

업무자료
평가심사 2014-29-052

ISBN 978-89-6469-217-2 93320

2014

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Ex-post Evaluation Report on the Project for Modernization of Communication and Information System of the State Ministries of the Republic of Paraguay

한국국제협력단

발간등록번호

11-B260003-000313-01

Ex-post Evaluation Report on the Project for
Modernization of Communication and Information
System of the State Ministries of the Republic of Paraguay

2013. 12



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This evaluation study was entrusted to Kookmin University by KOICA for the purpose of independent evaluation research. The views expressed in this report do not necessarily reflect KOICA's position.

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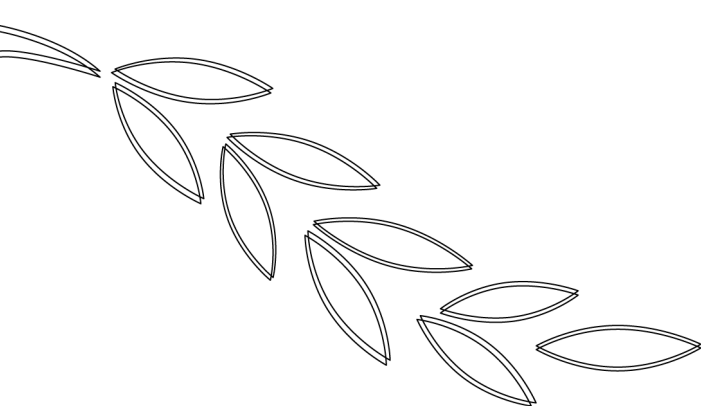
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Result of Grade Evaluation

Result of Grade Evaluation

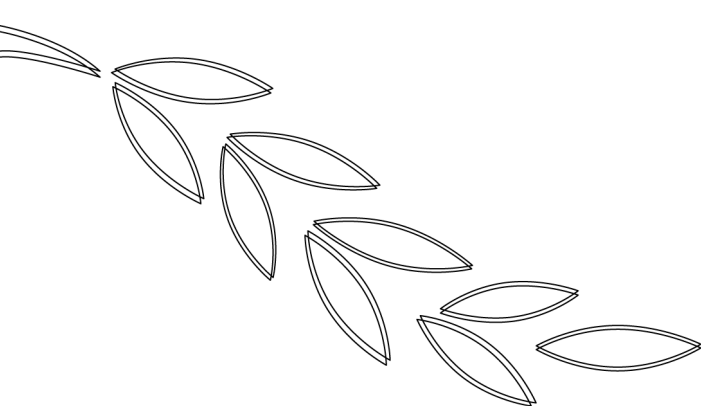
1. Project Title:

Project for Modernization of Communication and Information System of the State Ministries of the Republic of Paraguay

2. Evaluation grade by OECD DAC Criteria

- Relevance : 3, ②, 1 (partially relevant)
 - Reason for the grade: This project has provided an important technical base for national informatization and e-Government in Paraguay. Upgrading the existing communication network among state ministries was quite relevant, but groupware system was not quite relevant considering the level of information mind and legal, institutional, and technical infrastructure in Paraguay at the time this project was adopted.
- Efficiency : 3, ②, 1 (partially efficient)
 - Reason for the grade: Budgets were all efficiently allocated and spent as originally planned. However, the groupware system was unable to be evaluated because it was never used. All other parts of the project were implemented in cost-effective ways.
- Effectiveness/Impacts : 3, ②, 1 (50~80% of planned effectiveness)
 - Reason for the grade: Upgrading the communication network among state ministries was completely successful. VoIP was actively used when the project was finished, but the usage rate has been significantly decreased thereafter. Groupware was successfully installed in two ministries (Ministry of Finance and Ministry of Industry and Trade), but the system was never used due to government transition right after the completion of the project. Expert dispatching and invited manpower training programs were well undertaken though a little more attention should be paid in selection of invited fellows.
- Sustainability : 3, ②, 1 (sustainable after improvement)
 - Reason for the grade: The project correspond to the priority and demand of the recipient country. The counterpart agency on the part of Paraguay was not politically strong enough to implement this project, which created problems in sustainability of the impacts of this project. But the new government started in August 15, 2013, began to reorganize governance of the ICT policies, which increases the potentiality of increasing sustainability in the future.

3. Total Grade : Partly successful



Executive Summary



Executive Summary

The Project of the Modernization of Communication and Information Systems of State Ministries of the Republic of Paraguay (hereafter the Project) was started in 2006 when the government of Paraguay officially requested the Project to the government of the Republic of Korea. The Project was successfully implemented until 2009, and the outcomes of the Project has been actively used since then. The ex-post evaluation as was undertaken in this report intends to evaluate the prolonged performance of the Project.

The Project was consisted of four main parts and other miscellaneous parts with a budget of US\$2.5 million. Four main parts are: 1) upgrading the existing network from 1 Gbps to 10 Gbps, along with NMS (Network Management System), metro ethernet, and adding the Ministry of Defense to the backbone node of the system; 2) constructing VoIP (Voice over Internet Protocol) along with IP PBX(Private Branch eXchange), and provision of IP phones; 3) providing groupware systems to two ministries (Ministry of Finance and Ministry of Industry and Commerce); and 4) Providing training courses by inviting managers and experts from Paraguay, and dispatching Korean experts for actual implementation of the Project and on-the-spot training. Small miscellaneous costs are also included for project management fees and other maintenance costs.

The ex-post evaluation was undertaken based upon the evaluation criteria of OECD DAC including relevance, efficiency, effectiveness, impact, sustainability, and cross-cutting issues. In addition, the evaluation team also adopts the performance reference model (PRM) for e-Government, which was developed to measure performance of ICT and e-Government

projects. PRM has various levels and dimensions to measure performance, which includes mission and work, customers, process and activity, human resource, information technology, and associated resources. PRM factors are merged into the OECD DAC evaluation criteria given the Project was an e-Government ODA. In addition, a PDM (Project Design Matrix), which was proposed as the target to be achieved by the Project, is also included in the evaluation model for this ex-post project.

Actual ex-post evaluation finds the following results.

First, the Project was evaluated as "partially relevant." Considering the demands of the recipient country, the Project was quite relevant. It also met the donor country's aid strategy because the Project was a part of series of e-Government upgrading and a master plan of Paraguay. The relevance of the Project was also shown in its relationship with MDGs. However, the implementation process was not completely relevant mainly because of the political changes caused by the presidential election and the resulting government turn-over, and the weakness of ICT governance such as political and institutional weaknesses and frequent changes in jobs from government to private sector among those who were trained in Korea.

Second, the Project was evaluated as "partially efficient." Although the Project was implemented on time and the budget was spent as originally planned, a few problems were found in human resource development. A major problem was found those who actually participated in the training courses offered as parts of the Project. Due to the uniqueness of political culture and the spoils system widely accepted in Paraguay, 9 out of 15 fellows who were invited and trained in Korea changed their jobs from government to the private sector. In addition, 4 out of 12 people who participated in the working-level training course were actually in the position of director level, meaning they were not appropriate to the training program.

Third, the Project was evaluated "partially effective." The impact was also partially effective. As discussed, the Project was consisted of four parts, upgrading the public administration network, providing VoIP, groupware, and related human resource developments. The network upgrading part was successfully completed and actively used thereafter, meaning it was very effective and achieved the goals originally targeted. The VoIP part was successfully completed and relatively well used at the beginning, but as time goes by, it was not well maintained and thus by the time, the ex-post evaluation team began to examine performance, VoIP was only actively used by the UTMAR, the counterpart of the Project. Other ministries which once have used VoIP relatively well failed to continue to use the service simply because they could not secure the necessary budget to maintain the VoIP service. The groupware that were provided to Ministry of Finance and Ministry of Industry and Commerce was never used although the groupware system itself was successfully installed. This was mainly due to the actual spoils system unique to Paraguay and other Latin American countries.¹⁾ The training programs that were provided to the Paraguayan experts were evaluated as very satisfied although a few changes would make the training program better.

Fourth, the Project was evaluated as "partially sustainable." The network upgrading part has been very sustainable although Ministries of Education and Labour were not connected by the time evaluation was made.

Through the experience of e-Government ODA to Paraguay, we can draw some lessons as follows.

First and foremost, it is political and policy issues rather than

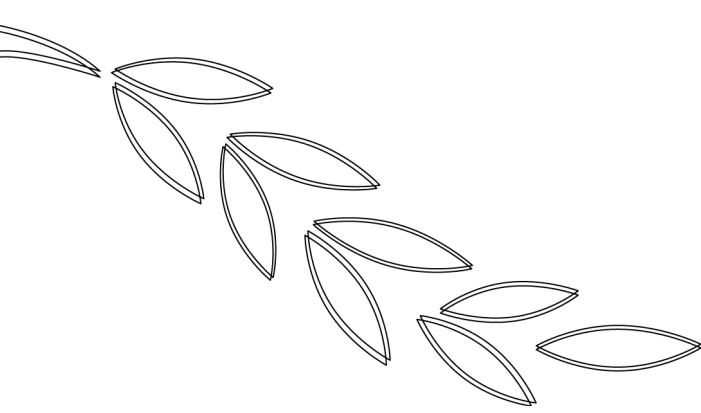
1) Spoils system means that almost all public employees are changed when there is a change of government. Jobs in the public sector are viewed as games to be distributed to those who contribute to winning the election. Paraguay, like other Latin American countries, officially adopts the merit system in public personnel management. But in reality, most Latin American countries are close to the spoils system.

technology which is critical to the success or failure of e-Government ODA project. All four parts of the Project were well implemented and all necessary systems were successfully constructed and transferred to the government of Paraguay. But political, legal, and institutional problems inherent in Paraguayan government were the main cause of limiting the performance of the Project.

Second, lack of ownership of the recipient is a critical factor that limits the actual performance of the Project. Failure to secure the budgets to connect back to the RMSP, the main communication network of the central government, after they moved to new buildings, is the typical example in this regard.

Third, lack of effective and efficient ICT governance is a critical reason for why the impacts and sustainability of the Project were limited. Though having such a good governance is completely up to the decision of the recipient country, the donor country needs to consider to help the recipient country to have better ICT governance in the long run.

This report provides several suggestions to improve the performance of e-Government ODA project such as the active participation of policy consultants from the very beginning of e-Government ODA project, paying necessary attention to political and policy barriers in the whole process of implementation, institutionalizing incentive systems to increase ownership of the recipient country, yearly performance reports submitted by the recipient agency and linking it to follow-up maintenance programs, and so on.



I . Background for Evaluation

1. Ex-post Evaluation Needs for ODA Project
2. e-Government and ODA
3. Levels of e-Government



I Background for Evaluation



1. Ex-post Evaluation Needs for ODA Project

- South Korea is recognized for its government agencies maintaining a higher level of informatization as the world's best e-Government realization state by the United Nations.
- e-Government-related business is steadily increasing in the area of ODA projects and the future of ODA is expected to grow as a core business area.
 - However, despite an increase in e-Government ODA projects, comprehensive inspections and post-evaluation are experiencing many difficulties since they did not function correctly.
 - Therefore, the post-evaluation related to e-Government ODA projects is an activity not only for the a single business, but is absolutely necessary in the next e-Government initiatives' continuous expansion.
- In general, the Korea International Cooperation Agency's (KOICA) post-assessment activities, related to a concluded business, are being conducted by checking processes and outcomes systematically while conducting limited ODA budgets' efficient enforcement and on the improvement of aid effectiveness for its purpose.
- ex-post evaluation about the KOICA's e-Government ODA projects is undertaken in order to monitor the prolonged impacts and sustainable outcomes of the already provided ODA projects.

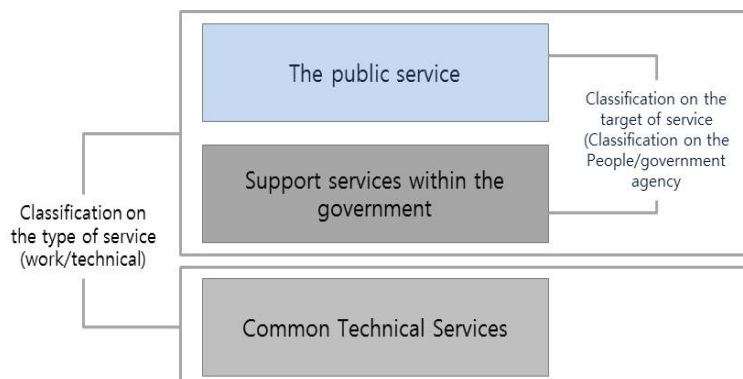
- Currently, KOICA has provided various e-Government ODA projects. In order to increase the performance of such projects, various types of actions are undertaken such as interim and final evaluations, follow-up maintenance, and ex-post evaluation as was done in this report.
- The Korean government conducted a \$2.5million project in Asuncion, Paraguay for 2 years from 2007 to 2008 to modernize the Communication and Information System for Paraguayan Ministries. This ex-post evaluation is conducted to evaluate the Paraguayan e-Government ODA project through the performance standards of OECD DAC.



2. e-Government and ODA

- e-Government is defined as a form of government in the era of the information age, in which information and communications technology (ICT) is widely adopted and utilized in public administration. Generally speaking, the adoption of ICT in public administration allows a dramatic increase of efficiency and productivity in providing administrative services. It also increases overall transparency within governments, and allows interactive services for citizens' demands.
- Utilizing ICTs within governments can be divided into three categories: public services, government support services, and common technology services in terms of e-Government as shown in <Figure 1>.

<Figure 1> Classification Criteria for e-Government Services Sector



Source: Ministry of Public Administration and Security - National Information Society Agency, Service Reference Model 2.1, 2011.08

- e-Government ODA is one of the new areas of ODAs, which began to receive more attention from the international community in recent years.
 - Since the digital divide is viewed as one of the main reasons for the huge income disparity among sub-Saharan African countries, many developing countries began to consider having more ODAs in the field of e-Government.
 - e-Government programs have a purpose to improve the efficiency of public services, transparency, and reliability.



3. Levels of e-Government

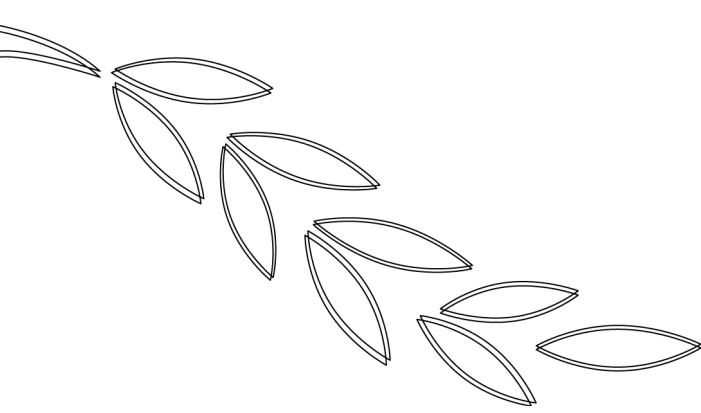
- According to the e-Government survey²⁾ by the United Nations (UN), South Korea has been named as one of the highest developed countries regarding e-Government, while Paraguay has maintained a lower-middle level of e-Government. Korea was ranked in 5th place (0.8727) in 2005, but it quickly moved to the 1st place (0.9283) in 2012.
- Paraguay, on the other hand, was ranked in 107th place in 2005, 88th place in 2008, and even moved down to 104th place in 2012.
- The penetration ratios of various ICT devices in Paraguay are as follows; telephone (5%), mobile phone (92%) and internet (5%). Especially, the penetration of mobile phones, though most of which are pre-paid phones, has been rising dramatically.
- PC penetration ratio in Paraguay gradually increased from 5.9% in 2005 to 8% in 2009. But those of government ministries are relatively high. For example, the Ministry of Finance has 80% of PC penetration ratio, while the Ministry of Foreign Affairs is 90% and the Ministry of Industry and Commerce is 60%, all of which have power and influence within the central government.
- With the ICT development index of 2.52, Paraguay ranked the 96th in 2007, which was down a little bit 2.02 and 82nd in 2002. For the reference, ICT Development Index of South Korea was 7.26, ranked 2nd in 2007 and 5.83, ranked 3rd in 2002.

2) e-Government Survey of UN Economic and Social Council have examined the levels of e-Government of 190 UN member countries since 2002. The results of the evaluation has been announced in the form of "e-Government Development Index," which consists of an online service index, telecommunication infrastructure index, and human capital index.

<Table 1> The Informatization Index of Paraguay, South Korea, Brazil (2007)

Index		Paraguay	S.Korea	Brazil
Access Index	Number of telephone lines per 100 people	6.4	46.4	20.5
	Number of mobile phone subscribers per 100 people	76.6	90.2	63.1
	Frequency of Internet per user (bit/s)	1,886	1,358	2,955
	Percentage of Households with Computers(%)	10.4	80.0	20.8
	Percentage of Households with Internet access (%)	4.0	94.0	15.4
User Index	Number of Internet users per 100 people	8.7	76.3	35.2
	Number of Broadband subscribers per 100 people	0.8	30.5	3.5
	Number of Mobile Broadband subscribers per 100 people	-	48.6	1.2
Capability Index	Middle School Enrollment	66.5	97.5	105.5
	High School Enrollment	26.7	92.6	29.3
	Literacy rate of Adults	94.8	99.0	89.5

Source: ITU



II . Evaluation Methodology

1. Period for Evaluation
2. Models for Evaluation
3. Evaluation Matrix
4. Evaluation Methodology


1. Period for Evaluation

- The ex-post evaluation for the Project has been conducted from June 10 to October 11, 2013. Several milestones during this period are as follows:
 - Beginning of the project : June 10, 2013
 - Mid-term presentation : September 10, 2013
 - Final presentation : October 11, 2013

- Main research activities undertaken in this period are listed in the table below.

<Table 2> List of Main Activities

	Period	Main Activities
Preparing and Designing Field Research	May – June 10	Schedule setting Contract with local specialists Launching the project
Field Research in Korea	June 11 – July 18	Interviews with PMC people Literature review
Field Research in Paraguay	July 19 – July 25	Visit and conduct interviews
Analyzing Outcomes of Field Research	July 26 – September 09	Summarize research outcomes and draw implications
Mid-term report	September 10	Mid-term presentation
Revising Evaluation Outcomes	September 11 – October 10	Additional research, domestic and abroad
Final Presentation	October 30	Final presentation of field research outcomes
End of Project	30 Oct.	Printing final report

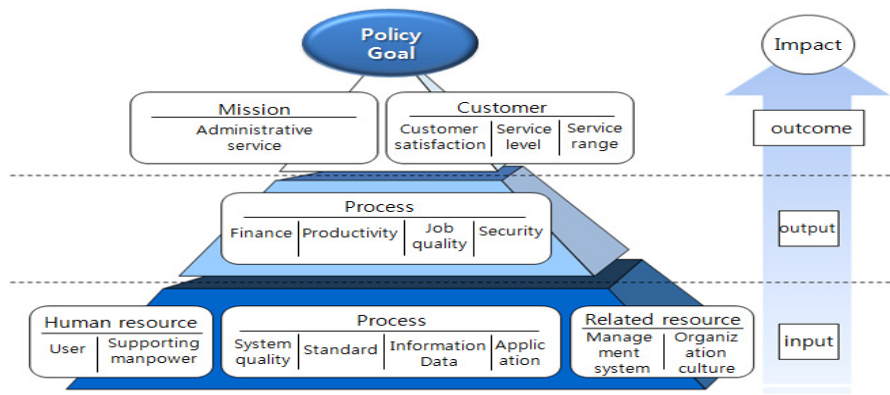


2. Models for Evaluation

- The logical model has been applied widely to ODA project evaluation based upon the value chain of evaluation activities. These activities are; inputs, activity, outputs, outcomes, and impacts.
 - Inputs: financial, human, material resources that are put into ODA projects
 - Activity: financial or technological supports to produce an output.
 - Outputs: a product as a result of ODA project, referring either a commodity or service and including byproducts as well
 - Outcomes: achieved or achievable outcomes from outputs
 - Impacts: relatively long-term, either positive or negative impacts which directly or indirectly caused by ODA projects

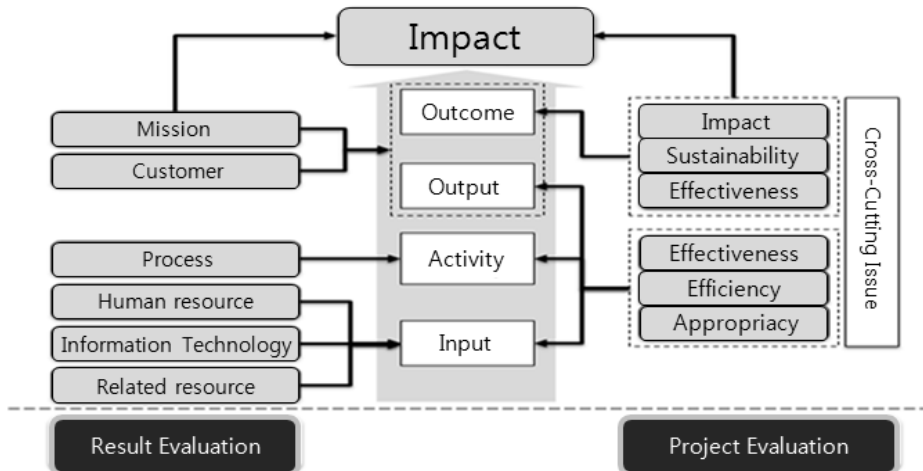
- Since the e-Government ODA projects have some uniqueness due to its nature of ICT applications to provide public services, evaluation of e-Government ODA projects are usually undertaken by the so-called Performance Reference Model (PRM). PRM has the following components and factors in its evaluation framework.

<Figure 2> Performance Reference Model (PRM) Framework



- Since the Project is an e-Government ODA in nature, the evaluation team devised a new model to evaluate the Project, which combined OECD DAC evaluation criteria with PRM as shown in <Figure 3>

<Figure 3> Evaluation Model for e-Government ODA projects



3. Evaluation Matrix

- Evaluation matrices are consisted of a series of questions that are categorized into the evaluation model as shown in the <Figure 3>.
- OECD DAC criteria for evaluation (relevance, efficiency effectiveness, impacts, sustainability, and cross-cutting issues) and factors and areas of evaluation of PRM are served as key groupings for evaluation matrices in combined ways. Detailed criteria, areas, and questions included in the evaluation matrices are provided in the appendix.



4. Evaluation Methodology

- The ex-post evaluation was carried out by using various methods to examine the actual outcomes, impacts, and sustainability of the Project. In particular, we have engaged in an intensive literature review, which include virtually all documents that have been created in the process of project implementation. Intensive field interviews with those who have participated in the Project, both from donor and recipient countries. In addition, the researchers actually visited most government ministries which are the main beneficiaries of the Project, and observed how the outcomes of the Project are being utilized in actual field setting. By cross-examining the outcomes of these three different investigation, the researchers draw conclusions for this ex-post evaluation.
- Literature reviews were started out by gathering all the documents published before, during, and after the implementation of the Project. Documents that are reviewed are as follows.
 - Letter of request
 - Report of feasibility study
 - Plan for project implementation
 - Interim evaluation report
 - Final evaluation report
 - R/D (Record of Discussions)
 - PDM (Project Design Matrix)
- Literature on performance indicator and evaluation methods on ODA projects include the following.
 - The Basic Plan for ODA, 2011~2015 (2010)
 - Guidelines for ODA Project Evaluation by KOICA (2008)
 - Methodologies of Project Planning, Monitoring and Evaluation (2009)
 - Report on the Implementation System on the Paris Declaration for Aid Effectiveness (2009)

- Assessment Report on Gender Impact for ODA Projects (2010)
 - Glossary of Assessment and Performance Management (2010)
 - Evaluation Report on ODA for Human Resource Development (2008)
 - Evaluation Report on the Satisfaction of Invited Trainees (2010)
 - Guidelines for Considering Environmental Factors in ODA (2010)
- Domestic interviews were conducted with the person in PMC, a third party specialist who was dispatched to Paraguay, and a professor who was dispatched to Paraguay three times during 2011-12 period. A list of interviewees and the main questions that were asked to them were shown in the <Table 3>.

<Table 3> Major Questions of Domestic Interview

Interviewee	Question
Dispatching Expert	<ul style="list-style-type: none"> ① Implementation background of the project, purpose, and goals ② Degree of support from recipient countries for projects (administration, institution, etc.) ③ The best part in the process of projects / difficult things ④ Level of institution / recipient country / recipient agency satisfaction after the end of project ⑤ Expected outcome of recipient agency after completion of the project ⑥ Things to keep in mind when post-evaluating about other projects
Participant	<ul style="list-style-type: none"> ① Support request for project from recipient country / recipient agency ② Understanding the business details of the recipient agency participants ③ Degree of support from recipient countries for projects (work convenience, workforce, etc.) ④ The best part in the process of projects / difficult things ⑤ Things to keep in mind when post-evaluating about other project

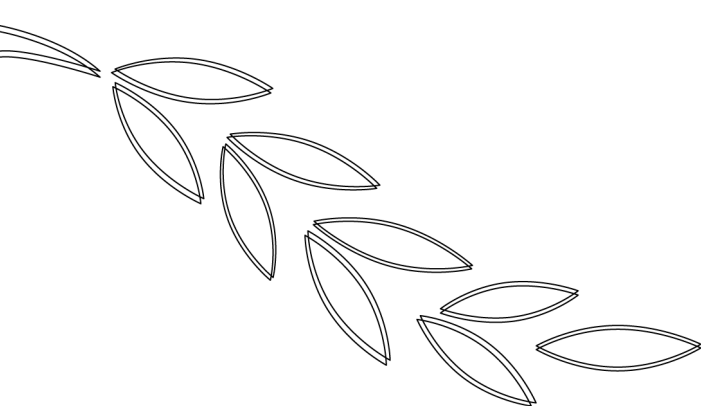
* Domestic Interviewees

- Dispatching Expert : Choi, Jang-hak (3 months dispatch, 2009-2010)
Hong, Hyung-Deuk (3 months dispatch, 2011-2012)
- Participant : Chang, Jaeu-Un (Paraguay head of office)

- The field research for visiting Paraguay was conducted from July 22nd (Monday) to 25th (Thursday). Detailed schedule and activities are provided in the <Table 4>. Names of the people who were interviewed and the ministries that the researchers actually visited are also included in the table.

<Table 4> July Schedule for Paraguayan Field Research

Date		Description	Location
		<ul style="list-style-type: none"> • From Incheon-> To Asuncion 	
22 (Mon.)	AM	<ul style="list-style-type: none"> • KOICA Paraguayan Office • Visit Paraguayan ambassador • Pre-seminar Interview on Wednesday • Meeting 	KOICA Paraguayan Office
	PM	<ul style="list-style-type: none"> • Working-level meeting on the project, Modernization of Communication and Information System • Interviewee : Mrs. Deleon, Gloria ,Carlos Nuñez, Víctor Narváez, Katiana Leguizamón & Daniel Lee (Report presentation) 	UTMAP
23 (Tue.)	AM	<ul style="list-style-type: none"> • Visit Ministry of Finance <ul style="list-style-type: none"> - interviewee : Derlis Samudio & Staff - visit data center in the Ministry • Visit Presidency of the Republic <ul style="list-style-type: none"> - interviewee : Carlos Montiel • Visit Ministry of Interior <ul style="list-style-type: none"> - interview : Luis Fernando Acuña 	Ministry of Finance, Presidency of the Republic, Ministry of Interior,
	PM	<ul style="list-style-type: none"> • Ministry of Public Works <ul style="list-style-type: none"> - interviewee : Pedro Insaurralde - Talk on the issue of Groupware and electronic approval 	Ministry of Public Works
24 (Wed.)	AM	<ul style="list-style-type: none"> • Support KOICA Seminar • Presentation by Pf. Hong, Sung-Gul and Pf. Chung, Chung-Sik 	Central Bank of Paraguay
	PM	<ul style="list-style-type: none"> • Interview trainee <ul style="list-style-type: none"> - interviewee : CIO Carlos Nuñez & Experts Katiana Leguizamón • Evaluation of dispatching experts 	Central Bank of Paraguay
25 (Thu.)	AM	<ul style="list-style-type: none"> • Visit Ministry of Industry and Commerce <ul style="list-style-type: none"> - interviewee : Jorge Ozorio • Visit Ministry of Agriculture <ul style="list-style-type: none"> - interviewee : Florinda Noguera • Visit UTMAP • Understand e-Government infrastructure and governance of Paraguay 	Ministry of Industry and Commerce, Ministry of Agriculture, UTMAP
	PM	<ul style="list-style-type: none"> • Final meeting (3-4 pm) 	KOICA Paraguayan Office



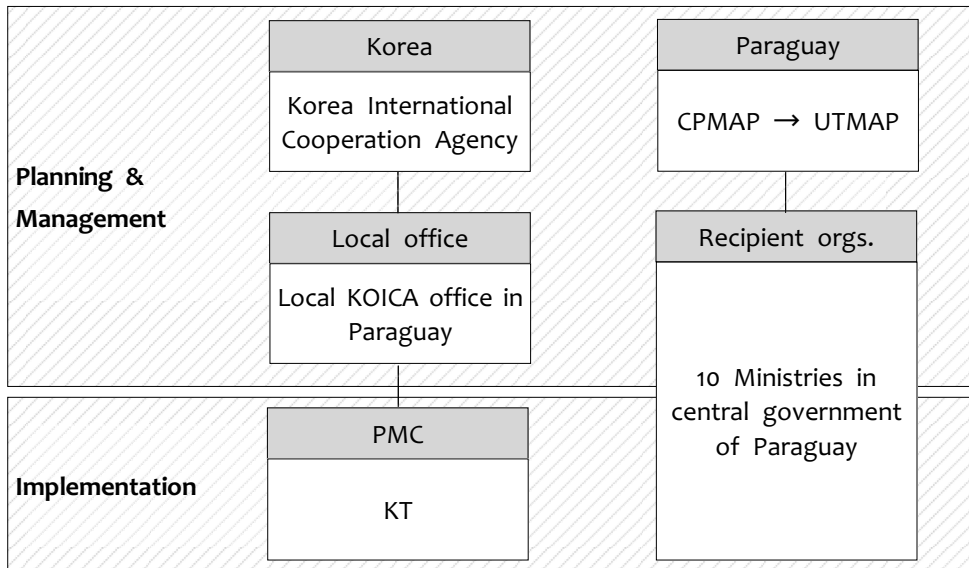
III. Overview of the Project

III

Overview of the Project

- The organizational system for implementing the Project consisted of five units both from the donor and recipient countries as shown in <Figure 4>
 - CPMAP in the Office of the President served as the responsible counterpart of the government of Paraguay for this Project between 2007 and third quarter of 2008.
 - After the Lugo government came in, CPMAP was reduced to UTMAP, which became much weaker in political status.

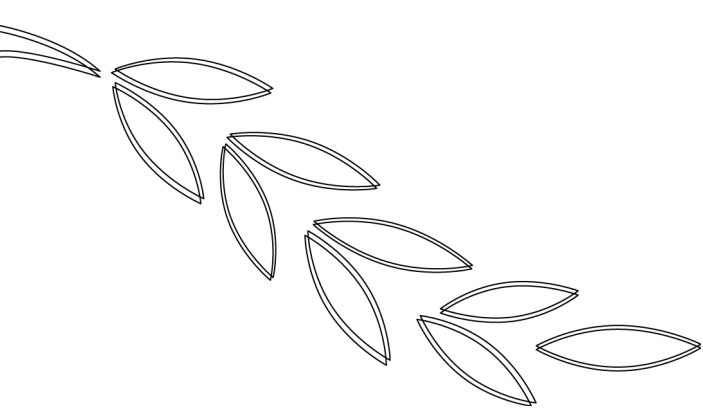
<Figure 4> Implementation System of Paraguay Project



- The Project consisted of four major parts and small miscellaneous fees with a total budget of \$2.5 million. Detailed project overview was presented in the <Table 5>.

<Table 5> Project Overview

	Description	
Project title	Modernization of Communication and Information system of the State Ministries	
Budgets/duration	\$2.5 million/ 2007 -08 (2years)	
Region	10 ministries located in Asuncion, Paraguay	
Beneficiary	Public officials in central government	
Project	<Korea>	
	<ul style="list-style-type: none"> Upgrading basic network (\$0.5 m) 	<ul style="list-style-type: none"> NMS (Network Management System) Metro Ethernet Expanding from 1Gbps to 10Gbps Adding to Ministry of National Defense to RMSP backbone node
	<ul style="list-style-type: none"> VoIP system (\$0.7 m) 	<ul style="list-style-type: none"> VoIP, Access Gateway IP Phone IP PBX
	<ul style="list-style-type: none"> Groupware (\$0.7 m) 	<ul style="list-style-type: none"> Groupware engine and client server Customization Groupware Operating Server and PCs
	<ul style="list-style-type: none"> Inviting trainees (\$0.2 m) 	<ul style="list-style-type: none"> Executive course (3persons/a week) Working-level engineers (8persons/ 4 weeks)
	<ul style="list-style-type: none"> Dispatching experts (\$0.2 m) 	<ul style="list-style-type: none"> PMC local field survey (3 persons/ a week) Network Upgrade (1 person/4 weeks) IP PBX Construction (4 persons/4 weeks) Demand analysis on groupware (1 person/3 weeks) Groupware construction and education (2 persons/6 weeks) Project maintenance (1 persons/4 weeks) (2 weeks per each, 2 times)
	<ul style="list-style-type: none"> Maintenance (\$37,000) 	<ul style="list-style-type: none"> Maintenance fees
	<ul style="list-style-type: none"> Management (\$0.1 m) 	<ul style="list-style-type: none"> Logistics and miscellaneous costs
	<Paraguay>	
	<ul style="list-style-type: none"> Supporting human resources for system construction and operation Arranging and modifying IP address system Arranging and changing phone number system in government Supporting UPS power generator and air-conditioner Changing circuits of switchboard and internet phones Connecting internet and optic fiber cables between ministries Administrative works (customs-free) 	
Implementing Agency	<ul style="list-style-type: none"> The Committee of Administrative Reform, Office of the President, The Republic of Paraguay (CPMAP, later changed into UTMAP) 	



IV. Key Findings and Evaluation Results

1. Result of Ex-post Evaluation
2. Overall Grade

IV

Key Findings and Evaluation Results

In this chapter, a ex-post evaluation was conducted based on the evaluation framework that we have established in the previous chapter. As shown earlier, the framework was formed by combining OECD DAC evaluation criteria with e-Government PRM. PRM factors were reviewed within OECD DAC criteria such as relevance, efficiency, effectiveness, sustainability, impact and cross-cutting issues.

1. Results of Ex-post Evaluation

A. Relevance

Evaluation: 3, ②, 1

evaluation standards		definition		
		3	2	1
Relevance	<ul style="list-style-type: none"> If it match development goal, purpose and plan If it match with police that strengthen the ownership of recipient country If it match with means of living and cultural background If it was proper to solve a development issue in a technical way. 	very adequate	partly adequate	in-adequate

- Paraguay as a recipient country has been consistently trying to develop 'e-Government' with having presidential secretariat as a main actor.

Furthermore the government of Paraguay have tried multi-dimensional efforts to informatize itself by enacting ICT-related laws and introducing various ICT systems, as well as formulating a ICT master plan.

- Especially, the ICT master plan which were formulated after this project with the support from KOICA, is expected to bring further ICT development in Paraguay.
- The Project evaluated in this report had contributed to provide a foundation for establishing e-Government and continuation of national informatization in Paraguay.
- Despite of the contribution of the Project, there were some pitfalls as well mainly because this project was conducted in four different parts without having necessary relationship among themselves. Moreover, providing groupware system turned out to be a bit inappropriate given the political characteristics and the level of informatization within the government of Paraguay. The biggest problem was caused by the actual spoils system that is popular in most Latin American countries. That is, most key people in the government of Paraguay are changed after the Presidential election which is held every five years. The groupware system that was provided to two ministries (Ministry of Finance and Ministry of Trade and Commerce) was not properly transferred to the new government due to the change of government.
- Unlike ICT infrastructure such as network building, provision of new ICT application systems such as groupware can succeed when digital mind among public officials has to be widespread and using new ICT applications should be mandated by law or administrative orders. This requires strong ICT leaderships at politically high-level or government organizations. But due to

the spoils system, it is difficult to guarantee the ICT leadership at the period of regime change. In conclusion, the adoption of groupware was not relevant in the government of Paraguay.

- After Paraguay was designated as a country of priority cooperation in 2006, a series of ICT-related ODA projects have been provided to Paraguay corresponding to the Korean aid strategy. The Project was a meaningful and important project both for Paraguay and Korea in terms of raising the global status of Korea and the partnership between the two countries. In the long-term perspective, the Project has potential to provide valuable opportunities to Korean ICT firms to enter into the Latin American market.
 - Korea's national brand image and global status can be upgraded by supporting Paraguay with its ICT capabilities and policy experiences.
 - Strengthening the partnership between Korea and Paraguay by transferring information and communication technologies.
 - Establishing the foundation for Korean ICT firms to enter into the Latin American markets.

- The Project is related to the goal number 8 of MDGs, that is to "develop a global partnership for development." Particularly, the Project is closely related to the "benefits of new technologies aligned with private partners, notably in new ICTs."

- At the formation stage of the Project, the government of Paraguay originally requested upgrading the communication network linking 17 local governments. However, according to the project feasibility study in December 2006, the Project contents were changed to upgrading the administrative communication network of 10 central ministries of the central government. Installation of groupware to two ministries (Ministry of Finance and the Ministry of Industry and Commerce) was also included as suggested by the

report of the feasibility study.

- No clear reason of changing the contents of the Project were addressed. But it seemed that the Ministry of Finance as a main administrative controller of governmental communication networks, used its political power to change the target.

- In case of the communication network upgrading project of the central government, all the legal bases were already prepared by a Presidential decree. However, in case of the groupware project, no validity study such as political and legal environment were undertaken.
 - Generally, there are possibilities of mismatch between introducing ICT systems and making the necessary legal preparations at the early stage of the project. A typical case of such a mismatch is found in the telemedicine. Technically, telemedicine does not have any problem. But telemedicine services are not yet provided even in Korea mainly because of the lack of laws and can not be implemented. Similar to this, the groupware doesn't have any technical problems. But some delays can occur because of the legal and institutional problems or even due to its own administrative culture.
 - Groupware system was introduced without having appropriate legal and institutional considerations. In addition to the political regime change that was made right after the completion of the groupware installation, lack of legal and institutional preparation were also main reasons for not using the groupware system provided to Ministry of Finance and Ministry of Industry and Commerce.

- According to the interim evaluation report undertaken during April-June of 2008, the Project was properly implemented in all aspects including budget allocation and provision of facilities and equipment. This means that there

wouldn't be any major problem for the successful completion of the Project.

- Upgrading the administrative network of the central government and VoIP system were successfully implemented as planned. Groupware system was also successfully completed, though it was not actually used due to government regime change and In case of Groupware, construction of the system was completed however, until the interim evaluation, this was not being used by the Ministry of Finance and the Ministry of Industry and Commerce. The improvement of legislation in electronic signature issue were not solved.
- In April 2008, when the interim evaluation was conducted, there were change of governments in Paraguay. Due to this change, evaluation of sustainability of the project was necessary but only technological perspectives were considered.

○ According to the final evaluation report conducted after the project was completed, the Project laid a groundwork for public ICT infrastructure to construct e-Government in Paraguay by upgrading the RMSP. Furthermore this project was being considered to be fulfilling the needs of the recipient country in terms of cost reduction for communication services (internet, mobile and fixed phones, etc.) between the central departments. However, ex-post evaluation reveals that there are problems in terms of sustained use of the provided systems.

- However, there seem to be some limits as well regarding risk managements, confusion and/or conflicts in management system, and lack of proper maintenance caused by insufficient manpower. In fact, ICT specialists who were invited and trained in Korea frequently moved to the private sector, which became a reason for insufficient ICT manpower in various ministries.
- Especially, the use of VoIP telephone was estimated to be in a good status since about 90% of VoIP phones that were distributed to 10

ministries were actively used. But at the time of ex-post evaluation was conducted, less than 10% of VoIP phones were being actively used.

- With the political changes based upon change of governments, there were some difficulties to maintain the service/project due to change of trained officials and even confusion about the management operating system due to the change of project host from CPMAP to UTMAP.

- In sum, the Project itself was relevant and implemented as planned. But relevance of the Project was negatively affected by the government changes, political culture, and institutional changes. Shifting jobs from public to private sectors has accelerated the reduction of relevance of this Project. ent of trained professional officials have also resulted maintenance problem, which needs continuous follow-up management by sending professionals.

B. Efficiency

Evaluation : 3, ②, 1

evaluation criteria		definition		
		3	2	1
efficiency	<ul style="list-style-type: none"> • Whether evaluation target was managed efficiently • If it resulted better outcomes with same amount of resources • Whether there was other options at lower cost • Its economic value compared to other options 	efficient (managed within 100%)	partly efficient (managed within 100~150%)	inefficient (managed over 150%)

- Korean experts dispatched for the Project were highly evaluated by those who were counterparts in Paraguay. But those who were invited to Korea for training courses had problems regarding the following two aspects: 1) 6 out

of 15 trainees left the government and moved to the private sector mainly due to the spoils system, and 2) 4 out of 12 trainees who were invited to Korea at the mid-level engineer courses were in fact at the managerial level. Most of them were directors, meaning that they did not engaged in actual field works.

- High-ranking public officials are being replaced every 5 year because of the spoils system is enforced under five-year single-term presidential system.
- Because of many people in charge of information technology being moved to the private sector, there is no guarantee for continuity of managing the ICT system.
- Regarding the communication network modernization project, most of trained officials were replaced, which resulted difficulties in providing maintenance services in each ministry.

○ Overall all, the Project budget was spent as planned as shown in the following table.

<Table 6> Expenditures of modernization of communication network in Paraguay

Classification	Planned(US\$)	Actual Spending(US\$)	Note
equipment support (incl. system development)	1,938,000	1,551,007	<ul style="list-style-type: none"> • RMSP Upgrade • VoIP equipment • Groupware construction
fellowship invitation	203,000	212,577	
professional dispatch	244,000	233,573	
management	115,000	50,985	
total	2,500,000	2,048,142	

- Considering the poor ICT infrastructure in Paraguay, project budgets were mainly allocated for equipments and system development. Budget for each activities of the project were conducted as planned. With the limited budget, the Project was cost-effectively implemented. After spending the necessary budget, some left-overs were spent to provide an IP Phonebook for the central government, which was very welcome by many users in various ministries.

- Construction of the communication network system was completed within the project period. But since the groupware system was never used by the two ministries allocated, it is meaningless to evaluate reduction of project period.
 - All the project budget (\$2,500,000) was spent during 2007 and 2008 as scheduled.

- Outcomes on associated resources to the central government communication network (RMSP) modernization project in Paraguay can be evaluated by the performance indicators on the ICT management system and the related organizational culture. But there is no meaningful performance management undertaken by the government of Paraguay until recently. After August 15, 2013 when the new government comes in, the ICT management regime can be reshuffled.

C. Effectiveness

Effectiveness evaluation : 3, ②, 1

evaluation criteria		definition		
		3	2	1
Effectiveness	<ul style="list-style-type: none"> Achievement level of planned goal, purpose and product Changes caused by specific project (not by external effects) 	planned effectiveness over 80%	planned effectiveness between 50~80%	planned effectiveness under 50%

- According to a field survey carried out on July 2013, the RMSP network was partly utilized, but has some difficulties in maximizing the benefits of the RMSP mainly because of the ineffective political system in Paraguay.
- The outcomes of four major parts of the Project can be summarized as follow.
- In case of the RMSP upgrading project, the goal was fully achieved.
 - From the interview with person in charge, upgrading the RMSP was successfully done and it is being used properly. This project have contributed to form a foundation for information and communication infrastructure within the government of Paraguay.
 - This RMSP was stably operated without single shut-down since its completion.
 - However, a couple of ministries, Ministry of Education and Ministry of Agriculture, were not directly connected to RMSP since their moves to new buildings. Both ministries could not fix their own budget to connect the RMSP directly. As of now, both ministries are using a leased telecom lines from a local service provider at 2 Mbps.

- The VoIP system was provided upon the request of the government of Paraguay to reduce massive telephone bills among many ministries. When the VoIP system first introduced, about 90% of the provided VoIP was used according to the final evaluation report. But at the time when ex-post evaluation was conducted, a mere 10% seemed to be used.
 - Currently VoIP based telephone is used only by UTMAP, and in most other ministries, only one or two officials are using VoIP based telephones.
 - In case of the Office of the President, VoIP based telephone was never used. As <Figure 5> shows, some VoIP phones were left without opening the boxes. It was not used from the beginning because of the security concerns.

<Figure 5> VoIP phones in Original Boxes in the Office of the President



- In case of the Ministry of Agriculture, VoIP usage rates dropped dramatically after moving into other building about two years ago. The Ministry of Education has reconnected the service after the relocation of the government office due to a fire accident. However the Ministry of Education is using a commercial service carrier to connect its telephone

line to RMSP because the budget to connect RMSP directly was not provided until now. In addition, employees did not use VoIP frequently mainly because of frequent changes in position. Less than 400 phones (including 80 soft phones) were distributed to all 10 ministries, number of VoIP phones distributed to an individual ministry were relatively small. All of these in combined way contributed to reduce the use of VoIP phones, which affected negatively to the sustainability of the Project (see the appendix for the report on VoIP).

- Although groupware system was successfully completed as planned, groupware part of the Project was evaluated a complete failure because the system was never used by either ministries where the system was constructed (Ministry of Finance and Ministry of Industry and Commerce).
 - There was a conflict between the Ministry of Finance and the Ministry of Industry and Commerce over the issue about who would going to manage the groupware server when groupware systems were constructed. Following to this, there was a change of governments, which resulted in the change of CIOs in both ministries without transferring this issue. Since then, groupware was completely forgotten by the two ministries and never been used (see the appendix for the detailed reasons for the failure of groupware system).

- The fellowships to invite Paraguayan trainees were consisted in two courses, a managerial course (2 weeks, 3 persons) and a working-level course (4 weeks, 12 persons). Overall the fellowship program was highly evaluated and achieved its original goals. KOICA fellowship fellows were also showed deep appreciation of hospitality their received in Korea. But some consideration should be made for future selection of fellowship fellows.
 - Selection of trainees should be reconsidered to match the level of positions. As pointed out earlier, some director-level officials were included

in the working-level course.

- Another problem was found in the frequent change of jobs from government to the private sector due to the spoils system. Due to this, 9 out of 15 fellows moved to the private sector after receiving professional training in Korea. This caused difficulties in providing necessary maintenance services to VoIP services in particular.
- Expert dispatching program was highly evaluated by the Paraguayan counterpart.
- According to interviews with KOICA fellows, they were all very satisfied with the services provided by Korean experts in the sense that they had enough professional knowledge and passion to work. Officials from each ministry judged that dispatched professionals were highly skilled.
- Since the Project was consisted of 4 parts, customer satisfaction has been examined as follows.
- In case of RMSP backbone network upgrading project (1G→10G), administrative services such as paying salaries to public employees, tax report, property right management, etc. are all conducted much faster and convenient than before. All public officials interviewed expressed a complete satisfaction in this regard.
 - In case of VoIP system, only people from UTMAP emphasized its effectiveness. Since VoIP phones in 10 ministries are not well utilized, only a few high-ranking officials have ever used VoIP phones. Most public employees did not have any chance to experience the VoIP system.
 - In case of groupware, it is impossible to estimate customer satisfaction simply because there is no user.
 - About fellowship and expert dispatching programs, all the interviewees were highly satisfied.

- Paraguay's RMSP upgrading project needs to run a continuous activities to improve the effectiveness.
 - As a post-management activity, VoIP and ICTs security experts from PMC was dispatched for 3 weeks (2013.10.12-11.2). However according to our investigation undertaken during our post-evaluation period, experts to manage the Project in general would be needed to improve effectiveness of the Project.

D. Impacts

- The goal of the Project was the modernization of administrative services of 10 ministries of the central government in Asuncion, Paraguay, by upgrading RMSP from 1G to 10 Gbps, providing groupware system to 2 ministries, and providing VoIP systems. This goal is partly achieved as shown above. The Project also provided a good foundation for e-Government for better administrative services.
- Electronic document and electronic payment is not being activated inside the administration because the groupware system is not being used in the Ministry of Finance and the Ministry of Industry and Commerce.
- Awareness of VoIP among general governmental officials are low because of utilization rate of VoIP in each ministries are very low.
 - Currently, there is a movement of utilizing the open-source groupware system in the Office of the President. Revitalizing the already-provided groupware would be a good alternative if the Office of the President decides to reuse the system. Otherwise, the groupware system would be useless, and e-Government of Paraguay may adopt open-source SW as its technological bases.

E. Sustainability

Evaulaton : 3, ②, 1

evaluation criteria		definition		
		3	2	1
sustainabili ty	<ul style="list-style-type: none"> • If it match with recipients priority and demand • Ownership level of project target • System and organizations to manage effectively • Financial capacity to maintain the outcome of project 	very sustainable	sustainable after improvement	unsustainable

- High-ranking public officials are being replaced in every five years because of the spoils system enforced under five-year single-term presidential system in Paraguay. Due to these political characteristics of Paraguay, the Project has structural limitations.
- In case of Paraguay, a long-term perspective on the strategy of national informatization is necessary to maximize the benefits of the Project. Sharing Korean experiences and knowledge, and mutual cooperation in building up e-Government would be indispensable for this purpose.
 - In this case, political approach should be considered rather than the technical aspects because most problems and barriers are political in nature as shown in this report.
 - Demand for e-Government also can be maintained only when political leaders and high public officials recognize the potential benefits of e-Government and have strong willingness to construct and institutionalize e-Government systems and laws.
- Because Paraguay is at the early stage of administrative modernization, its levels of ICTs at this moment are relatively low. However, e-Gvoernment ODA

project such as this would allow technology transfer necessary to operate the ICT systems. Thus having additional e-Government projects would contribute to the sustained improvement of technology level.

- To improve effectiveness of RMSP, adoption of e-document and e-signature systems are necessary. It seems that legal and institutional problems have to be resolved to enact related laws and decrees.
- In addition, ICT governance reform to institutionalize an ICT control tower within the government would be necessary for increase the benefits of any ICT-related ODA project and/or programs.

F. Cross-cutting Issue

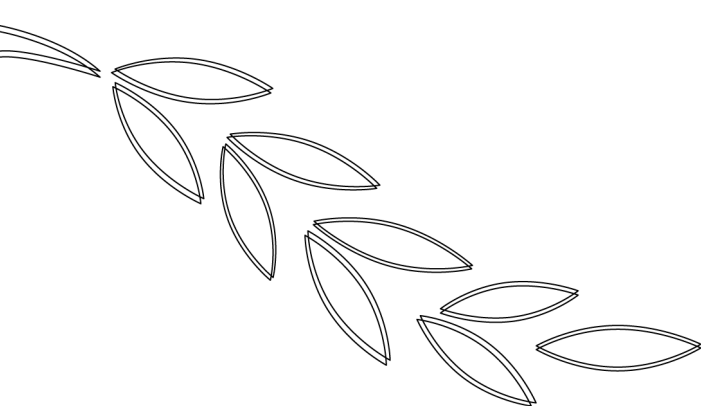
- There were no environmental, human rights, and/or gender equality issues concerning the Project. However, in the processes of the fellow selection and providing IP phones, there was no evidence of considering gender equality issue. This can be improved in other project which might be followed.



2. Overall Grade

- Overall, the Project received 8 out of 12 points, and was evaluated as "partly successful," as shown in the table below.

Grade	Relevance	Effectiveness/Impact	Efficiency	Sustainability	Overall
Very Successful	3	3	3	3	12
	3	3	2	3	11
	3	2	3	3	11
	2	3	3	3	11
	Relevance	Effectiveness/Impact	Efficiency	Sustainability	Overall
Successful	3	3	2	2	10
	3	2	3	2	10
	2	3	3	2	10
	3	2	3	1	9
	3	2	2	2	9
	2	3	3	1	9
	2	3	1	3	9
	2	2	3	2	9
	Relevance	Effectiveness/Impact	Efficiency	Sustainability	Overall
Partly Successful	3	2	2	1	8
	3	2	1	2	8
	3	2	1	2	8
	3	3	1	1	8
	2	2	3	1	8
	2	2	2	2	8
	2	3	1	2	8
	3	2	1	1	7
	3	2	1	1	7
	2	2	2	1	7
	2	3	1	1	7
		Relevance	Effectiveness/Impact	Efficiency	Sustainability
insufficient	2	2	1	-	5
	3	1	-	-	4
	2	1	-	-	3



V . Implications and Suggestions

1. Implications of the Ex-post Evaluation
2. Policy Recommendations



Implications and Suggestions



1. Implications of the Ex-post Evaluation

- The Project was meaningful because the government of Paraguay had high desire for modernizing its administrative information and communication network.
 - However there were some problems limiting the benefits of the Project such as failure of using groupware, lack of effective management for sustainable outcomes, lack of ownership of the recipient country and so on.

- With this ex-post evaluation, we can draw the following three implications.

A. Importance of Political Circumstance of the Recipient Country

- Paraguay is a country with a five-year, single-term presidential system and an actual spoils system in public personnel management. Therefore most high-ranking public officials are being replaced every five years when new government comes in, which incurs difficulties in continued outcomes of any long-term project.
 - During the year 2007-2008, while the project was being conducted, the government changed after the Presidential election. Due to this change, many officials in charge of the Project were replaced were changed without appropriate hand-over processes. In fact, most of personnel

changes are being made over night.

- As the Lugo government gained power after 61 years of the ruling Colorado Party (or the Red Party), the Project was placed in the middle of the governmental changes.
- This resulted in the change of Project counterpart from CPMAP to UTMAP. UTMAP, however, lacked of human and financial resources necessary to play the role of effective counterpart for the Project.
- The weakness and low status of UTMAP within the government of Paraguay were the main reasons for the lack of ICT leadership, which was required to increase effectiveness and impact of the Project. For example, the groupware system was complete ignored by the two ministries partly because UTMAP did not have enough political power and influence as the ICT policy control tower.
- This requires necessity of changes in Paraguayan ICT governance. However this change should be made by Paraguay itself.³⁾

B. Importance of Legal and Institutional Preparation

- Paraguay made legal ground for upgrading the administrative communication network by a Presidential decree. Presidential decree, however, would lose its effectiveness when new President comes in. Though the RMSP upgrading was not negatively affected by the weak legal ground, both legal and institutional preparation were insufficient in activating the groupware system.
 - During the project, no legal grounds were made for electronic document and electronic payment system in Paraguay.
 - Currently Paraguay uses the electronic authentication system by using user ID and password to identify oneself.
 - It is necessary to establish a system as a bill of e-Signature passed the

3) After evaluating the result, reorganization of governance into SENATIC took place. For more information, refer to the related reference.

parliament in 2009 and detailed plans for each field are also being required. In 2009, the Committee for Information and Communication in the House of Representatives proposed and passed a bill on e-Signature and e-Document. Later the bill was revised and passed on the Senate. This law takes effect since the second half of 2013.

- With the development of informatization, necessity of legal effectiveness of e-Signature is being recognized by the government of Paraguay. As a result, regulations on e-Document, e-Signature, and e-Authentication were included in the law. According to the Article 38 of the law, the Ministry of Industry and Commerce is in charge of e-Authentication.
- Therefore without preparing proper legal and institutional grounds for e-Document and/or e-Signature, there have to be limitations in using the e-Document delivery system or e-Payment through groupware.

C. Importance of Establishing ICT Governance

- In case of promoting a project which relates several authorities, it is important to designate a key organization as a control tower to avoid unnecessary conflicts among related authorities. Usually, the role of control tower would be better to be assume by an organization with financial and technical capabilities. In Paraguay, it is the Ministry of Finance, which is suitable to play the role of an ICT control tower. But as of now Ministry of Finance did not play such a key role, while UTMAR did not have power and influence to play such a role.
- This implies that the government of Paraguay need a big change in ICT governance that has to be done by itself.
- Establishing the organization that can generalize the important and urgent ICT matters such as establishing the ICT policy, constructing the e-Government and consumer protection center of IT field is urgently needed.

- UTMAR organized by the Presidential decree, has resulted little achievement because of the lack of a proper legal basis. During this ex-post evaluation, a new government was established in Aug 15, 2013, and it was announced that a new department called SENATIC (National Secretariat of Information Technology and Communication) will be created, into which UTMAR will be merged. SENATIC is expected to serve as a general policy division representing the central government, which will result a change in ICT policy promotion system.
- However it is hard to tell at this time whether the central power of ICT policymaking will move from the Ministry of Finance to SENATIC.



2. Policy Recommendations

A. Basic Directions for Improving e-Government ODA Performance

- 1) Increasing participations of the e-Government policy experts
 - Implementing ODA projects consists of several phases: initiating the project, consulting with the recipient country, validity study, confirming and contracting the project, implementation, evaluating, and ex-post evaluation phases.
 - In most e-Government ODA project so far, technology aspects have dominated the process considering the professionalism of information and communication technology. However, not a single project was negatively evaluated because of the lack of technical expertises.
 - The primary reason that caused problems in implementation processes and/or in sustainable outcomes of the project, in spite of successful performance of project, was the lack of adequate consideration of political variables and other variables on policy environment and/or cultural variables.
 - Thus it is highly recommended to involve policy experts on e-Government who are familiar with political variables from the very beginning of the project and offer political advices including legal issues.
 - The Paraguayan case is a typical case in this regard. The Project that was evaluated in this report demonstrates that the effectiveness of the whole Project critically affected by political variables and policy environment of Paraguay.

- Although it has prepared an ICT Masterplan 2009 and tried to establish government internet data center with ODA from KOICA, they were not fulfilled mainly because of the lack of legal and institutional preparations prior to implement such projects.
 - A main reason for IP phones not being actively used is also organizational culture. In fact, IP phones were mainly distributed to high-ranking officials such as the minister and vice-minister, rather than working-level officials who are going to use them actively. Low status of UTMAP also contributed to the low usage of IP phones as well.
 - Aside from the lack of analysing the demands of the recipient country, conflict between the Ministry of Finance and Ministry of Industry and Commerce, shifting political power and replacement of officials all caused groupware not being used from the beginning.
- In any case, it proves that policy experts should be involved in the project, considering the fact that there is no case that insufficiency or limitation of technological aspect affected the result of e-Government ODA projects.

2) Introducing incentive systems to maximize the ownership of the recipient country.

- Ever since the Paris declaration in 2005, it has been emphasized that strengthening the recipient country's ownership is essential for maximizing the aid effectiveness. The Project evaluated in this report is a typical example that shows how the lack of ownership negatively affected the ineffectiveness of aid projects.
- In case of the RMSP upgrading which is considered to the highest achievement, it shows that Ministry of Education and Ministry of Agriculture have rented 2Mbps from a local service provider for over 2 years because they were not able to gain financial support to connect

directly to RMSP network after they moved to other locations.

- In addition, the Ministry of Agriculture which received 25 internet phones from VoIP project and utilized very effectively at first. But after moving to other building, VoIP were no longer being used because they were not connected to RMSP. This occurred because the Ministry could not fix necessary budget to connect to the RMSP network.
- The case of Paraguay teaches us that the incentive mechanism to connect the performance of the former project to the follow-up project may result in better effectiveness in ODA project.
 - If the ICT master plan in 2011 and follow-up managements in 2009 and 2013 were related to the willingness to take care of the former Project by the recipient country, it would increase the effectiveness and impact of the Project. It is also possible that the recipient country may try to improve the effectiveness and thus obtain more ODA projects.

B. Suggestions for Improving Performance

- In general, ODA projects were being discussed by the donor country offering the project contents rather than considering the recipient country's policy priorities. When the recipient country requests certain ODA projects, it is quite often to be changed in the process of discussion between donor and recipient countries.
- In the case of Paraguay, the originally requested project was to advance the communication network of 17 local governments of Paraguay. However this changed into advancing the communication network of 10 central ministries. No clear reason for this change was presented through interviews or literature reviews. There should be an analysis of demand appropriate from the early stage of the project planning.

- In the validity study phase, compulsory comprehensive reviews of the recipient country's technical, economical and political validities should be required. To increase aid effectiveness, political supports for the project need to be fixed, and any legal and institutional amendments has to be checked and preferably enacted before the completion of the project.

- At the contract phase, technical requirements for performance management and ex-post management. Considering the spoils system which is prevalent in most Latin American countries, detailed job descriptions on the specific positions should be provided in order to maintain quality people who are in charge of the project maintenance.

- When there are changes of governments, detailed hand-over processes have to be provided, and those who are in charge of the ODA project and/or its maintenance should be reported to the local KOICA office.
 - It may be difficult to monitor changes in personnel frequently, but the local KOICA office should contact its counterpart and monitor the personnel changes when there is a change of government.
 - We also recommend that detailed performance management plan has to be included in the contract, in which the roles of the recipient country has to be clearly described. Key performance indicators should be set and local KOICA office should monitor the outcomes of them year by year.

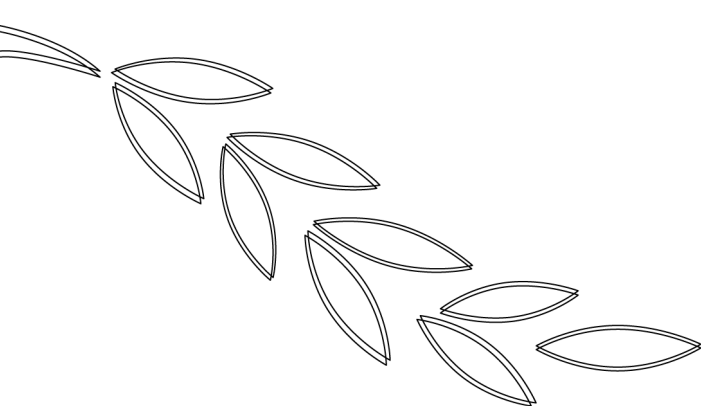
- At the implementation phase, local KOICA office and PMC should implement the project in close cooperation with responsible partners of the recipient country.
 - It is important to intensify the training program of technical experts so that technical manpower to manage and maintain the provided systems should be supplied locally.
 - To accomplish this, the project period should be extended longer than the

current level. In addition, the duration of invited fellowship and training program should be extended to the level which enables independent management and maintenance.

- After the completion of the project, the recipient organization should be required to submit a yearly evaluation report to the local KOICA office. In the report, the outcomes of key performance indicators and any further assistance needed to improve sustainability of the project need to be included.
 - Depending upon the yearly evaluation report submitted by the recipient country's agency to the local KOICA office, further maintenance programs such as dispatching ICT voluntary service units and invitation of more fellows can be followed.
 - Eventually, by connecting the result of the project to up coming project such as e-Government ODA project, so that recipient country should intensively participate in follow-up management and make efforts to improve performance to gain incentives.

C. Limitations of Evaluation

- As shown above, the Project had been strongly affected by the spoils system in Paraguay. When we visited Paraguay for the ex-post evaluation, much or those who actually involved in the Project already left the government. Thus our interviews were undertaken to the limited number of people, which may include some biased opinions.



Appendix



Appendix



1. VoIP (Voice over Internet Protocol) System Report

ORDER	DEPARTMENT	CURRENT SITUATION	CAUSES OF NON-PERFORMANCE	OBSERVATION
1	Presidency of the Republic	The service is not working now. It must be reconfigured.	The original administrator was changed many years ago. They have not a network administrator. We try to reactivate the service, but it was not possible.	There is no original administrator. (The fellow no longer works there)
2	Ministry of Interior	The service is not working now. Some phones must be reconfigured.	*****	There is no original administrator. (The fellow no longer works there)
3	Ministry of Foreign Affairs	The service is not working now. It must be reconfigured.	The Ministry migrated to a new IP PBX, we are waiting to make their configurations and link with our IP-PBX.	It keeps original administrator (Fellow).
4	Ministry of Education and Culture	The service is not working now. The phones must be activate.	One building caught fire so they had to move. Partially reactivated the service but do not currently have local administrator.	There is no original administrator. (The fellow no longer works there)

ORDER	DEPARTMENT	CURRENT SITUATION	CAUSES OF NON-PERFORMANCE	OBSERVATION
5	Ministry of Finance	In all departments of the Ministry working properly links and terminals.	*****	It keeps original administrator (Fellow).
6	National Custom Direction - Ministry of Finance	In all Customs agencies operate properly.	*****	It keeps original administrator (Fellow).
7	Ministry of Industry and Commerce			
8	Ministry of Public Work and Communications	The work seamlessly IP phones in the Central Building and its dependencies linked through VPNs.	*****	There is no original administrator. (The fellow no longer works there)
9	Ministry of Agriculture	The service is not working now.	The Ministry moved of building, they could not make settings for the reactivation of IP telephony service.	There is no original administrator. (The fellow no longer works there)
10	Ministry of Labor and Justice	The service is works partially.	The service worked smoothly, currently with out local administrator and some of the phones are misconfigured.	There is no original administrator. (The fellow no longer works there)

ORDER	DEPARTMENT	CURRENT SITUATION	CAUSES OF NON-PERFORMANCE	OBSERVATION
11	Ministry of Health	The service is not working now.	They had problems with the electrical system, several plates were burned from their telephone exchange (the UTMAP repaired some but then returned to fail again). Therefore stumbled drawbacks to reactivate the service.	There is no original administrator. (The fellow no longer works there)
12	Ministry of Defence	Some phones were set again and the service was reactivated after the local manager was reassigned to another area. Currently the service works correctly.	*****	There is no original administrator. (The fellow no longer works there)
13	UTMAP (CPMAP)	The service runs smoothly. In its place are the IP telephony servers.	*****	It keeps a CIO (Fellow).
14	National Forestry Institute-INFO NA	Was subsequently implemented.		
15	National Direction of Public Procurement	Was subsequently implemented.		



2. Groupware Status Report

UTMAP Self evaluation report (Written by fellowship fellows and trainees)

Development of Web Based Groupware Report MS. Katiana Leguizamón

It is important to mention that I worked for the UTMAP in the period of January to July 2008 approximately, then I stopped to work until 2010, so I do not know what happened later.

1. Background

The project "Modernization of Communication and Information System of Paraguay" developed in the period 2007/2008 and coordinated by the Presidential Council for Modernization of Public Administration (CPMAP), had as its main objectives to improve the connectivity of the Executive Branch through IP telephony and implementation of a software called e-Groupware.

This software was developed by a Korean company (PMC) and donated by the KOICA to the Paraguayan government, it consisted of a set of tools (and processes document manager, calendar, address book, wiki, etc..) That was intended to facilitate the ministerial working.

The implementation of e-Groupware as a pilot project, was conducted initially between the Ministry of Finance (MH) and the Ministry of Industry and Commerce (MIC). If the results were successful on this first stage, it would be implemented in other ministries.

An important point of the implementation process was the training developed in the Republic of Korea where 4 technicians were trained in the use of the tool.

Trained technicians were: Blas Delgado (MIC), Manuel Brítez (MH), Orlando Olazar (CPMAP), and Katiana Leguizamón (CPMAP)

The software was installed and put into production by Korean experts sent by KOICA to Paraguay, in the place that UTMAP adequate for this porpoise with the participation of technicians who had been trained in Korea.

2. Status of e-Groupware

After installing the e-Groupware several tests were conducted at the Ministry of Finance and the Ministry of Industry and Trade, which was intended to verify and validate the benefits for the Government would effectively implement a tool of this kind.

While in principle both institutions showed much interest in the implementation of the system, unanticipated events that implementation did not succeed.

Some points to mention are: 1) Lack of support from the authorities, 2) The tool was not fully translated into Spanish, 3) Lack of interest on the part of officials who should operate the system, and 4) Several of the technicians who were trained were reassigned to other areas.

These factors among others political adversely affected the implementation process.

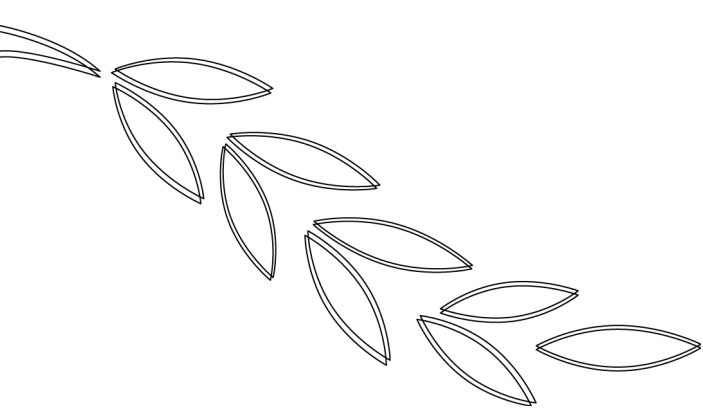


3. Paraguayan e-Government Project Evaluation Matrix

Valuation Criteria	Evaluation Range	Evaluation Questionnaires	Survey Method
Relevance	Related Issue	<ul style="list-style-type: none"> Did establishing a communications network and Groupware reach its goal? Did system establishment set the partial requirement Did the e-Government Infrastructure improve through the communication network? 	inquiry interview survey
	Information Technology	<ul style="list-style-type: none"> Did the list and quantity of the equipment/system appropriate for the goal? Did the equipment/system operate properly? Did the equipment/system composed properly? 	inquiry interview survey
	Human Resource	<ul style="list-style-type: none"> Did the contents of invited training program appropriate for the goal and purpose of the project? Did the capacity of the trainee appropriate for the job performance? 	interview survey
	Human Resource	<ul style="list-style-type: none"> Did dispatching the expert appropriate for the goal of the project? Did ability of dispatched expert appropriate for job performance? 	interview survey
	Related Issue	<ul style="list-style-type: none"> Did supporting the business process for recipient country appropriate for the goal of the project? Did business process time appropriate for recipient country? Did supporting budget of business process appropriate for recipient country? Did supporting man power appropriate for recipient country? 	interview survey
Efficiency	Process	<ul style="list-style-type: none"> Did establishing time of system and communication network efficient? Did establishing budget of system and communication network efficient? Did establishing labor of system and communication network efficient? 	data-research interview survey
	Process	<ul style="list-style-type: none"> Did invested budget of providing equipment/system efficient? Did process of providing equipment/system efficient? 	data-research interview

	Process	<ul style="list-style-type: none"> • Did the time of invited training program efficient? • Did the budget of invited training program efficient? • Did the man power organization of invited training program efficient? 	data-research interview survey
	Process	<ul style="list-style-type: none"> • Did the time of dispatching expert efficient? • Did the budget of dispatching expert efficient? • Did the man power of dispatching expert efficient? 	data-research interview survey
	Process	<ul style="list-style-type: none"> • Did the process of supporting the project efficient for recipient country? • Did the government's will of establishing e-Government reinforced? • Did the cooperation intimate among 10 government department? 	interview survey
Effectiveness	Related Issue	<ul style="list-style-type: none"> • Did the establishment of communication network well designed for use and result? • Did the communication cost reduced among 10 government department by using VoIP? • Did the time of task process reduced through groupware? 	interview survey
	Information Technology	<ul style="list-style-type: none"> • Did outcome of providing equipment/system appeared high? • Is the usage rate of groupware and VoIP increasing? 	interview survey
	Human Resource	<ul style="list-style-type: none"> • Did the outcome of invited training program appeared high? 	interview survey
	Human Resource	<ul style="list-style-type: none"> • Did the outcome of dispatching expert appeared high? 	interview survey
	Process	<ul style="list-style-type: none"> • Did the effectiveness of supporting recipient country's business process appeared high? 	interview survey
Impact	Mission	<ul style="list-style-type: none"> • Is the information-oriented business spreading in Paraguay? • Does other government departments planning to use the groupware system? 	inquiry interview
	Mission	<ul style="list-style-type: none"> • Is purchase of information-oriented equipment increasing in Paraguay? 	interview survey
	Customer	<ul style="list-style-type: none"> • Did the participant of invited training increasing in Paraguay? 	interview survey
	Customer	<ul style="list-style-type: none"> • Does the related field experts increasing in Paraguay? 	interview survey

Sustainability	Mission	<ul style="list-style-type: none"> Did the legislation and operation guideline that supports electronic document enacted? Did the system-communication network designed conveniently for maintenance control? 	data-research interview
	Mission	<ul style="list-style-type: none"> Did the equipment/system provided conveniently for maintenance control? 	interview survey
	Customer	<ul style="list-style-type: none"> Was there any follow-up education training for invited training participant? 	interview survey
	Customer	<ul style="list-style-type: none"> Did the self-rearing the expert took place after dispatching the expert? 	interview survey
	Mission	<ul style="list-style-type: none"> Was the self-maintenance control of the business product possible? 	interview survey
Cross-cutting Issue	Related Resource	<ul style="list-style-type: none"> Was the system-communication network established considering the gender factor? Was the system-communication network established considering the environmental factor? Was the system-communication network established considering the minority factor? 	inquiry interview
	Information Technology	<ul style="list-style-type: none"> Was equipment/system provided considering the gender factor? Was equipment/system provided considering the environmental factor? Was equipment/system provided considering the minority factor? 	inquiry interview
	Human Resource	<ul style="list-style-type: none"> Was the invited training participant selected considering the gender factor? Was the invited training participant selected considering the environmental factor? Was the invited training participant selected considering the minority factor? 	interview survey
	Human Resource	<ul style="list-style-type: none"> Did the dispatched expert performed considering the gender factor? Did the dispatched expert performed considering the environmental factor? Did the dispatched expert performed considering the minority factor? 	interview survey
	Human Resource	<ul style="list-style-type: none"> Did the project supported considering the gender factor? Did the project supported considering the environmental factor? Did the project supported considering the minority factor? 	interview survey



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Communication and Information System of the State Ministries of the
Republic of Paraguay**

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Published by the Korea International Cooperation Agency (KOICA)

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Gyeonggi-do, Korea 461-833

C.P.O Box 2545

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Website: <http://www.koica.go.kr>

ISBN : 978-89-6469-217-2 93320