

Summary of the Evaluation Results

1. Outline of the Project	
Country: Oriental Republic of Uruguay	Project title: The Project on Water Pollution Control and Management of Water Quality in the Santa Lucia River Basin
Issue/Sector: Environmental Management	Cooperation scheme: Technical Cooperation
Division in charge: Global Environment Department	Total cost (as of Nov 2010): About 200 million yen
Period of Cooperation: April, 2008 – March, 2011	Partner Country's Implementing Organisations: National Directorate of Environment(DINAMA)
	Japanese Cooperating Organisation(s): Nippon Koei Co. Ltd., Ministry of Environment
	Related Cooperation: <ul style="list-style-type: none"> • Development Study: The Project on Capacity Development for Water Quality Management in Montevideo and Metropolitan Area (2003.10-2007.1)
1-1 Background of the Project	
<p>The Oriental Republic of Uruguay is a country with an area of 176,000 km², and a population of about 3.30 million. Although the Santa Lucia River basin hosts only 12% of the total population, over 60% of the population benefits from water usage from this basin. Consequently, this situation must be addressed and the necessary steps be taken to prevent water pollution in Santa Lucia River. The sources of pollution include sewage, industrial wastewater, leachate from solid waste, as well as runoff from agricultural fields as its non-point source. In order to control pollution, Uruguay has been implementing various measures, such as construction of sewerage systems and waste disposal facilities, enforcement of industrial wastewater control regulations, etc. Nevertheless, these efforts have been largely isolated, and not well coordinated.</p> <p>Under the circumstances, the Government of Uruguay requested the Government of Japan technical cooperation, and the Development Study entitled “The Project on Capacity Development for Water Quality Management in Montevideo and Metropolitan Area” was conducted by National Directorate of Environment (DINAMA) and Japan International Cooperation Agency (JICA) from October 2003 until January 2007. The Study developed an integrated Master Plan (M/P), and carried out various related activities, such as production of manuals and development of a water quality database SISICA. However, further development of environmental management capacity is required to implement the M/P. Hence, after the Preparatory Study by JICA in November 2007, both Governments agreed to implement the technical cooperation project entitled “the Project on Water Pollution Control and Management of Water Quality in the Santa Lucia River Basin” (hereinafter referred to as “the Project”) in March 2008.</p> <p>The Project started from April 2008 with 3 years' of cooperation period (until March 2011) and it is now being implemented with 5 JICA Experts dispatched (with areas of expertise being Chief Advisor/ Capacity Development, Monitoring/ Pollution Control (Management), Inspection/ Pollution Control</p>	

(Treatment), Data Analysis/ Evaluation/ GIS/ Coordination and Water Analysis/ Coordination). In the course of the Project implementation, the Joint Mid-term review was performed in October 2009. Based on the result of the Mid-term review, the Project had modified the PDM and continued the Project activities. As the cooperation period of the Project will terminate in March 2011, the terminal evaluation has been planned in November 2010 in order to verify its achievement.

1-2 Project Overview

This Project is aiming at capacity strengthening of DINAMA with respect to water pollution control/water quality management in Santa River Basin, through waste water/river water monitoring, data compilation and analysis, and enforcement activities with related organizations.

(1) Overall Goal:

1. Measures to improve water quality of Santa Lucia River Basin are taken.
2. Cooperate and strengthen the programs and projects of pollution control and water quality management in cooperation with actors involved for promoting improved environmental management in other river basin.

(2) Project Purpose: Capacity of DINAMA and other institutions involved with respect to water pollution control/water quality management for Santa Lucia River Basin is strengthened.

(3) Outputs:

1. Management system of DINAMA with respect to pollution source control/water quality management is developed.
2. The coordination and collaboration system among relevant institutions subject to control of water pollution source/water quality management is established.
3. Capacity of DINAMA and other institutions involved with respect to water monitoring system of river and effluent is strengthened.
4. Capacity of DINAMA and other institutions involved with respect to data compilation, analysis and evaluation subject to water pollution source control is strengthened.
5. Capacity of DINAMA with respect to inspection, evaluation and enforcement subject to pollution source management is strengthened.
6. The integrated information system with respect to water pollution control/water quality management is constructed and used.

(4) Inputs (as of Nov 2010)

Japanese side:

- Japanese experts
Short-term: 5 persons (46.47MM) * Includes anticipated placement up to March 2011
- Training courses: 1 person participated in Training and Dialogue Programs
- Equipments: About JPY 2 million
- Support for Local Activity Cost: About JPY 28 million (seminars, training courses, sub-contract work and publications)

<p>Uruguayan side:</p> <ul style="list-style-type: none"> • 20 personnel from DINAMA (2 from National Directorate, 7 from DCDA, 10 from DECA and 3 from laboratory); 2 personnel from OSE • Project Office: two office spaces within DINAMA • Office facilities: access to the computer network, telephone line, printer, fax and photocopy • Cost-sharing of operational expenses: sampling, chemical analysis, utilities, workshops, internet access, travel expenses for counterpart personnel 		
<p>2. Outline of the Final Evaluation Team</p>		
<p>Evaluation Team</p>	<p>Japanese Side:</p> <ol style="list-style-type: none"> 1. Leader, Mr. Mitsuo Yoshida, Senior Advisor, Japan International Cooperation Agency (JICA) 2. Cooperation Planning, Mr. Mimpei Ito, Environment Management Division II, Environmental Management Group, Global Environment Department, JICA 3. Evaluation Analysis, Ms. Yuko Tanaka, Consultant, VSOC Co. Ltd. <p>Uruguayan Side:</p> <ol style="list-style-type: none"> 1. Mr. Jorge Rucks, National Director of National Directorate of Environment (DINAMA) 2. Ms. Silvia Aguinaga, Director of Division of Environmental Control and Performance (DINAMA) 3. Mr. Luis Reolón, Director of Division of Environmental Quality Evaluation (DINAMA) 4. Ms. Magdalena Hill, Project Coordinator (DINAMA) 	
<p>Period</p>	<p>November 2, 2010 – November 22, 2010</p>	<p>Type of Evaluation: Terminal</p>
<p>3. Summary of Evaluation Results</p>		
<p>3-1 Achievements</p> <p>(1) Likelihood of Achieving the Project Purpose</p> <p>Project Purpose: Capacity of DINAMA and other institutions involved with respect to water pollution control/water quality management for Santa Lucia River Basin is strengthened.</p> <p>As a result of the Project implementation, the capacity of DINAMA with respect to water pollution control/water quality management for Santa Lucia River Basin has been strengthened. The capacity of DINAMA and the relationship with other institutions have been amplified and strengthened. In terms of capacity of other institutions, Project has promoted the coordination and collaboration between DINAMA and other institutions although there is little tangible outcome. Therefore, the Project Purpose is almost achieved in terms of capacity of DINAMA. However, in terms of other institutions, the achievement of Project Purpose has not been measured, since the Project design did not anticipate the indicators to do so.</p> <p>Taking account of the level of achievements of each output, as well as the results of the interview and the questionnaire, it is verified that the Project purpose is mostly achieved. Most of the activities identified in the Action Plan have been either completed or are close to completion (Indicator 1). Coordination system among relevant institutions has been promoted through increased communication</p>		

with relevant institutions including OSE, DINASA, MGAP and target municipalities (Indicator 2). Information sharing is also enhanced in terms of data on pollution sources and water quality in Santa Lucia River Basin (Indicator 3). Regarding data management related to pollution control, basic data and information including database was reconstructed (see Section 3.2.2, Output 6) and the migration of data from the old to the new database system is expected to be incorporated by January 2011 (Indicator 4). In terms of actual performance of pollution control (Indicator 5), about 180 inspections were carried out for SADI-related industries in 2009, 45 of which were from Santa Lucia River Basin. In addition, a large number of inspections were carried out on non-SADI industries as well. Moreover, the self-reporting system of SADI related industry has been strengthened by an introduction of Environmental Operation Report called IAO in December 2009¹.

(2) Level of Achievements: Outputs

Output 1: Management system of DINAMA with respect to pollution source control/water quality management is developed.

Output 1 has been mostly achieved. In total of 67 meetings/ seminars were held with 591 participants (Indicator 1.1), which contributed to the achievement of Output 1. Capacity assessment of DINAMA is carried out in 2008 focusing on institutional, organisational and individual aspects (Indicator 1.2). Based on the capacity assessment, the Action Plan² was developed in October 2008, and most of the activities are either completed or are in the process of finalisation (Indicator 1.3).

Collaborative relationships between DECA and DCDA have been strengthened. Both divisions confirm that the relationships were strengthened mainly through increased information sharing and collaborative activities implemented jointly.

Some of the Project activities including water quality and effluent monitoring depend on DINAMA Environmental Laboratory for sample analysis, however, the analytical results requested to the laboratory sometimes took long time to be reported to DECA/DCDA. It means that the management system within DINAMA has still room to be improved in future.

Output 2: The coordination and collaboration system among relevant institutions subject to control of water pollution source/water quality management is established.

The Output 2 has been partly achieved. Great progress on the coordination/collaboration system could be observed; for example, issues such as atrazine contamination problem, non-point source pollution, and water quality monitoring have been raised during the discussion among DINAMA and other related institutions (Indicator 2.1). These issues opened up spaces for information sharing and exchange, involving various institutions such as MGAP, OSE, DINASA and target municipalities (Indicator 2.2). The collaborative activities as well as information exchange with above mentioned institutions and municipalities have contributed toward the identification of common issues and/or topic of interests, some of which includes: pesticides/herbicides problems, non-point source pollution, amongst others.

¹ In accordance with the Resolution 235/09, which became effective in December 2009, periodical reporting of environmental performance by industries became mandatory (Chapter 4, Draft Project Completion Report)

² For the detailed contents of the Action Plan, see Appendix 2 of the Progress Report No.1 (October, 2008).

However, from the institutional point of view, the coordination and collaboration system cannot be considered to be fully established, given the circumstances where any vision or strategy are yet to be clarified in terms of roles of municipal governments in environmental management as well as roles of government institutions at the central level within the national institutional framework.

Furthermore, there has been an effort by DINAMA to promote collaboration with target 5 municipalities since the previous JICA-DINAMA Development Study preceding the Project. The communication channel with target municipalities has been maintained, and in some municipalities has been strengthened.

Output 3: Capacity of DINAMA and other institutions involved with respect to water monitoring system of river and effluent is strengthened.

The Output 3 has been mostly achieved. A total of 39 seminars, workshops and meetings were held under this output with 497 participants from various organisations (Indicator 3.1). Monitoring of the nutrients in effluents has been identified as one of the important issues and became one of the regular parameters for monitoring in the industry (Indicator 3.2). The Monitoring Plan was modified in 2009 adopting Data Quality Objective framework of the USEPA (Indicator 3.3). The revised Monitoring Plan is expected to be launched by January 2011, once some modifications are completed on sampling points. A total of 608 water samples were analysed from 32 sampling points between December 2004 – November 2010, where 19 parameters were analysed (Indicator 3.4).

DINAMA has conducted a joint monitoring activity with Florida Municipality and it implemented a Level 4³ monitoring with participation from OSE and local industries in July 2010. Although capacity for water monitoring by DINAMA's staff per se has been remained at the same level since the beginning of the Project, strengthening monitoring capacity of the municipalities does enhance monitoring activities of DINAMA as a whole.

The Output 3 will be achieved by the end of the Project if the modification on sampling points of the revised Monitoring Plan is completed and utilised. According to the plan of DECA it will be put into practice by the anticipated date of January 2011.

Output 4: Capacity of DINAMA and other institutions involved with respect to data compilation, analysis and evaluation subject to water pollution source control is strengthened.

The Output 4 has been achieved satisfactorily. A total of 39 meetings were held under this output with 504 participants (Indicator 4.1). The pollution source inventory was reviewed and a new database is now being constructed with additional items (such as nitrogen and phosphorus level) (Indicator 4.2). The effluent data at individual pollution source were digitised and analysed, with additional sampling data on nitrogen and phosphorus concentration (Indicator 4.3). The pollution load analysis (BOD, T-N, T-P) were made both at point and non-point pollution sources (Indicator 4.4)

The Project is now undertaking a water quality simulation by incorporating a result from joint monitoring mentioned earlier (see Output 3). The development and better knowledge of this instrument would enhance estimation of the level of contaminations at different points within Santa Lucia River Basin.

³ Level 4 indicates those stations located above and below potential hot spots of pollution.

One of the significant achievements of the Project is that it provides the comprehensive quantitative analysis of several issues including non-point pollution source (contributing rate of non-point pollution source for example). Before the beginning of the Project, data compilation were made to some extent, however not sufficient analysis and evaluation were conducted on these data. Strengthened capacity in data analysis made it possible to quantitatively understand the importance of non-point as well as point pollution sources.

Output 5: Capacity of DINAMA with respect to inspection, evaluation and enforcement subject to pollution source management is strengthened.

The Output 5 will be achieved if a strategy for pollution control in Santa Lucia River Basin is finalised by the end of the Project⁴. A total of 55 meetings were held under this output with 721 participants (Indicator 5.1). Issues such as effluent concentration as well as information on pollution load have been sorted out and analysed (see output 4), that allowed DINAMA to identify and prioritise issues for pollution source management (Indicator 5.2). For example, the analysis made by the Project suggests that almost 80% of the pollution load (i.e. BOD, T-N, T-P) in target area are from non-point pollution sources. A pilot study was conducted on meat industry and it provided a diagnostic, the design in a particular industry for the improvement of its wastewater treatment system, and a good practice guideline (Indicator 5.3).

Output 6: The integrated information system with respect to water pollution control/water quality management is constructed and used.

The Output 6 will be achieved if the remaining issues described below are completed by the end of the Project: 1) to complete revision of the past data for water quality monitoring database and 2) to transfer pollution control data from old to the new database system.

The basic data and information including database on water quality and pollution source in Santa Lucia River Basin were reconstructed (Indicator 6.1). Some of the water quality database is made available in public through DINAMA's website, that has also facilitated information exchange among related institutions on issues related to pollution control and/or water quality management (Indicator 6.2).

Both of the databases are expected to be shared and are made accessible by other stakeholders according to the privileges granted to each one of them. All of the municipality have now physical environment (a PC and a network) to access to the database, and some trainings on how to use the database system were conducted in all of the 19 municipalities by DINAMA.

In addition, DINAMA may undertake some additional follow-ups to the municipalities on the usage of water quality database system.

⁴ The Project is now elaborating a strategy for pollution control in Santa Lucia River Basin, which is expected to be completed by January 2011.

3-2 Results as per the Five Evaluation Criteria

(1) Relevance

The relevance is considered to be remained high. The Project Design is still relevant in view of consistency with national policy of Uruguay, Japan's cooperation policies, and the needs of the target groups. Santa Lucia River serves as a drinking water source for Montevideo and metropolitan area, where almost 60% of the entire population is inhabited and the need for water quality control is reasonably high. In addition, Santa Lucia River Basin is now identified as one of the strategic basins within Agenda for Integrated National Water Resource Management Plan (2010).

In terms of national policy, the National Water Policy Law was approved by the parliament in October 2009. This Law serves as a base for National Water Policy that focuses the concepts of sustainability, integral management of water resources, and efficiency in the use of water amongst others.

The Project's contents are coherent with Japan's cooperation policies to Uruguay. The environmental conservation is raised as one of the four priority areas for cooperation policies.

(2) Effectiveness

The effectiveness of the Project is moderately assured. Regarding the level of achievement of the Project Purpose, as is discussed in section 3.2.3, it has been mostly achieved. The capacity of DINAMA both in terms of water pollution control and water quality management are strengthened in the sense that it has deepened knowledge on the situation of water quality and pollution sources of Santa Lucia River, and that this increased knowledge has been enhancing DINAMA to better implement water quality monitoring as well as pollution control. Some communication channel with target municipality as well as related institutions have been either maintained or strengthened through the Project's activities.

All of the 6 Outputs have contributed to the achievement of the Project Purpose. However the level of achievement of Output 2 is considered to be partial, which diminishes the effectiveness of the Project. However, the partial achievement of Output 2 did not affect the achievement of Project Purpose, since there were cooperation relationships with concerned agencies practically.

(3) Efficiency

Overall, the level of efficiency of the Project has been adequate, since most of the inputs of the Project have been utilised to produce outputs. The Development Study was conducted prior to the Project, and this served as a basis for promoting activities of water quality monitoring with municipalities. The Development Study also served as a formulation stage of this Project, however it is reported that the process of project formulation at the Development Study had not fostered sufficient mutual understanding regarding the contents of the Project. Consequently, almost six months were spent for detailed discussions on the contents of the Project after its initiation, that contributed toward the reestablishment of mutual trust between both sides. This indicates that the efficiency of 'programme approach' including implementation of Development Study and the Project, has not been fully optimised from longer-term point of view.

(4) Impact

The Terminal Evaluation team has verified that there are some positive factors that can contribute to the achievement of Overall Goals, such as increased capacity of DINAMA for better water quality management and pollution control in Santa Lucia River Basin as well as in other basins in the country.

A new initiative for setting up basin commission in strategic rivers including Santa Lucia River is another positive factor leading to the Overall Goal. In addition, some positive impacts of the Project other than Overall Goal include: (1) The discussion about nutrients and pesticides contamination showed the relevance of this issue and the needs for coordination among related institutions; (2) Technical capacity at the institutional level of municipalities was improved; (3) Exchange with national government institutions was strengthened. No negative impacts have been reported so far.

As for the external factors such as Government Policy or continuation of cooperation of relevant organizations, no negative factors are expected.

(5) Sustainability

The sustainability of the effects of the Project is considered to be relatively high for the following reasons.

1) Policy aspects:

From the policy perspective, improvement of water quality management and pollution control in Santa Lucia River Basin is likely to be among the priority areas for environmental management. According to the National Water Resource Policy Law adopted in 2009, Santa Lucia River is now formally nominated as one of the two important strategic rivers in the country⁵. DINASA was established in 2006 and the National Water, Environment and Territory Council, the Regional Water Resource Councils, and the Basin Commissions will be organised under MVTOMA, which involves DINAMA. Thus the sustainability from policy aspect is expected.

2) Organisational and financial aspects:

In terms of organisational and financial aspects, DINAMA has been conducting water quality monitoring and pollution control on their own human and financial resources during the course of the Project. Therefore the sustainability of these activities is relatively high, although it can be affected by the shortage of permanent staff in DECA and DCDA.

Additionally, there is uncertainty in the following aspects: (1) The public institution reform is now taking place and MVOTMA is designated as a pilot ministry under the reform; (2) The collaboration system among relevant institutions in river basin commission is yet to be determined.

3) Technical aspects:

At the technical level, the Project has accumulated quantitative information regarding water quality and pollution control. Regarding river water quality data, database has been constructed and is already incorporated into a database system. As for pollution control, database was improved and will be incorporated into the SIA in January 2011. The technical sustainability of managing these data would increase even more if these database systems are to be utilised both by DINAMA as well as by other stakeholders. In addition, DINAMA control division is now able to conduct pollution loads analysis on their own, which is another encouraging factor for technical sustainability.

(6) Factors that promoted/ inhibited realization of effects

- 1) Promoting factors: Consistent placement of the Uruguayan Project members and Uruguayan-side-led operation; Identification of Shared Interest; and Program approach have

⁵ The other strategic river is Negro River.

been identified as promoting factors to effectively implement the Project.

- 2) Inhibiting factors: Initial stage of policy formulation regarding river basin management; and Project Design have been identified as inhibiting factors to effectively implement the Project.

3-3 Conclusion

The Project has made good progress so far. The Project Purpose has been mostly achieved and most of the 6 Outputs are also either mostly or satisfactory achieved, except for Output 2. In terms of the Five Evaluation Criteria, the relevance is considered to be remained high, the effectiveness is moderately assured and the efficiency is adequate. Some positive impacts have been observed in terms of increased capacity of DINAMA for better water quality management not only in Santa Lucia River Basin but also in other basins in the country. In addition, basin commission is now in the process of setting up in several strategic river basins including Santa Lucia River. Regarding the sustainability of the Project, it is considered to be relatively high, from policy, organisational/financial, and technical aspects.

3-4 Recommendations and Lessons learned

3-4-1 Recommendations

On the ground of the results of the study summarised above, the Terminal Evaluation Team has made the following recommendations to the Project.

1. DECA is recommended to complete the modification of the revised Water Monitoring Plan and to ensure actual utilisation of the revised plan by January 2011
2. DCDA is recommended to complete the Draft Strategy for Pollution Control in Santa Lucia River Basin by January 2011.
3. DECA is recommended to complete the setting up of pollution source database system before the end of the Project, through its Environmental Information System Department, in coordination with DCDA.
4. Both DCDA and DECA are recommended to ensure the actual utilisation of: 1) pollution source database system and 2) water quality database system by DINAMA as well as other stakeholders.
5. DECA and DCDA are recommended to continue providing support to municipalities regarding the utilisation of water quality and pollution source databases. In addition, they are recommended to work on the same lines with other public and private stakeholders.
6. It is recommended for MVOTMA to allocate sufficient permanent staff for DCDA and DECA in order to ensure satisfactory operation of river water monitoring and pollution control.
7. It is also recommended for MVOTMA that the institutional set-up of River Basin Commission should be accelerated.

3-4-2 Lessons learned

1. It is difficult to promote effective coordination with relevant institutions if a definite strategy does not exist at the higher level. A project shall be designed based on the clear understanding of strategic position of upper parties, otherwise the Project Purpose cannot be properly set.
2. It is important to appropriately incorporate counterpart as well as other stakeholders in the designing stage of the Project in order to foster mutual understanding and relationship of trust among them.

3. The PDM shall present detail in defining indicators relevant to capacity development so that the level of achievement of outputs/outcome can be objectively measured.