009								
		3	6	9	12	3	6	9	12	3	6	9	12	3	6	9	12					
1-1:To propose policies and strategies for effective enforcement of the wastewater regulation.																						
1-1-1: To propose financial frameworks for municipalities to construct and maintain treatment plants.	Proposed financial mechanism				■	■	■	■										To be named	Working group 1	None	Cost for interview survey (Input by JICA)	
1-1-2: To propose a collaboration mechanism with municipalities for monitoring of wastewater	Proposed collaboration mechanism				■	■	■	■	■									To be named	Working group 1	None	Minimal	
1-1-3: To propose incentives for industries to comply with the wastewater regulation.	Proposed Incentive measures						■	■	■									To be named	Working group 1	None	Minimal	
1-1-4: To propose procedures for setup of water quality standards for public water bodies (classification of water bodies).	Proposed Procedures						■	■	■									To be named	Working group 1	None	Minimal	
1-1-5: To obtain an official approval from the Minister of MARN	Approval								■									Nadia	Working group 1	None	Minimal	
1-2: To revise the proposed strategies based on comments from the municipalities and the industrial chamber, etc.																						
1-2-1: To collect comments from **the municipalities and the industrial chamber, etc.**	Collected comments									▩	▩	▩						To be named	Working group 1	None	Cost for seminars, materials (JICA Input)	
1-2-2: To revise the strategies based on the collected comments	Revised strategies												■	■	■			To be named	Working group 1	None	Minimal	
1-2-3: To establish a collaboration mechanism between MARN and municipalities revise the strategies based on the collected comments	Agreement												■	■	■			To be named	Working group 1	None	Minimal	
1-3:To implement training for the staff of MARN, the municipalities, AMSA, INFOM, MSPAS, etc. on water environment conservation policies and strategies.																						
1-3-1: To organize a technology transfer seminar with Mexican expert invited as a lecturer.	3-day seminar					■												Katayama	JICA Project Team	Text, Seminar Place	Input by JICA	

■ Activities under the Project, ▩ Activities under the responsibility of MARN

PO_1 (Output-2)

Revised on January 23, 2007

Output-2: Activities for the implementation of the wastewater regulation is commenced.

Activities	Expected Results	Schedule																Person in Charge	Implementer	Materials and Equipment	Cost	Remarks
		2006				2007				2008				2009								
		3	6	9	12	3	6	9	12	3	6	9	12	3	6	9	12					
2-1: To prepare guideline for the implementation of wastewater control.																						
2-1-1: To determine plan and program for the implementation of wastewater control	Implementation plan for wastewater control																	Nadia	Working group 2	None	Minimal	
2-1-2: To conduct an inventory survey for industrial factories in the study area.	Inventory of industrial factories																	Flor	Working group 2	None	Minimal	
2-1-3: To provide and modify legal guidance for the implementation of wastewater regulation and	Legal guidance																	Serrano	Working group 2	None	Minimal	
2-1-4: To study rational way for water quality analysis	Study results																	Flor	Working group 2	None	Minimal	
2-1-5: To collect information necessary for manual or guideline preparation.	Collected information																	Nadia	Working group 2	None	Cost for traveling (Input by JICA)	
2-1-6: To prepare a draft manual (1st.edition) of the wastewater control.	Draft Manual																	Flor & Eric	Working group 2	None	Minimal	
2-1-7: To prepare 2nd. and 3rd.editions of the manual for the wastewater control.	Manual for wastewater control.																	Flor & Eric	Working group 2	None	Minimal	
2-1-8: To establish cooperation system with the competent agencies for water quality analysis	Agreement.																	Nadia	Working group 2	None	Minimal	
2-1-9: To implement monitoring and legal process as pilot project	Report of pilot project for wastewater control																	Eric	Working group 2	Sampling Equipment	Input by JICA	
2-1-10: To continue monitoring work for wastewater control																		Eric	Working group 2	Sampling Equipment	Input by MARN	
2-1-11: To evaluate monitoring work	Monitoring report																	Kageyama	Working group 2	None	Minimal	
2-1-12: To publish summary report of the wastewater monitoring results.	Summary report																	Flor	Working group 2	None	Minimal	
2-2: To implement training for the staff of MARN, the municipalities, AMSA, INFOM, MSPAS etc. on wastewater control																						
2-2-1: To organize a technology transfer seminar with Mexican expert invited as a lecturer.	3-day seminar																	Katayama	JICA Project Team	Text, Seminar Place	Input by JICA	

Activities	Expected Results	Schedule																Person in Charge	Implementer	Materials and Equipment	Cost	Remarks
		2006				2007				2008				2009								
		3	6	9	12	3	6	9	12	3	6	9	12	3	6	9	12					
2-2-2: To prepare guidance for the evaluation of the technical study				▒	▒													Nadia &Flor	Working group 2	None	Minimal	
2-2-3: To organize workshop for the evaluation of the technical study (30 trainees)	5-day seminar					■												Nadia & Flor	Working group 2	Materials, Seminar place	Cost for Seminar (Input by JICA)	
2-2-4: To provide training for the evaluation of technical study (5 trainees)	5-day training					▒												Flor	Working group 2	None	Minimal	
2-2-5: To dispatch the staff of MARN and related organizations to Mexico for technical training on sampling and water quality analysis.	Dispatch of person(s) of MARN and/or related organization(s)						■											Kageyama	JICA Project Team	None	Input by JICA	

■ Activities under the Project, ▒ Activities under the responsibility of MARN

PO_1 (Output-3)

Revised on January 23, 2007

Output-3: Compilation and administration of water environment information will be systematized

Activities	Expected Results	Schedule																Person in Charge	Implementer	Materials and Equipment	Cost	Remarks
		2006				2007				2008				2009								
		3	6	9	12	3	6	9	12	3	6	9	12	3	6	9	12					
3-1:To collect data on water environmental information.																						
3-1-1: To make an agreement with AMSA for acquiring of water quality monitoring data	Agreements																	Nadia	Working group 3	None	Minimal	
3-1-2: To collect water quality monitoring data from AMSA	Collected Data																	Alejandro	Working group 3	None	Minimal	
3-1-3: To collect digital map data from MAGA	Digital map																	Alejandro	Working group 3	None	Minimal	
3-1-4: To digitize the inventory of industries	Digital data																	Bayron	Working group 3	None	Minimal	
3-1-5: To digitize the technical study results	Digital data																	Bayron	Working group 3	None	Minimal	
3-1-6: To digitize the wastewater monitoring results	Digital data																	Bayron	Working group 3	None	Minimal	
3-2: To develop and manage water environmental information database.																						
3-2-1: To design the database system for water environmental information.	Specification of database system.																	Bayron	Working group 3	None	Minimal	
3-2-2: To establish the database system for water environmental information.	Database system																	Bayron	Working 3	Software	Cost required (Input by JICA)	
3-2-3: To implement training on the database system for water environmental information.	Report of training																	Bayron	Working group 3	Computers	Minimal	
3-2-4: To operate and update the database system by MARN	Updating of system																	Bayron	Working group 3	None	Minimal	
3-2-5: To evaluate operation and updating of the database system by MARN	Evaluation																	Katayama	Working group 3	None	Minimal	
3-3:To implement training for the staff of MARN, the municipalities, AMSA, INFOM, MSPAS etc. on data administration of water environment																						
3-3-1: To organize a technology transfer seminar with Mexican expert invited as a lecturer.	3-day seminar																	Katayama	JICA Project Team	Text, Seminar Place	Input by JICA	

Activities under the Project, Activities under the responsibility of MARN

PO_1 (Output-4)

Revised on January 23, 2007

Output-4: Environmental education and dissemination related to the wastewater regulation is implemented by MARN, based on the collaboration with related organizations.

Activities	Expected Results	Schedule																Person in Charge	Implementer	Materials and Equipment	Cost	Remarks
		2006				2007				2008				2009								
		3	6	9	12	3	6	9	12	3	6	9	12	3	6	9	12					
4-1: To conduct environmental education/dissemination related to the wastewater regulation to the municipalities, industries and local residents.																						
4-1-1: To conduct Technical Workshops of the Wastewater Regulation (W.R.) to the industries and the municipalities	Industries and municipalities with technical knowledge of the W.R																	Nadia	MARN	None	Minimal	
4-1-2: To present this Project among the related organizations in order to promote their collaboration for the dissemination of the W.R	Involvement of related agencies in the dissemination process																	Nadia & Jara	WG 4	None	Minimal	
4-1-3: To prepare an environmental education/dissemination action plan	Action Plan (Preparation of dissemination materials, etc.)																	Julia	WG 4	None		
4-1-4: To conduct dissemination of importance of the wastewater regulation to the municipalities, industries and local residents.	Dissemination activities (Dissemination Workshops, etc.)																	Julia & Ana, Nadia	WG 4	Dissemination materials, Promotion video/radio/ newspaper	Cost required (Input by JICA)	
4-2: To develop environmental education materials, and provide trainer's training for water environmental education for junior high school.																						
4-2-1: To establish collaboration system with related organizations for water environmental formal education.	Agreement																	To be named	WG 4	None	Minimal	
4-2-2: To prepare an action plan for trainer's training	Action plan																	To be named	WG 4	None	Minimal	
4-2-3: To develop materials for water environmental formal education	Materials																	To be named	WG 4	Video, Booklet, etc.	Cost required (Input by JICA)	
4-2-4: To provide training to school teachers' trainers	Training																	To be named	WG 4	Developed Materials	Minimal	
4-2-5: To monitor training to school teachers by the trainers	Monitoring results																	To be named	WG 4	None	Minimal	
4-2-6: To evaluate the above process	Evaluation																	Ito	WG 4	None	Minimal	

Activities	Expected Results	Schedule																Person in Charge	Implementer	Materials and Equipment	Cost	Remarks
		2006				2007				2008				2009								
		3	6	9	12	3	6	9	12	3	6	9	12	3	6	9	12					
	results																					
4-3: To implement training for the staff of MARN, the municipalities, AMSA, INFOM, MSPAS etc. on environmental education																						
4-3-1: To organize a technology transfer seminar with Mexican expert invited as a lecturer.	One-week seminar					▌												Katayama	JICA Project Team	Text, Seminar Place	Input by JICA	
4-3-2: To dispatch the staff of MARN to Mexico for technical training on environmental education	Dispatch of MARN counterpart(s)						■											Jara	JICA Project Team	None	Input by JICA	

: Activities under the Project, : Activities under the responsibility of MARN

PDM_2

Título del Proyecto: Proyecto para el Desarrollo de Capacidades para la Conservación del Medio Ambiente Acuático en el Área Metropolitana de uatemala

Término del Proyecto: Marzo 2006 a Septiembre 2009 (42 meses)

Área del Proyecto: 9 municipios del área metropolitana (Guatemala, Mixco, Villa Nueva, Santa Catarina Pinula, Amatitlán, Villa Canales, San Miguel Petapa, Chinautla y San Pedro Ayampuc)

Fecha de revisión: 5 de Marzo de 2008

Grupo Meta: Personal del Ministerio de Ambiente y Recursos Naturales（MARN) y Laboratorio Nacional de Salud (LBNS) del MSPAS

Sumario	Indicadores	Método de Verificación	Supuestos Importantes
Objetivo General			
Se fortalece la Política de Conservación de los Recursos Hídricos en el Área Metropolitana.	50% de las industrias seleccionadas y 5 municipalidades del Proyecto cumplen el cronograma de la primera etapa de reducción del Reglamento de Aguas Residuales.	Resultados de la evaluación de monitoreo por el MARN.	
Propósito del Proyecto			
Se fortalece la capacidad de implementación del MARN referente al Reglamento de Aguas Residuales para la conservación de los Recursos Hídricos en el área metropolitana.	1 Los resultados de la evaluación de la capacidad del MARN acerca del Reglamento mejoran de 1.08 puntos en noviembre de 2006 a 3.5 puntos en septiembre de 2009. 2 Se mejora la evaluación del MARN: (A) La evaluación por parte de las organizaciones involucradas en el Reglamento de Aguas Residuales sobre el MARN mejora a septiembre de 2009 paratiendo de una línea base establecida entre mayo y junio de 2008. (B) El conocimiento de los residentes acerca del MARN por la encuesta telefónica alcanza al 50 % en septiembre de 2009. 3 Se incrementa el personal de la Unidad de Recursos Hídricos del MARN 8 en julio de 2006 a 16 para septiembre de 2009. 4 Se establecen 2 acuerdos de cooperación a partir del año 2008 entre el MARN, municipalidades y otros actores	Resultados de la evaluación de la capacidad. Encuesta telefónica y cuestionarios. Informe Anual del MARN. Actas de reuniones, seminarios y foros.	Las políticas de desarrollo socioeconómico del Gobierno de Guatemala enfocadas a la conservación del agua no cambian. El Reglamento de Aguas Residuales puede aplicar sanciones/multas.
Resultados			
0 （Preparación del Proyecto） Se establece un sistema de ejecución del Proyecto.	0-1 La PDM como el PO han sido revisados. 0-2 El mecanismo de trabajo con grupos técnicos (TWG) es establecido.	PDM1, PO1 Listado de miembros de TWG.	Se asegura el presupuesto del MARN para la implementación del Reglamento de Aguas Residuales. La política del MARN respecto al Reglamento de Aguas Residuales no sufre cambios. Las industrias y municipalidades muestran entendimiento sobre el Reglamento de Aguas Residuales.
1 （Capacidad de Formulación Política） Se fortalece la capacidad de la formulación de estrategias para lograr una efectiva aplicación del Reglamento de Aguas Residuales.	1-1 En Diciembre de 2007 son propuestas estrategias para la efectiva aplicación del Reglamento de Aguas Residuales (marco financiero, mecanismos de colaboración con las municipalidades, incentivos para las industrias y procedimiento para elaborar estándares ambientales). 1-2 Las cuatro estrategias propuestas como borrador son aprobadas por el Ministro de Ambiente y Recursos Naturales 1-3 Consulta de estrategias con organizaciones relacionadas con el Proyecto 1-4 Al menos una estrategia es oficializada 1-5 Para septiembre de 2009 por lo menos 2 C/P pueden implementar el proceso (en el cual se incluyen estudio, análisis, planificación, coordinación) de elaboración de estrategias relacionadas con el Reglamento de aguas residuales	4 estrategias propuestas. Aprobación del Ministro. Taller con minutas Aprobación del Ministro. Evaluación por experto JICA	
2 (Reglamento de Aguas Residuales) Se establece el sistema de monitoreo, evalución y seguimiento para la implementación del Reglamento de Aguas Residuales.	2-1 Para noviembre de 2006es estudiada la forma racional para conducir el análisis de calidad del agua 2-2 Para septiembre de 2009 el manual de monitoreo de aguas residuales está utilizado. 2-3 Para Septiembre de 2009 la guía para el proceso legal está preparada 2-4 Para Mayo de 2007 un inventario de efluentes de fábricas y agroindustrias está preparado 2-5 Para Agosto de 2009 muestreos y análisis de aguas residuales en 400 industrias y agroindustrias son conducidos (200 bajo el proyecto piloto y los restantes 200 bajo la responsabilidad del MARN) 2-6 Para Septiembre de 2009 por lo menos 3 C/P pueden implementar el proceso técnico de aplicación del Reglamento de Aguas Residuales	Informe de Progreso (1) Registro del MARN Guía Inventario Mapas de los sitios de toma de muestras y resultado del análisis de calidad del agua Evaluación por experto JICA	
3 (Establecimiento del Sistema de Información del Ambiente Acuático) Se establece un sistema sostenible para la implementación y administración de información del ambiente acuático.	3-1 Se adquiere del MAGA el mapa digital 3-2 Se recopila de AMSA datos de monitoreo de calidad del agua contínuamente 3-3 Para septiembre de 2009 se establece el sisetma de información de base de datos del ambiente acuático. 3-4 Para Septiembre de 2009 se han dado por lo menos 100 ingresos de información por parte de personal del MARN 3-5 Para Septiembre de 2009 por lo menos 3 personas del MARN están activando la base de datos	Mapa Digital Sistema de Base de datos del ambiente acuático Estato de funcionamiento de base de datos Número de accesos Evaluación por experto JICA	

Sumario	Indicadores	Método de Verificación	Supuestos Importantes
4 **(Educación y Diseminación Ambiental)** **Se fortalece la educación y diseminación ambiental de aspectos relacionados al Reglamento de Aguas Residuales en colaboración con las municipalidades, AMSA, MINEDUC, otras organizaciones Gubernamentales y ONGs.**	4-1 La percepción y conocimiento del Reglamento de aguas residuales enre las municipalidades, industria y residentes locales mejora en un promedio de 15% en noviembre de 2006 a un promedio de 30% a septiembre de 2007 4-2 Materiales para la diseminación del Reglamento de Aguas Residuales se desarrollan para Marzo de 2007 4-3 Materiales de educación del ambiente acuático para escuelas del ciclo básico se desarrollan para Diciembre de 2007 4-4 Para septiembre de 2008 el personal CP logran capacidad de realizar entrenamientos a capacitadores para 30 docentes de la escuela de ciclo básico. 4-5 Más de 10 profesores entrenados capacitan por lo menos 10 cada uno	Encuestas Materiales para la diseminación. Materiales de educación formal. Registro de Capacitación Informe de monitoreo.	

Actividades			
	Parte Japonesa	**Parte Guatemalteca**	
Refiérase al Plan de Operación (PO) para más detalles.	1 Expertos Fase 1: Políticas y Estrategias, Manejo de la Calidad del Agua, PCM, Organización e Institución, Análisis de Agua, Análisis de laboratorio y Fuentes de Contaminación. Fase 2: Políticas y Estrategias, Control de Aguas Residuales, Monitoreo de Calidad de Agua, Educación Ambiental, Organización e Institución e Información del Ambiente Acuático. 2 Programa de Capacitación 3 Gastos Proyecto piloto. Preparación del Sistema de base de datos para el ambiente acuático. Otros.	1 Personal C/P Presidente CJJ/Director del Proyecto (1) Vice director del Proyecto (1) Gerente del Proyecto (1) Miembros del Proyecto CP: MARN (14) LBNS (2) 2 Instalaciones (parte japonesa) La parte guatemalteca proveerá de espacio de oficina segura, sillas, mesas de conferencia y equipos de telecomunicación. 3 Instalaciones (parte guatemalteca) La parte guatemalteca proveerá aquellos materiales y equipos que sean necesarios para la implementación del Proyecto. 4 Presupuesto para la operación del Proyecto La parte Guatemalteca pagará los salarios y gastos de su personal, así como viáticos para gastos de viaje y gastos de operación requeridos bajo el proyecto.	La participación del personal de la Contraparte está asegurada La rotación del Personal C/P no causa efectos negativos al Proyecto. Las industrias colaboran con el estudio técnico del MARN. Se proporciona información necesaria (sin demoras). Se asegura el presupuesto de monitoreo del MARN (evaluación de estudio técnico, muestreo y análisis de agua). **Pre condición** El personal del MARN y otras funciones asociadas deben ser asignadas al Proyecto por medio de instrucción oficial.

PO_2 (Resultado-1)

Revised on March 5, 2008

Rsultado1: Se fortalece la capacidad de formulación de estrategias para lograr una efectiva aplicación del Reglamento de Aguas Residuales.

Actividad	Resultados Esperados	Cronograma 2006 3	6	9	12	2007 3	6	9	12	2008 3	6	9	12	2009 3	6	9	12	Persona a cargo	A cargo de implementación	Equipos Materiales	Costo	Nota
1-1: Proponer políticas y estrategias para una efectiva implementación del Reglamento de Aguas Residuales.																						
1-1-1: Proponer las medidas para mejorar la situación financiera de las municipalidades para la construcción y mantenimiento de plantas de tratamiento.	Propuesta de mejora financiera																	Katayama	TWG1	No	Encuesta（Aporte JICA）	
1-1-2: Proponer la mecanismos de colaboración con las municipalidades para el monitoreo de las aguas residuales, y el plan de acción.	Documento Mecanismo de colaboración Propuesta de plan de acción																	Jara	TWG1	No	Mínimo	
1-1-3: Proponer incentivos a las industrias para el cumplimiento anticipado del Reglamento de Aguas Residuales.	Propuesta de incentivos																	Katayama	TWG1	No	Mínimo	
1-1-4: Proponer los procedimientos para establecer estándares de calidad ambiental del agua.	Procedimiento																	Katayama	TWG1	No	Mínimo	
1-1-5: Obtener la aprobación del borrador de las estrategias del Ministro de Ambiente y Recursos Naturales.	Aprobación																	Nadia	TWG1	No	Mínimo	
1-1-6: Consultar las estrategias.	03 Talleres (Incentivos, Estándares, Municipalidades)																	Henry	TWG1	No	Aporte JICA	
1-2: Estudiar los temas relacionados con el Reglamento de Aguas Residuales en el Consejo dirigido por el MARN.	Estudio de tema																	Nadia	MARN	No	Mínimo	
1-3: Capacitar al personal del MARN, Municipalidades, AMSA, INFOM, MSPAS y otras organizaciones relacionadas sobre políticas y estrategias de conservación del ambiente acuático																						
1-3-1: Organizar un seminario de transferencia de tecnología con expertos mexicanos invitados como expositores.	Seminario de 3 días																	Katayama	Equipo JICA	Textos Sala de Seminario	Aporte JICA	
1-3-2: Diseñar la estrategia de participación social para diseminar la educación ambiental del agua a través de líderes locales.	Estrategia de participación social																	Julia	TWG1＋TWG4	No	Aporte JICA（Contrato con ONG para estudio de línea base）	
1-4: Reunión mensual de los representantes de cada grupo de trabajo para intercambiar opiniones y verificar el progreso de las actividades.	Compartir información																	Nadia	4 TWGs	No	Mínimo	

Actividades del Proyecto JICA　　Actividades bajo la responsabilidad del MARN

PO_2 (Resultado-2)

Revised on March 5, 2008

RESULTADO 2: Se establece el sistema de monitoreo, evaluación y seguimiento para la implementación del Reglamento de Aguas Residuales.

Actividades	Resultados Esperados	Cronograma 2006 3	6	9	12	2007 3	6	9	12	2008 3	6	9	12	2009 3	6	9	12	Persona a Cargo	A cargo de implementación	Equipos Materiales	Costo	Nota
2-1: Preparar la guía para la implementación del control de aguas residuales.																						
2-1-1: Determinar planes y programas para la aplicación del control de aguas residuales.	Plan de implementación del Reglamento				■													Nadia	TWG2	No	Mínimo	
2-1-2: Realizar el inventario de industrias en el área de estudio	Inventario industrial				■	■	■											Flor	TWG2	No	Mínimo	
2-1-3: Preparar y revisar la guía legal para la implementación del Reglamento de Aguas Residuales.	Guía legal				▒			▒			▒							Serrano	TWG2	No	Mínimo	
2-1-4: Recopilar la información necesaria para la preparación del manual de control de aguas residuales.	Datos Información				■													Nadia	TWG2	No	Aporte JICA (Gasto viaje exterior)	
2-1-5: Preparar un borrador del manual de control de aguas residuales. (1ª. Edición).	Borrador de Manual				■	■	■											Flor & Eric	TWG2	No	Mínimo	
2-1-6: Preparar la 2ª. Y 3ª. Edición del manual para control de aguas residuales.	Manual aguas residuales 105-2008 Manual aguas residuales XX-20XX							■	■							■		Carlos &Eric	TWG2	No	Mínimo	
2-2: Establecer sistema del monitoreo e interpretación.																						
2-2-1: Hacer un estudio para selección del laboratorio.	Selección de Laboratorio				■													Flor	TWG2	No	Mínimo	
2-2-2: Establecer sistemas de cooperación con agencias competentes para análisis de calidad del agua.	Acuerdo					■	■											Nadia	TWG2	No	Mínimo	
2-2-3: Evaluar el estudio técnico	Informe de evaluación de estudio técnico							▒	▒	▒	▒	▒	▒	▒	▒	▒		Nadia	TWG2	No	MARN (Consultor local)	
2-2-4: Llevar a cabo monitoreos de aguas residuales como proyecto piloto.	Informe del proyecto piloto							■	■	■								Eric Maria	TWG2 LBNS	Equipo Muestreo E. Análisis de agua	JICA (Vehículo, Análisis de agua)	
2-2-5: Digitalizar los resultados del estudio técnico.	Datos digitalizados									▒	▒	▒	▒	▒	▒	▒		Carlos	TWG2	No	Mínimo	
2-2-6: Digitalizar los datos de monitoreo de aguas residuales.	Datos digitalizados							▒	▒	▒	▒	▒	▒	▒	▒	▒		Eric	TWG2	No	Mínimo	

Actividades	Resultados Esperados	Cronograma																Persona a Cargo	A cargo de implementación	Equipos Materiales	Costo	Nota
		2006				2007				2008				2009								
		3	6	9	12	3	6	9	12	3	6	9	12	3	6	9	12					
2-2-7: Continuar el monitoreo de aguas residuales.	Resultado de monitoreo										▒	▒	▒	▒	▒	▒		Eric Maria	TWG2 LBNS	Equipo Muestreo E. Análisis de agua	MARN (Análisis de agua)	
2-2-8: Interpretar los resultado de monitoreo de aguas residuales.	Resultado de interpretación										▒	▒	▒	▒	▒	▒		A ser nombrada	TWG2	No	Mínimo	
2-2-9: Notificar a las industrias el resultado de interpretación.	Notificación										▒	▒	▒	▒	▒	▒		A ser nombrada	TWG2	No	Mínimo	
2-2-10: Evaluar el sistema de monitoreo e interpretación.	Informe de evaluación															■		Kageyama	TWG2	No	Mínimo	
2-2-11: Publicar un informe de los resultados del monitoreo para control de aguas residuales.	Informe															■		Nadia Kageyama	TWG2	No	JICA (Costo de Informe)	
2-3: Capacitar al personal del MARN, Municipalidades, AMSA, INFOM, MSPAS y otras organizaciones relacionadas sobre control de aguas residuales.																						
2-3-1: Organizar un seminario de transferencia de tecnología con invitados mexicanos como disertantes.	Seminario de 3 días					■												Katayama	Equipo JICA	Textos y Sala de Seminario	Aporte JICA	
2-3-2: Preparar guía para evaluación del estudio técnico.				▒	▒													Nadia &Flor	TWG2	No	Mínimo	
2-3-3: Organizar taller para la evaluación del estudio técnico (30 participantes).	Seminario de 5 días					■												Nadia & Flor	TWG2	Datos y Sala de seminario	Aporte JICA (Seminario)	
2-3-4: Proveer de entrenamiento para la evaluación del estudio técnico (a 5 consultores selectos).	Seminario de 5 días					▒												Flor	TWG2	No	Mínimo	
2-3-5: Envío del personal del MARN o instituciones relacionadas a México para entrenamiento técnico sobre muestreo y análisis de calidad de agua.	Envío de personal MARN o instituciones relacionadas						■											Kageyama	Equipo JICA	No	Aporte JICA	
2-4: Reunión mensual de los representantes de cada grupo de trabajo para intercambiar opiniones y verificar el progreso de las actividades.	Compartir información										▒	▒	▒	▒	▒	▒		Nadia	4 TWGs	No	Mínimo	

■ : Actividades del Proyecto JICA ▒ : Actividades bajo la responsabilidad del MARN

PO_2 (Resultado-3)

Revised on March 5, 2008

Resultado 3 : Se establece un sistema sostenible para la implementación y administración de información relativa al ambiente acuático.

Actividades	Resultados Esperados	Cronograma 2006 3	6	9	12	2007 3	6	9	12	2008 3	6	9	12	2009 3	6	9	12	Persona a cargo	A cargo de implementación	Equipos Materiales	Costo	Nota
3-1: Recolectar información sobre el ambiente acuático.																						
3-1-1: Se establece convenio de intercambio de información. AMSA -MARN	Convenio										▒	▒						Nadia	TWG3	No	Mínimo	
3-1-2: Recopilar información de AMSA sobre el monitoreo de calidad del agua.	Datos recolectados			▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	Alexander	TWG3	No	Mínimo	
3-1-3: Adquirir del MAGA mapa digital.	Mapa digital				▒	▒												Bayron	TWG3	No	Mínimo	
3-2: Desarrollar y administrar la base de datos con información del ambiente acuático.																						
3-2-1: Diseñar el sistema de base de datos con información del ambiente acuático.	Especificación de base de datos					■												Bayron	TWG3	No	Mínimo	
3-2-2: Implantar el sistema de base de datos con información del ambiente acuático.	Sistema de base datos						■	■	■	■								Alexander	TWG3	Estación de trabajo	JICA (Estación de trabajo)	
3-2-3: Llevar a cabo capacitación sobre el sistema de base de datos con información del ambiente acuático.	Informe de capacitación									■								Alexander	TWG3	Computadora	Mínimo	
3-2-4: Llegar a un acuerdo entre las organizaciones relacionadas sobre el uso compartido de los datos de información del ambiente acuático.	Acuerdo										▒	▒	▒	▒	▒	▒		Alexander	TWG3	No	Mínimo	
3-2-5: Operar y actualizar la base de datos del Sistema por el MARN.	Actualización sistema									▒	▒	▒	▒	▒	▒	▒		Alexander	TWG3	No	Mínimo	Expansión de capacidad de servidor en estudio
3-2-6: Evaluar la operación y actualización del Sistema por el MARN.	Evaluación															■		Katayama	TWG3	No	Mínimo	
3-3: Capacitar al personal del MARN, Municipalidades, AMSA, INFOM, MSPAS y otras organizaciones sobre el manejo de los datos del ambiente acuático.																						
3-3-1: Organizar un seminario de transferencia de tecnología con expertos mexicanos invitados como disertantes.	Seminario de 3 días					■												Katayama	Equipo JICA	Textos y Sala de Seminario	Aporte JICA	
3-3-2:Organizar la capacitación para los usuarios de base de datos.	Capacitación										▒	▒	▒	▒	▒	▒		Alexander	TWG3	Textos y Sala de Seminario	Aporte JICA	
3-4: Reunión mensual de los representantes de cada grupo de trabajo para intercambiar opiniones y verificar el progreso de las actividades.	Compartir información										▒	▒	▒	▒	▒	▒		Nadia	4 TWGs	No	Mínimo	

■ : Actividades del Proyecto JICA ▒ : Actividades bajo la responsabilidad del MARN

PO_2 (Resultado-4)

Revised on March 5, 2008

Resultado 4 : Se fortalece la educación y diseminación ambiental de aspectos relacionados al Reglamento de Aguas Residuales en colaboración con las Municipalidades, AMSA, MINEDUC y otras organizaciones relacionadas.

Actividad	Resultados Esperados	Cronograma 2006 3	6	9	12	2007 3	6	9	12	2008 3	6	9	12	2009 3	6	9	12	Persona a cargo	A cargo de implementación	Equipos Materiales	Costo	Nota
4-1: Conducir actividades de diseminación y socialización del Reglamento de Aguas Residuales a las municipalidades, industrias y residentes locales																						
4-1-1: Conducir Talleres Técnicos sobre el Reglamento de Aguas Residuales a industrias y municipalidades.	Conocimiento técnico de Reglamento																	Nadia	MARN	No	Mínimo	
4-1-2: Presentar este Proyecto a las organizaciones relacionadas a efecto de promover la colaboración en la diseminación del Reglamento de Aguas Residuales.	Participación proceso de diseminación																	Jara, Ito	TWG 4	No	Mínimo	
4-1-3: Preparar un plan de acción para el componente de diseminación ambiental.	Plan de acción																	Julia, Ito	TWG 4	No		
4-1-4: Organizar la capacitación para que las municipalidades, industrias y residentes locales reconozcan la importancia del Reglamento de Aguas Residuales.	Actividad de diseminación																	Julia & Ana, Ito	TWG 4	Materiales de divulgación, Video, Radio y Prensa	Aporte JICA（Material es y Sala de capacitación）	
4-1-5: Estudiar medidas de incentivos a las municipalidades e industrias para cumplimiento anticipado del Reglamento de Aguas Residuales.	Estudio																	Jara	TWG4+TWG1	No	Mínimo	
4-1-6: Implementar medidas de incentivos a las municipalidades e industrias para cumplimiento anticipado el Reglamento de Aguas Residuales.	Incentivos																	Julia, Ana	TWG 4	Incentivos	Aporte JICA	
4-2: Desarrollar materiales para educación ambiental formal del agua y proveer oportunidades de entrenamiento a capacitadores de escuelas del ciclo básico.																						
4-2-1: Establecer un sistema de colaboración con organizaciones relacionadas a la educación de ambiente acuático en escuelas del ciclo básico.	Acuerdo																	Jara,Nadia	TWG 4	No	Mínimo	
4-2-2: Elaborar un plan de acción para entrenamiento de capacitadores de educación ambiental del agua en escuelas de ciclo básico.	Plan de acción																	Julia, Ito	TWG 4	No	Mínimo	
4-2-3: Desarrollar materiales para la educación del ambiente acuático de escuelas de ciclo básico.	Material de educación																	Julia, Ana, Ito	TWG 4	Video, Materiales (Manual)	Aporte JICA（Elaboración de materiales）	
4-2-4: Proveer entrenamiento a los capacitadores de maestros del ciclo básico.	Resultado de capacitación																	Julia, Ana	TWG 4	Materiales desarrollados	Mínimo	

Actividad	Resultados Esperados	Cronograma																Persona a cargo	A cargo de implementación	Equipos Materiales	Costo	Nota
		2006				2007				2008				2009								
		3	6	9	12	3	6	9	12	3	6	9	12	3	6	9	12					
4-2-5: Monitorear la capacitación de maestros de ciclo básico conducida por los capacitadores.	Resultado de monitoreo												▒	▒	▒	▒		Julia, Ana	TWG 4	No	Mínimo	
4-2-6: Evaluar el anterior proceso.	Resultado de evaluación															■		Katayama	TWG 4	No	Mínimo	
4-3: Capacitar al personal del MARN, Municipalidades, AMSA, INFOM, MSPAS y otras organizaciones sobre educación ambiental.																						
4-3-1: Organizar un seminario de transferencia tecnológica con expertos mexicanos como expositores.	Resultado del seminario de una semana					▌												Katayama	Equipo JICA	Textos y Sala de Seminario	Aporte JICA	
4-3-2: Enviar a personal del MARN a México para entrenamiento técnico en materia de educación ambiental	Envío del C/P del MARN						■											Jara	Equipo JICA	No	Aporte JICA	
4-4: Reunión mensual de los representantes de cada grupo de trabajo para intercambiar opiniones y verificar el progreso de las actividades.	Compartir información										▒	▒	▒	▒	▒	▒		Nadia	4 TWGs	No	Mínimo	

■ : Actividades del Proyecto JICA ▒ : Actividades bajo la responsabilidad del MARN

PDM 3

Término del Proyecto: Marzo 2006 a Diciembre 2009 (45 meses)

Titulo del Proyecto: Proyecto para el Desarrollo de Capacidades para la Conservación del Medio Ambiente Acuático en el Área Metropolitana de uatemala

Área del Proyecto: 9 municipios del área metropolitana (Guatemala, Mixco, Villa Nueva, Santa Catarina Pinula, Amatitlán, Villa Canales, San Miguel Petapa, Chinautla y San Pedro Ayampuc)

Fecha de revisión: 6 de Agosto de 2009

Grupo Meta: Personal del Ministerio de Ambiente y Recursos Naturales（MARN) y Laboratorio Nacional de Salud (LBNS) del MSPAS

Sumario		Indicadores	Método de Verificación	Supuestos Importantes
Objetivo General				
Se fortalece la Política de Conservación de los Recursos Hídricos en el Área Metropolitana.		50% de las industrias seleccionadas y 5 municipalidades del Proyecto cumplen el cronograma de la primera etapa de reducción del Reglamento de Aguas Residuales.	Resultados de la evaluación de monitoreo por el MARN.	
Propósito del Proyecto				
Se fortalece la capacidad de implementación del MARN referente al Reglamento de Aguas Residuales para la conservación de los Recursos Hídricos en el área metropolitana.	1	Los resultados de la evaluación de la capacidad del MARN acerca del Reglamento mejoran de 1.08 puntos en noviembre de 2006 a 3.5 puntos en septiembre de 2009.	Resultados de la evaluación de la capacidad.	Las políticas de desarrollo socioeconómico del Gobierno de Guatemala enfocadas a la conservación del agua no cambian. El Reglamento de Aguas Residuales puede aplicar sanciones/multas.
	2	Se mejora la evaluación del MARN: (A) La evaluación por parte de las organizaciones involucradas en el Reglamento de Aguas Residuales sobre el MARN mejora a septiembre de 2009 paratiendo de una línea base establecida entre mayo y junio de 2008. (B) El conocimiento de los residentes acerca del MARN por la encuesta telefónica alcanza al 50 % en septiembre de 2009.	Encuesta telefónica y cuestionarios.	
	3	Se incrementa el personal de la Unidad de Recursos Hídricos del MARN 8 en julio de 2006 a 16 para septiembre de 2009.	Informe Anual del MARN.	
	4	Se establecen 2 acuerdos de cooperación a partir del año 2008 entre el MARN, municipalidades y otros actores	Actas de reuniones, seminarios y foros.	
Resultados				
0 （Preparación del Proyecto） Se establece un sistema de ejecución del Proyecto.	0-1	La PDM como el PO han sido revisados.	PDM1, PO1	Se asegura el presupuesto del MARN para la implementación del Reglamento de Aguas Residuales. La política del MARN respecto al Reglamento de Aguas Residuales no sufre cambios. Las industrias y municipalidades muestran entendimiento sobre el Reglamento de Aguas Residuales.
	0-2	El mecanismo de trabajo con grupos técnicos (TWG) es establecido.	Listado de miembros de TWG.	
1 （Capacidad de Formulación Política） Se fortalece la capacidad de la formulación de estrategias para lograr una efectiva aplicación del Reglamento de Aguas Residuales.	1-1	En Diciembre de 2007 son propuestas estrategias para la efectiva aplicación del Reglamento de Aguas Residuales (marco financiero, mecanismos de colaboración con las municipalidades, incentivos para las industrias y procedimiento para elaborar estándares ambientales).	4 estrategias propuestas.	
	1-2	Las cuatro estrategias propuestas como borrador son aprobadas por el Ministro de Ambiente y Recursos Naturales	Aprobación del Ministro.	
	1-3	Consulta de estrategias con organizaciones relacionadas con el Proyecto	Taller con minutas	
	1-4	Al menos una estrategia es oficializada	Aprobación del Ministro.	
	1-5	Para septiembre de 2009 por lo menos 2 C/P pueden implementar el proceso (en el cual se incluyen estudio, análisis, planificación, coordinación) de elaboración de estrategias relacionadas con el Reglamento de aguas residuales	Evaluación por experto JICA	
2 (Reglamento de Aguas Residuales) Se establece el sistema de monitoreo, evalución y seguimiento para la implementación del Reglamento de Aguas Residuales.	2-1	Para noviembre de 2006es estudiada la forma racional para conducir el análisis de calidad del agua	Informe de Progreso (1)	
	2-2	Para septiembre de 2009 el manual de monitoreo de aguas residuales está utilizado.	Registro del MARN	
	2-3	Para Septiembre de 2009 la guía para el proceso legal está preparada	Guía	
	2-4	Para Mayo de 2007 un inventario de efluentes de fábricas y agroindustrias está preparado	Inventario	
	2-5	Para Agosto de 2009 muestreos y análisis de aguas residuales en 400 industrias y agroindustrias son conducidos (200 bajo el proyecto piloto y los restantes 200 bajo la responsabilidad del MARN)	Mapas de los sitios de toma de muestras y resultado del análisis de calidad del agua	
	2-6	Para Septiembre de 2009 por lo menos 3 C/P pueden implementar el proceso técnico de aplicación del Reglamento de Aguas Residuales	Evaluación por experto JICA	

3 (Establecimiento del Sistema de Información del Ambiente Acuático) **Se establece un sistema sostenible para la implementación y administración de información del ambiente acuático.**	3-1 Se adquiere del MAGA el mapa digital	Mapa Digital	
	3-2 Se recopila de AMSA datos de monitoreo de calidad del agua contínuamente	Sistema de Base de datos del ambiente acuático	
	3-3 Para septiembre de 2009 se establece el sisetma de información de base de datos del ambiente acuático.	Estato de funcionamiento de base de datos	
	3-4 Para Septiembre de 2009 se han dado por lo menos 100 ingresos de información por parte de personal del MARN	Número de accesos	
	3-5 Para Septiembre de 2009 por lo menos 3 personas del MARN están activando la base de datos	Evaluación por experto JICA	
4 (Educación y Diseminación Ambiental) **Se fortalece la educación y diseminación ambiental de aspectos relacionados al Reglamento de Aguas Residuales en colaboración con las municipalidades, AMSA, MINEDUC, otras organizaciones Gubernamentales y ONGs.**	4-1 La percepción y conocimiento del Reglamento de aguas residuales enre las municipalidades, industria y residentes locales mejora en un promedio de 15% en noviembre de 2006 a un promedio de 30% a septiembre de 2007	Encuestas	
	4-2 Materiales para la diseminación del Reglamento de Aguas Residuales se desarrollan para Marzo de 2007	Materiales para la diseminación.	
	4-3 Materiales de educación del ambiente acuático para escuelas del ciclo básico se desarrollan para Diciembre de 2007	Materiales de educación formal.	
	4-4 Para septiembre de 2008 el personal CP logran capacidad de realizar entrenamientos a capacitadores para 30 docentes de la escuela de ciclo básico.	Registro de Capacitación	
	4-5 Más de 10 profesores entrenados capacitan por lo menos 10 cada uno	Informe de monitoreo.	

Actividades			
	Parte Japonesa	**Parte Guatemalteca**	
Refiérase al Plan de Operación (PO) para más detalles.	1 Expertos Fase 1: Políticas y Estrategias, Manejo de la Calidad del Agua, PCM, Organización e Institución, Aná lisis de Agua, Análisis de laboratorio y Fuentes de Contaminación. Fase 2: Políticas y Estrategias, Control de Aguas Residuales, Monitoreo de Calidad de Agua, Educación Ambiental, Organización e Institución e Información del Ambiente Acuático. 2 Programa de Capacitación 3 Gastos Proyecto piloto. Preparación del Sistema de base de datos para el ambiente acuático. Otros.	1 Personal C/P Presidente CJJ/Director del Proyecto (1) Vice director del Proyecto (1) Gerente del Proyecto (1) Miembros del Proyecto CP: MARN (14) LBNS (2) 2 Instalaciones (parte japonesa) La parte guatemalteca proveerá de espacio de oficina segura, sillas, mesas de conferencia y equipos de telecomunicación. 3 Instalaciones (parte guatemalteca) La parte guatemalteca proveerá aquellos materiales y equipos que sean necesarios para la implementación del Proyecto. 4 Presupuesto para la operación del Proyecto La parte Guatemalteca pagará los salarios y gastos de su personal, así como viáticos para gastos de viaje y gastos de operación requeridos bajo el proyecto.	La participación del personal de la Contraparte está asegurada La rotación del Personal C/P no causa efectos negativos al Proyecto. Las industrias colaboran con el estudio técnico del MARN. Se proporciona información necesaria (sin demoras). Se asegura el presupuesto de monitoreo del MARN (evaluación de estudio técnico, muestreo y análisis de agua). **Pre condición** El personal del MARN y otras funciones asociadas deben ser asignadas al Proyecto por medio de instrucción oficial.

PO_3 (Resultado-1)

Revised on August 6, 2009

Rsultado1: Se fortalece la capacidad de formulación de estrategias para lograr una efectiva aplicación del Reglamento de Aguas Residuales.

Actividad	Resultados Esperados	Cronograma 2006 3	6	9	12	2007 3	6	9	12	2008 3	6	9	12	2009 3	6	11	12	Persona a cargo	A cargo de implementación	Equipos Materiales	Costo	Nota
1-1: Proponer políticas y estrategias para una efectiva implementación del Reglamento de Aguas Residuales.																						
1-1-1: Proponer las medidas para mejorar la situación financiera de las municipalidades para la construcción y mantenimiento de plantas de tratamiento.	Propuesta de mejora financiera																	Katayama	TWG1	No	Encuesta（Aporte JICA）	
1-1-2: Proponer la mecanismos de colaboración con las municipalidades para el monitoreo de las aguas residuales, y el plan de acción.	Documento Mecanismo de colaboración Propuesta de plan de acción																	Jara	TWG1	No	Mínimo	
1-1-3: Proponer incentivos a las industrias para el cumplimiento anticipado del Reglamento de Aguas Residuales.	Propuesta de incentivos																	Katayama	TWG1	No	Mínimo	
1-1-4: Proponer los procedimientos para establecer estándares de calidad ambiental del agua.	Procedimiento																	Katayama	TWG1	No	Mínimo	
1-1-5: Obtener la aprobación del borrador de las estrategias del Ministro de Ambiente y Recursos Naturales.	Aprobación																	Nadia	TWG1	No	Mínimo	
1-1-6: Consultar las estrategias.	03 Talleres (Incentivos, Estándares, Municipalidades)																	Henry	TWG1	No	Aporte JICA	
1-2: Estudiar los temas relacionados con el Reglamento de Aguas Residuales en el Consejo dirigido por el MARN.	Estudio de tema																	Nadia	MARN	No	Mínimo	
1-3: Capacitar al personal del MARN, Municipalidades, AMSA, INFOM, MSPAS y otras organizaciones relacionadas sobre políticas y estrategias de conservación del ambiente acuático																						
1-3-1: Organizar un seminario de transferencia de tecnología con expertos mexicanos invitados como expositores.	Seminario de 3 días																	Katayama	Equipo JICA	Textos Sala de Seminario	Aporte JICA	
1-3-2: Diseñar la estrategia de participación social para diseminar la educación ambiental del agua a través de líderes locales.	Estrategia de participación social																	Julia	TWG1＋TWG4	No	Aporte JICA（Contrato con ONG para estudio de línea base）	
1-4: Reunión mensual de los representantes de cada grupo de trabajo para intercambiar opiniones y verificar el progreso de las actividades.	Compartir información																	Nadia	4 TWGs	No	Mínimo	

Actividades del Proyecto JICA　　Actividades bajo la responsabilidad del MARN

PO_3 (Resultado-2)

Revised on August 6, 2009

RESULTADO 2: Se establece el sistema de monitoreo, evaluación y seguimiento para la implementación del Reglamento de Aguas Residuales.

Actividades	Resultados Esperados	Cronograma																Persona a Cargo	A cargo de implementación	Equipos Materiales	Costo	Nota
		2006				2007				2008				2009								
		3	6	9	12	3	6	9	12	3	6	9	12	3	6	11	12					
2-1: Preparar la guía para la implementación del control de aguas residuales.																						
2-1-1: Determinar planes y programas para la aplicación del control de aguas residuales.	Plan de implementación del Reglamento																	Nadia	TWG2	No	Mínimo	
2-1-2: Realizar el inventario de industrias en el área de estudio	Inventario industrial																	Flor	TWG2	No	Mínimo	
2-1-3: Preparar y revisar la guía legal para la implementación del Reglamento de Aguas Residuales.	Guía legal																	Serrano	TWG2	No	Mínimo	
2-1-4: Recopilar la información necesaria para la preparación del manual de control de aguas residuales.	Datos Información																	Nadia	TWG2	No	Aporte JICA (Gasto viaje exterior)	
2-1-5: Preparar un borrador del manual de control de aguas residuales. (1ª. Edición).	Borrador de Manual																	Flor & Eric	TWG2	No	Mínimo	
2-1-6: Preparar la 2ª. Y 3ª. Edición del manual para control de aguas residuales.	Manual aguas residuales 105-2008 Manual aguas residuales XX-20XX																	Carlos &Eric	TWG2	No	Mínimo	
2-2: Establecer sistema del monitoreo e interpretación.																						
2-2-1: Hacer un estudio para selección del laboratorio.	Selección de Laboratorio																	Flor	TWG2	No	Mínimo	
2-2-2: Establecer sistemas de cooperación con agencias competentes para análisis de calidad del agua.	Acuerdo																	Nadia	TWG2	No	Mínimo	
2-2-3: Evaluar el estudio técnico	Informe de evaluación de estudio técnico																	Nadia	TWG2	No	MARN (Consultor local)	
2-2-4: Llevar a cabo monitoreos de aguas residuales como proyecto piloto.	Informe del proyecto piloto																	Eric Maria	TWG2 LBNS	Equipo Muestreo E. Análisis de agua	JICA (Vehículo, Análisis de agua)	
2-2-5: Digitalizar los resultados del estudio técnico.	Datos digitalizados																	Carlos	TWG2	No	Mínimo	
2-2-6: Digitalizar los datos de monitoreo de aguas residuales.	Datos digitalizados																	Eric	TWG2	No	Mínimo	

Actividades	Resultados Esperados	Cronograma																Persona a Cargo	A cargo de implementación	Equipos Materiales	Costo	Nota
		2006				2007				2008				2009								
		3	6	9	12	3	6	9	12	3	6	9	12	3	6	11	12					
2-2-7: Continuar el monitoreo de aguas residuales.	Resultado de monitoreo										▒	▒	▒	▒	▒	▒		Eric Maria	TWG2 LBNS	Equipo Muestreo E. Análisis de agua	MARN (Análisis de agua)	
2-2-8: Interpretar los resultado de monitoreo de aguas residuales.	Resultado de interpretación										▒	▒	▒	▒	▒	▒		A ser nombrada	TWG2	No	Mínimo	
2-2-9: Notificar a las industrias el resultado de interpretación.	Notificación										▒	▒	▒	▒	▒	▒		A ser nombrada	TWG2	No	Mínimo	
2-2-10: Evaluar el sistema de monitoreo e interpretación.	Informe de evaluación															■		Kageyama	TWG2	No	Mínimo	
2-2-11: Publicar un informe de los resultados del monitoreo para control de aguas residuales.	Informe															■		Nadia Kageyama	TWG2	No	JICA (Costo de Informe)	
2-3: Capacitar al personal del MARN, Municipalidades, AMSA, INFOM, MSPAS y otras organizaciones relacionadas sobre control de aguas residuales.																						
2-3-1: Organizar un seminario de transferencia de tecnología con invitados mexicanos como disertantes.	Seminario de 3 días					■												Katayama	Equipo JICA	Textos y Sala de Seminario	Aporte JICA	
2-3-2: Preparar guía para evaluación del estudio técnico.				▒	▒													Nadia &Flor	TWG2	No	Mínimo	
2-3-3: Organizar taller para la evaluación del estudio técnico (30 participantes).	Seminario de 5 días					■												Nadia & Flor	TWG2	Datos y Sala de seminario	Aporte JICA (Seminario)	
2-3-4: Proveer de entrenamiento para la evaluación del estudio técnico (a 5 consultores selectos).	Seminario de 5 días					▒												Flor	TWG2	No	Mínimo	
2-3-5: Envío del personal del MARN o instituciones relacionadas a México para entrenamiento técnico sobre muestreo y análisis de calidad de agua.	Envío de personal MARN o instituciones relacionadas						■											Kageyama	Equipo JICA	No	Aporte JICA	
2-4: Reunión mensual de los representantes de cada grupo de trabajo para intercambiar opiniones y verificar el progreso de las actividades.	Compartir información										▒	▒	▒	▒	▒	▒		Nadia	4 TWGs	No	Mínimo	

■ : Actividades del Proyecto JICA ▒ : Actividades bajo la responsabilidad del MARN

PO_3 (Resultado-3)

Revised on August 6, 2009

Resultado 3 : Se establece un sistema sostenible para la implementación y administración de información relativa al ambiente acuático.

Actividades	Resultados Esperados	Cronograma 2006 3	6	9	12	2007 3	6	9	12	2008 3	6	9	12	2009 3	6	11	12	Persona a cargo	A cargo de implementación	Equipos Materiales	Costo	Nota
3-1: Recolectar información sobre el ambiente acuático.																						
3-1-1: Se establece convenio de intercambio de información. AMSA -MARN	Convenio										▒	▒						Nadia	TWG3	No	Mínimo	
3-1-2: Recopilar información de AMSA sobre el monitoreo de calidad del agua.	Datos recolectados			▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬		Alexander	TWG3	No	Mínimo	
3-1-3: Adquirir del MAGA mapa digital.	Mapa digital				▒	▒												Bayron	TWG3	No	Mínimo	
3-2: Desarrollar y administrar la base de datos con información del ambiente acuático.																						
3-2-1: Diseñar el sistema de base de datos con información del ambiente acuático.	Especificación de base de datos					■												Bayron	TWG3	No	Mínimo	
3-2-2: Implantar el sistema de base de datos con información del ambiente acuático.	Sistema de base datos						■	■	■	■								Alexander	TWG3	Estación de trabajo	JICA (Estación de trabajo)	
3-2-3: Llevar a cabo capacitación sobre el sistema de base de datos con información del ambiente acuático.	Informe de capacitación									■								Alexander	TWG3	Computadora	Mínimo	
3-2-4: Llegar a un acuerdo entre las organizaciones relacionadas sobre el uso compartido de los datos de información del ambiente acuático.	Acuerdo										▒	▒	▒	▒	▒	▒		Alexander	TWG3	No	Mínimo	
3-2-5: Operar y actualizar la base de datos del Sistema por el MARN.	Actualización sistema									▒	▒	▒	▒	▒	▒	▒		Alexander	TWG3	No	Mínimo	Expansión de capacidad de servidor en estudio
3-2-6: Evaluar la operación y actualización del Sistema por el MARN.	Evaluación															■		Katayama	TWG3	No	Mínimo	
3-3: Capacitar al personal del MARN, Municipalidades, AMSA, INFOM, MSPAS y otras organizaciones sobre el manejo de los datos del ambiente acuático.																						
3-3-1: Organizar un seminario de transferencia de tecnología con expertos mexicanos invitados como disertantes.	Seminario de 3 días					■												Katayama	Equipo JICA	Textos y Sala de Seminario	Aporte JICA	
3-3-2:Organizar la capacitación para los usuarios de base de datos.	Capacitación										▒	▒	▒	▒	▒	▒		Alexander	TWG3	Textos y Sala de Seminario	Aporte JICA	
3-4: Reunión mensual de los representantes de cada grupo de trabajo para intercambiar opiniones y verificar el progreso de las actividades.	Compartir información										▒	▒	▒	▒	▒	▒		Nadia	4 TWGs	No	Mínimo	

■ : Actividades del Proyecto JICA ▒ : Actividades bajo la responsabilidad del MARN

PO_3 (Resultado-4)

Revised on August 6, 2009

Resultado 4 : Se fortalece la educación y diseminación ambiental de aspectos relacionados al Reglamento de Aguas Residuales en colaboración con las Municipalidades, AMSA, MINEDUC y otras organizaciones relacionadas.

Actividad	Resultados Esperados	Cronograma																Persona a cargo	A cargo de implementación	Equipos Materiales	Costo	Nota
		2006				2007				2008				2009								
		3	6	9	12	3	6	9	12	3	6	9	12	3	6	11	12					
4-1: Conducir actividades de diseminación y socialización del Reglamento de Aguas Residuales a las municipalidades, industrias y residentes locales																						
4-1-1: Conducir Talleres Técnicos sobre el Reglamento de Aguas Residuales a industrias y municipalidades.	Conocimiento técnico de Reglamento				▒	▒												Nadia	MARN	No	Mínimo	
4-1-2: Presentar este Proyecto a las organizaciones relacionadas a efecto de promover la colaboración en la diseminación del Reglamento de Aguas Residuales.	Participación proceso de diseminación				■	■												Jara, Ito	TWG 4	No	Mínimo	
4-1-3: Preparar un plan de acción para el componente de diseminación ambiental.	Plan de acción				■													Julia, Ito	TWG 4	No		
4-1-4: Organizar la capacitación para que las municipalidades, industrias y residentes locales reconozcan la importancia del Reglamento de Aguas Residuales.	Actividad de diseminación					■	■	■	■	■	■	■	■	■	■	■		Julia & Ana, Ito	TWG 4	Materiales de divulgación, Video, Radio y Prensa	Aporte JICA（Material es y Sala de capacitación）	
4-1-5: Estudiar medidas de incentivos a las municipalidades e industrias para cumplimiento anticipado del Reglamento de Aguas Residuales.	Estudio										■	■						Jara	TWG4+TWG1	No	Mínimo	
4-1-6: Implementar medidas de incentivos a las municipalidades e industrias para cumplimiento anticipado el Reglamento de Aguas Residuales.	Incentivos												■	■	■	■		Julia, Ana	TWG 4	Incentivos	Aporte JICA	
4-2: Desarrollar materiales para educación ambiental formal del agua y proveer oportunidades de entrenamiento a capacitadores de escuelas del ciclo básico.																						
4-2-1: Establecer un sistema de colaboración con organizaciones relacionadas a la educación de ambiente acuático en escuelas del ciclo básico.	Acuerdo					▒	▒	▒	▒									Jara,Nadia	TWG 4	No	Mínimo	
4-2-2: Elaborar un plan de acción para entrenamiento de capacitadores de educación ambiental del agua en escuelas de ciclo básico.	Plan de acción						■											Julia, Ito	TWG 4	No	Mínimo	
4-2-3: Desarrollar materiales para la educación del ambiente acuático de escuelas de ciclo básico.	Material de educación							■	■	■								Julia, Ana, Ito	TWG 4	Video, Materiales (Manual)	Aporte JICA（Elaboración de materiales）	
4-2-4: Proveer entrenamiento a los capacitadores de maestros del ciclo básico.	Resultado de capacitación									▒	▒	▒						Julia, Ana	TWG 4	Materiales desarrollados	Mínimo	
4-2-5: Monitorear la capacitación de maestros de ciclo básico conducida por los capacitadores.	Resultado de monitoreo												▒	▒	▒	▒		Julia, Ana	TWG 4	No	Mínimo	

Actividad	Resultados Esperados	Cronograma																Persona a cargo	A cargo de implementación	Equipos Materiales	Costo	Nota
		2006				2007				2008				2009								
		3	6	9	12	3	6	9	12	3	6	9	12	3	6	11	12					
4-2-6: Evaluar el anterior proceso.	Resultado de evaluación															■		Katayama	TWG 4	No	Mínimo	
4-3: Capacitar al personal del MARN, Municipalidades, AMSA, INFOM, MSPAS y otras organizaciones sobre educación ambiental.																						
4-3-1: Organizar un seminario de transferencia tecnológica con expertos mexicanos como expositores.	Resultado del seminario de una semana					▌												Katayama	Equipo JICA	Textos y Sala de Seminario	Aporte JICA	
4-3-2: Enviar a personal del MARN a México para entrenamiento técnico en materia de educación ambiental	Envío del C/P del MARN						■											Jara	Equipo JICA	No	Aporte JICA	
4-4: Reunión mensual de los representantes de cada grupo de trabajo para intercambiar opiniones y verificar el progreso de las actividades.	Compartir información										▒	▒	▒	▒	▒	▒		Nadia	4 TWGs	No	Mínimo	

■ : Actividades del Proyecto JICA ▒ : Actividades bajo la responsabilidad del MARN

Annex-3

Input

Input by Japanese Side: Dispatch of Experts

Name	Speciality (Group)	Dispatch period	Working hours (men/month) First year (march 2006～july 2006)	Working hours (men/month) Second year (october 2006～march 2007)	Working hours (men/month) Third year (may 2007～march 2008)	Working hours (men/month) Fourth year (may 2008～march.2009)	Working hours (men/month) Fifth year (july.2009～december.2010)	Working hours (men/month) Total (1st to 5th year)	Expert's Organization
Masami KATAYAMA	Leader/ Policies for the conservation of the water environment and Strategies (Coordination and Output 1)	2006 march 13～2006 april 29	2.63 (2.00)					20.97 (20.20)	CTI Engineering International Co., Ltd.
		2006 june 15～2006 july15							
		2006 october 16～2006 december 14		4.00					
		2007 january 15～2007 march 15							
		2007 may 10～2007 june 8			7.07 (7.00)				
		2007 august 16～2007 december 13							
		2008 january 13～2008 march 14							
		2008 may 20～2008 july 3				4.27 (4.20)			
		2008 august 19 ～2008 september 17							
		2008 november 24～2008 december 16							
		2009 february 12～2009 march 13							
		2009 july 1～2009 august 13					3.00		
		2009 october 26～2009 december 10							
Kazuyoshi KAGEYAMA	Water quality Management/Wastewater Regulation/Wastewater monitoring, (Output 2)	2006 march 13～2006 april 12	2.30 (2.00)					19.00 (18.70)	CTI Engineering International Co., Ltd.
		2006 june 1～2006 july 8							
		2006 october 16～2006 december 14		4.00					
		2007 january 15～2007 march 15							
		2007 may 10～2007 july 8			6.50				
		2007 august 1～2007 october 14							
		2008 january 15～2008 march 14							
		2008 june 2～2008 july 22				3.70			
		2008 october 1～2008 october 30							
		2009 january 18～2009 february 16							
		2009 july 20～2009 september 2					2.50		
		2009 november 11～2009 december 10							
Tsuyoshi ITO	PCM/Environmental Education (Output 3)	2006 march 27～2006 april 29	1.13 (1.00)					6.13 (6.00)	CTI Engineering International Co., Ltd.
		2006 november23～2006 december22		2.50					
		2006 january 29～2007 march 14							
		2007 august 20～2007 september 18			2.50				
		2008 january 15～2008 february 28							
Sebastián Jara	Institutional coordination and collaboration / Management and organizations Institutions (Coordination, Outputs 1 and 4)	2006 march 13～2006 april 29	1.6 (1.50)					11.73 (11.63)	CTI Engineering International Co., Ltd.
		2006 october 16～2006 december 8		2.80					
		2006 january 15～2007 february 13							
		2007 may 10～2007 july 8			3.00				
		2007 september 10～2007 october 9							
		2008 june 2～2008 july 31				4.33			
		2008 september 14～2008 november 22							
Takayoshi KURATA	Water quality analysis, Administration and instalation / Environmental Information System (Output 3)	2006 april 1～2006 april 5	1.00					5.07 (5.00)	Kokusai Kogyo Co., Ltd.
		2006 april 17～2006 may 11							
		2006 november 11～2006 november 25		1.20					
		2007 january 15～2007 february 4							
		2007 may 10～2007 may 30			2.07 (2.00)				
		2007 september 16～2007 september 30							
		2008 january 15～2008 february 9							
		2008 january 15～2008 february 9				0.80			
Joram Gil	Sources of Water contamination (Wastewaters and Industrial waste) (Output 2)	2006 march 15～2006 april 13	1.00	-				1.00	Fundación Solar
Reiko SASAKI	Environmental education and dissemination / Training Planning (Output 4)	2008 may 19～2008 december 16				6.93		6.93	CTI Engineering International Co., Ltd.
Total			9.66 (8.50)	14.5	21.14 (21.00)	20.03 (19.96)	5.50	70.83 (69.46)	

Note) The japanesse consultantship has dispatched at own cost its staff consisting in 1.16man/month、0.07man/month、0.07man/month in the first, third and four year respectively. The figure in parenthesis ( ) means man/month of contract out of their own expense

Input by Japanese Side: Overseas Training for Counterparts

Name	Speciality	Period	Course and Training Organization	Position (Training Period)	Current Position / Date of dismisal, New position
Byron G. González	Output3	2006 november 5〜11 (7days)	Contents of the course: -General Water law of Mexico, -Legal dispositions relative to the wastewater regulation -Visits to factories, -Monitoring System, -Observation of the Texcoco Lake Project -Visit to the Water and Sanitation Training Center Organization: CNA(National Water Commission)	Vice director, SIA	Vice director, SIA
Flor de María Solórzano	Output2			Engineer,URHC	Engineer, URHC
Alejandro Recinos	Output2			Engineer, DGGARN	Engineer, DGGARN
Erick R. Ardón Morales	Output2			Engineer,URHC (intern)	Dismissed in june 2009 Non confirmed new position
Byron G. González	Output3	2006 november 26〜 december 2 (7days)	Contents of the course: -Water Pollution Control Law, Institutional System -Visit to factories, treatment plansts, -Monitoring System, -Creation of the Information System, Organization: MAVDT (Ministry of Environment, Housing and Territorial Development)	Vice director, SIA	Vice director, SIA
Flor de María Solórzano	Output2			Engineer,URHC	Engineer, URHC
Ricardo Serrano	Output2			Legal Advisor, URHC	Legal Advisor, URHC
Erick R. Ardón Morales	Output2			Engineer,URHC (intern)	dismissed in june 2009 Non confirmed new position
Erick R. Ardón Morales	Output2	2007 may 20〜june 9 (21days)	Contents of the course: -Wastewater monitoring System and Water discharge measurement Organization: IMTA (Mexican Water Technology Institute, Mexico)	Engineer, URHC	dismissed in june 2009 Non confirmed new position
Carlos R. Mazariegos Guerra	Output2			Engineer, URHC	Engineer, UHRC
Julia Flores	Output4	2007 july 25〜 august 17 (24 days)	Contents of the course: -Water environment education -Communication on water problems Organization: IMTA(Mexican Water Technology Institute, México)	Official, FOPAS	Official, FOPAS
Ana Luisa de León	Output4			Official, FOPAS	dismissed in september,2008 current position: Official CONAP
Julia Flores	Output4	2008 august 18〜 september 26 (40days)	Contents of the course: -Environmental Education through the experiences on the water environment, Organization: JICA Osaka, International Environmental Committee of Lentic Environment, ONL Kankyolakers	Official, FOPAS	Official, FOPAS
Freddy Navarro	Output2	2008 september 15〜 october 3 (19days)	Contents of the course: -Cleaner Production and Industrial waste treatment Organization: INA－CTUA, Argentina	Engineer, URHC	dismissed in january,2009 Non confirmed new position
Alejandra Sobenes		*2008 november 14〜23 (10days)	Contents of the course: -Water environment Management in Japan -History of the Minamata Disease -Water Environment Management of the Aichi Prefecture Organization: Ministry of Environment, City of Minamata, Aichi Prefecture, Japan	Vice Minister, MARN	Advisor, MARN
Francisco Anzueto				Coffee Investigation Center Executive Director	ANACAFE
Henry Sep	Output2	2008 november 24〜 december 19 (26days)	Contents of the course : - Environmental restoration for the Basin's sustainable management Organization : CONAF,Chile	Engineer, URHC	dismissed in january,2009 Non confirmed new position
Olivia Orellana	Output4	Previsto 2009 august 10〜october 8 (60days)	Contents of the course: -Environmental Education through experiences in the natural water environment -History of the Minamata Disease -Management of the water environment of the Aichi Prefecture -E S D Workshop Organización: Prefectura de Aichi, Ciudad de Minamata y otros	Official,URHC	Official,URHC
Carlos R. Mazariegos Guerra	Output2	2009 october 17〜 november 6 (21days)	Contents of the course: -Water Environmental Contamination (Cleaner Production and Industrial waste treatment) Organization: INA－CTUA, Argentina	Engineer, URHC	dismissed in january,2009 Non confirmed new position

Program original para el Proyecto　　Other JICA program

Input by Japanese Side: Donated Equipment

No.	Date	Name of Equipment (Model and Brand)		Quantity	Price (Th. yen)	Beneficiary	Place of Instalation (storage)	Actual Status
1	2007/6	Vehicle for sampling and monitoring	（Mini bus, MITSUBISHI L300)	1	1,756.5	URHC/MARN	MARN's Parking lot	In operation
2-1	2007/10	Analysis Equipment (incubator）	OXITOP	1	962.0	LBNS	LBNS	In operation
2-2	2007/10	Analysis Equipment (steam sterilizer ）	Steam sterilizer 75X	2	270.4	LBNS	LBNS	In operation
2-3	2007/10	Analysis Equipment (Spectrophotometer）	NOVA 60 (Merck）	1	288.6	LBNS	LBNS	In operation
2-4	2007/10	Analysis Equipment (Thermo reactor）	TR320 (Merck）	1	127.1	LBNS	LBNS	In operation
2-5	2007/7	Analysis Equipment (refrigerator）	With two doors FRT1764BW	1	90.9	LBNS	LBNS	In operation
2-6	2007/6	Analysis Equipment (Desktop computer）	HP dx2200M RQ9091a	1	190.9	LBNS	LBNS	In operation
2-7	2007/6	Analysis Equipment (Printer）	HP Laserjet 1160	1	64.4	LBNS	LBNS	In operation
3	2007/6	Desktop computer	HP dc57001a RL174w	3	736.8	URHC/MARN	URHC/MARN	In operation
4	2007/6	Laptop computer	Toshiba M105 SP3068	1	224.9	URHC/MARN	URHC/MARN	In operation
5	2007/6	Multifunctional printer	HP laserjet 3390	1	186.0	URHC/MARN	URHC/MARN	In operation
6	2007/6	Projector	Epson 83c	1	124.0	URHC/MARN	URHC/MARN	In operation
7	2007/6	Digital camera	HP E427	2	65.7	URHC/MARN	URHC/MARN	In operation
8	2007/12	Sampling system （with flow meter）	ISCO 2150	1	814.0	URHC/MARN	URHC/MARN	In operation
9	2008/10	Server equipment (Disk array)	DELL POWERVAULT MD3000 MODEL	1	1,291.0	SIA/MARN	SIA/MARN	In operation
total					7,193.2			

Input by Japanese Side: Equipment Assigned to Experts

No.	Date	Name of the equipment (Model and brand)		Quantity	Price (Th. yen)	Beneficiary	Place of Instalation (storage)	Actual Status
1	2007/7	Portable GPS	Galmin Vista CX	1	0.0	URHC/MARN	URHC/MARN	In operation
2	2007/7	GIS Workstation	DELL Precision 690	1	528.9	URHC/MARN	URHC/MARN	In operation
Total					528.9			

Input by Japanese Side: Other Equipment

No.	Date	Name of the equipment (Model and brand)		Quantity	Price (Th. yen)	Beneficiary	Place of Instalation (storage)	Actual Status
1-1	2007/6	Inputs for water and sludge analyses (plastic bottles and others)	No.10 Gallon (Common product)	1 kit	37.7	LBNS	LBNS	Consumed
1-2	2007/8	Water analysis inputs (lamp)	Perkin Elmer	1 kit	594.0	LBNS	LBNS	Consumed
1-3	2008/2	Inputs for water and sludge analyses (gas)	Common product	1 kit	114.9	LBNS	LBNS	Consumed
1-4	2008/3	Inputs for water and sludge analyses (reactives)	In packs or bottled Merck	1 kit	1,311.6	LBNS	LBNS	Consumed
2	2007/7	Office desk	120cm(L)X75cm(W)X75cm(H)	3	50.4	URHC/MARN	URHC/MARN	In operation
3	2007/7	Office chairs	With wheels	3	24.4	URHC/MARN	URHC/MARN	In operation
4	2007/7	Metal bookshelf	With four compartments 180cm(H)X40cm(F)X180cm(L)	1	47.6	URHC/MARN	URHC/MARN	In operation
5	2007/7	Metal files cabinet	With four drawers and key system	3	71.3	URHC/MARN	URHC/MARN	In operation
Total					2,251.9			

Input by Guatemalan Side: Implementation Cost

(unit : Japanese yen)

	Ítem	First year No.1 (Executed) ①	First year No.2 (Executed) ②	Second year (Executed) ③	Third year (Executed) ④	Fourth year (Executed) ⑤	Fifth year (Executed) ⑥	Total (①+②+③+④+⑤+⑥)
1	Operation (no training/admi.)	140,000	2,286,000	8,568,000	11,088,000	4,255,000	1,769,000	28,106,000
1.1	Personnel	96,429	1,489,568	3,894,689	7,336,267	2,063,005	1,092,111	12,816,953
1.2	Equipment Maintenance							0
1.3	Inputs	3,671	75,206	149,049	322,193	151,027	31,367	550,119
1.4	Travel and transportation							0
1.5	Communications							0
1.6	Preparation of documents		10,369	1,356,610	66,000	3,956		1,432,979
1.7	Rentals	40,827	732,394	2,052,792	2,181,042	1,515,762	488,853	5,007,055
1.8	Water and energy							0
1.9	Training			1,213,661	1,060,453		157,993	2,274,114
1.1	Facilities maintenance				122,987			122,987
1.1	Local training					522,479		0
1.1	Local Activities							0
1.1	Local Sub-contract							0
1.1	Miscelaneous							0
2	Buying of donated equipment				5,902,000	1,291,000	0	7,193,000
3	Transportation of donated equipment				0	0	0	0
4	Buying of expert's equipment				580,000	0	0	580,000
5	Transportation of Expert's Equipment				0	0	0	0
6	Buying of other equipment		7,000	11,000	2,251,000	0	0	2,269,000
7	Transportation of other equipment		0	0	0	0	0	0
8	Reports elaboration (with print shop)	140,000	82,000	402,000	432,000	432,000	465,000	1,953,000
9	Reports elaboration (without print shop)	125,000	275,000	500,000	625,000	625,000	503,000	2,653,000
10	Contracting of local consultants			3,749,000	7,289,000	1,242,000	623,000	12,903,000
11	Contracting of local NGOs				0	1,516,000		1,516,000
12	Obras				0	0	0	0
								0
Total (with no taxes)		405,000	2,650,000	13,230,000	28,167,000	9,361,000	3,360,000	57,173,000

Input by Guatemalan Side: Counterpart Personnel

TWG	Name	Dirección/Unidad	1st Year						2nd Year						3rd Year												4th Year												5th Year											
			2006												2007												2008												2009											
			3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Coordinating Group	Nadia Mijangos*	URHC																																														
	Flor Solorzano	URHC/IARNA/URHC																																														
TWG1 (Output-1)	Mario Pineda*	URHC																																														
	Selene Enrique	DGPEA																																														
	Mario Isaacs	DGPEA																																														
	Carolina Campos	DGCL																																														
	Fernando Castañaza	DGPEA/PREMACA																																														
	José Luis Menendez	DGPEA																																														
	Ligia Betancort	DGCL																																														
	Henry Sep*	URHC																																														
	Calros Ruiz	DGCL																																														
TWG2 (Output-2)	Eyda Aracely Lorenzana Tellez	URHC																																														
	Alejandro Recinos	DGGARN																																														
	Irma Guillermina Cortez	DGGARN																																														
	Ricardo Serrano	URHC																																														
	Flor Solorzano*	URHC/IARNA/URHC																																														
	Erick Ardón	URHC																																														
	Carlos Mazariegos	URHC																																														
	Henry Sep*	URHC																																														
	Maria de Carmen Castillo	LBNS																																														
	Héctor Aníbal Bol Mendoza	LBNS																																														
	Fredy Navarro*	URHC																																														
	Renato Torres	URHC (LBNS)																																														
	Dorian Minera	URHC																																														
	Bonergis Rodas	URHC																																														
	Carolina Cuevas	URHC																																														
	Carlos Gonzalez	URHC																																														
	Guillervin Adolfo Macario Castro	URHC																																														
TWG3 (Output-3)	Byron Gonzalez*	SIA																																														
	Eyda Aracely Lorenzana Tellez	URHC																																														
	Alejandro Recinos	DGGARN																																														
	Jorge Aceituno	SIA																																														
	Paolo Grimalchi	SIA																																														
	Alexander Ramírez*	SIA																																														
	Gustavo Suárez*	SIA																																														
TWG4 (Output-4)	Julia Flores*	DGFOPAS																																														
	Ana Luisa de Leon	DGFOPAS																																														
	Enrique Miranda	URHC																																														
	Olivia Orellana	URHC																																														
	Escarlet Minera	URPP																																														
	Betzaida Revolorio	URPP																																														

*: Group Coordinator

Assignment Period

Input by Guatemalan Side: Implementation Cost

(Expressed in GTQ)

No.	Description	Monthly expense	2006 oct.-dec.	2007	2008	2009 jan.-nov.	Total GTQ.
1	Physical space	8,500.00	25,500.00	102,000.00	102,000.00	93,500.00	323,000.00
2	Parking	2,000.00	6,000.00	24,000.00	24,000.00	22,000.00	76,000.00
3	Electricity	1,200.00	3,600.00	14,400.00	14,400.00	13,200.00	45,600.00
4	Purified water	100.00	300.00	1,200.00	1,200.00	1,100.00	3,800.00
5	Telephone service	900.00	2,700.00	10,800.00	10,800.00	9,900.00	34,200.00
6	Internet Service	2,100.00	6,300.00	25,200.00	25,200.00	23,100.00	79,800.00
7	Cleaning and maintenance service	700.00	2,100.00	8,400.00	8,400.00	7,700.00	26,600.00
8	Security service	800.00	2,400.00	9,600.00	9,600.00	8,800.00	30,400.00
9	MARN Personnel (18 persons)	58,500.00	175,500.00	702,000.00	702,000.00	643,500.00	2,223,000.00
10	Fuel for monitoring			8,380.00	24,000.00	22,000.00	54,380.00
11	Media publicity campaign			250,000.00			250,000.00
	Total		**224,400.00**	**1,155,980.00**	**921,600.00**	**844,800.00**	**3,146,780.00**

(Expressed in US Dollars)

No.	Descripción	Monthly expense	2006 oct.-dec.	2007	2008	2009 jan.-nov.	Total US $
1	Physical space	8,500.00	3,356.96	13,366.51	13,076.92	11,557.48	41,357.88
2	Parking	2,000.00	789.87	3,145.06	3,076.92	2,719.41	9,731.27
3	Electricity	1,200.00	473.92	1,887.04	1,846.15	1,631.64	5,838.76
4	Purified water	100.00	39.49	157.25	153.85	135.97	486.56
5	Telephone service	900.00	355.44	1,415.28	1,384.62	1,223.73	4,379.07
6	Internet Service	2,100.00	829.37	3,302.32	3,230.77	2,855.38	10,217.83
7	Cleaning and maintenance service	700.00	276.46	1,100.77	1,076.92	951.79	3,405.94
8	Security service	800.00	315.95	1,258.02	1,230.77	1,087.76	3,892.51
9	MARN Personnel (18 persons)	58,500.00	23,103.81	91,993.07	90,000.00	79,542.65	284,639.52
10	Fuel for monitoring			1,098.15	3,076.92	2,719.41	6,894.48
11	Media publicity campaign			32,761.06			32,761.06
	Total		**29,541.28**	**151,484.53**	**118,153.85**	**104,425.22**	**403,604.88**
	Exchange rate		7.60	7.63	7.8	8.09	

Besides the costo of the DR- CAFTA-AID manual

Done by:
Lic. Edgar David Contreras Montoya
General Director of Finances and Adminisgtration
Guatemala, July 29th.,2008