

Ex-Post Project Evaluation 2010: Package III-7 (Morocco)

October 2011

JAPAN INTERNATIONAL COOPERATION AGENCY

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Preface

Ex-post evaluation of ODA projects has been in place since 1975 and since then the coverage of evaluation has expanded. Japan's ODA charter revised in 2003 shows Japan's commitment to ODA evaluation, clearly stating under the section "Enhancement of Evaluation" that in order to measure, analyze and objectively evaluate the outcome of ODA, third-party evaluations conducted by experts will be enhanced.

This volume shows the results of the ex-post evaluation of ODA Loan projects that were mainly completed in fiscal year 2008, and Technical Cooperation projects and Grant Aid projects, most of which project cost exceeds 1 billion JPY, that were mainly completed in fiscal year 2007. The ex-post evaluation was entrusted to external evaluators to ensure objective analysis of the projects' effects and to draw lessons and recommendations to be utilized in similar projects.

The lessons and recommendations drawn from these evaluations will be shared with JICA's stakeholders in order to improve the quality of ODA projects.

Lastly, deep appreciation is given to those who have cooperated and supported the creation of this volume of evaluations.

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Masato Watanabe
Vice President
Japan International Cooperation Agency (JICA)

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Kingdom of Morocco

Ex-Post Evaluation of Japanese Technical Cooperation Project
“The Technical Cooperation Project for Improvement of Maternal Healthcare in the
Rural Area”

(“Le Projet d’amélioration des soins de santé maternelle en milieu rural”)

External Evaluators: Hisami NAKAMURA & Junko FUJIWARA, OPMAC Corporation

0. Summary

Sufficient consistency with the needs in rural areas of Morocco for the improvement of maternal care ensured a high relevancy of this Project. Although the Project managed to produce the expected outputs through activities in the two Pilot Provinces, insufficient inputs slightly reduced its efficiency. On the other hand, the approach to establish practical models brought about remarkable effectiveness and impacts as well as high sustainability. In particular, the impact of Mother’s Classes introduced with JICA support related to this Project deserves special mention.

In light of the above, this project is evaluated to be highly satisfactory.

1. Project Description



Project Locations



Mother and Baby Visiting Health Center
for Health Checkups (Ifrane)

1.1 Background

In the Kingdom of Morocco, the reduction of economic and social gaps between urban and rural areas has been a crucial issue for national development. In the field of maternal healthcare, there have been considerable regional disparities in extensions of service which has lead to disparities in health status of pregnant and parturient women and to maternal mortality.

Japan started cooperation in the field of maternal healthcare in Morocco in the fiscal year of 2001 and implemented a grant aid project, “The Project for Improvement of Maternal Healthcare in Rural Areas” which aimed at improving facilities and equipment for maternal healthcare in the three regions of Fès-Boulmane, Méknès-Tafilalet and Guelmin-Es-Smara. After that, the Japan International Cooperation Agency (JICA) conducted two training courses in Japan for Moroccan trainees: “Improvement of Maternal and Child Healthcare in Rural Areas” (from FY 2002) and “Local Health Administration” (from FY 2004).

With this background, the government of Morocco requested from Japan technical cooperation to improve skills in maternal healthcare in rural areas. Following this request, JICA conducted a preliminary study in July 2004 and initiated the technical cooperation project

“The Project for Improvement of Maternal Healthcare in Rural Area” in the two pilot provinces of Séfrou (Fès-Boulmane) and Ifrane (Mékhnès-Tafilalet).

1.2 Project Outline

Overall Goal		<ol style="list-style-type: none"> 1. Health conditions of women in reproductive age in rural area are improved in the 3 target regions. 2. Results of the Project are diffused in the 3 target regions.
Project Purpose		Appropriate health and medical services are provided to women in reproductive age in rural areas of the pilot provinces.
Outputs	Output 1	Continuous Education / Training system for health staff in order to improve knowledge and skills on maternal health are established in the pilot provinces.
	Output 2	Operational planning capacity with relation to maternal health of provincial health service delegations in rural areas is reinforced.
	Output 3	Programs for Information Education and Communication (IEC) activities for maternal care in rural areas are reinforced.
	Output 4	Strategy for mobile clinics for maternal health in rural areas is reinforced in the pilot provinces.
Inputs		<p>Japanese Side:</p> <ol style="list-style-type: none"> 1. Experts 5 experts for the long-term, 9 experts for the short-term 2. 48 Trainees received 3. None for Third-County Training Programs 4. Equipment: 37.84 million yen 5. Local Cost: 71.56 million yen 6. Others (incl. dispatch of related missions): 13.67 million yen <p>Morocco Side:</p> <ol style="list-style-type: none"> 1. 36 Counterparts 2. Project office space in Séfrou Provincial Health Service Delegation and office space for Japanese experts in the Ministry of Health 3. Salary and per diem for duty trips by counterpart personnel, fuel costs for mobile clinic vehicles, and a part of costs for continuous education training at provincial hospitals
Total Cost		365.98 million yen
Period of Cooperation		November 2004 – November 2007
Implementing Agency		Population Department of Ministry of Health, Regional Health Service Delegations of Fès-Boulmane, Méknès-Tafilalet and Guelmim-Es-Smara, Provincial Health Service Delegation of Séfrou and Ifrane
Cooperation Agency in Japan		The Japanese Red Cross Kyushu International College of Nursing [Other Cooperation Agency] Relevant institutions in the City of Munakata (receiving the Country Training Program)

Related Projects	<p>[Grant Aid] The Project of Improvement of Maternal Healthcare in Rural Areas (1/2 and 2/2)</p> <p>[Dispatch of Experts] Advisor to the Ministry of Health, Expert in Improvement of Maternal and Child Care in Rural Areas, Expert for supporting implementation of Mothers' Classes, and so on.</p> <p>[Training] "The project for the Improvement of Maternal and Child Health Care at Errachidia Province" (County Focused Training), "Maternal and Infant Health Support" (Third Country Training), "Improvement of Maternal and Child Health Care" (Country Training)</p> <p>[JOCV] Midwives for supporting the implementation of Mothers' Classes</p> <p>[Other donors] UNFPA: Support for "Health Cards for Women" (Carnet de Santé de la Femme") and for training</p>
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1.3 Outline of the Terminal Evaluation

1.3.1 Achievement of the Overall Goal

In terms of the Overall Goal 1, it was pointed out that it was difficult to statistically verify any reduction in maternal mortality in rural areas due to the issue of the health statistics system in Morocco. In the case where a pregnant women living in a rural area is transferred to a provincial or regional hospital and then dies at that hospital, the death is reported as "maternal mortality in an urban area". On the other hand, it was expected that the Overall Goal 2 would be achieved because the Project was already in a preparatory stage for the diffusion of the results of the Project.

1.3.2 Achievement of Project Purpose

There are three verifiable indicators for the Project Purpose. Although Indicator 1, the proportion of postnatal checkups, was achieved, other indicators missed their targets. In terms of Indicator 2, the proportion of diagnostic and care of high risk pregnancy, performance before and after the Project was difficult to assess because the definition of "high risk pregnancy" was changed during the Project.

1.3.3 Recommendations

The terminal evaluation report proposed the following recommendations: "further improvement of maternal healthcare in the pilot provinces" and "diffusion of the Project results".

The former of the above two included enhancement of the management of the Provincial Health Service Delegations in the pilot provinces, reinforcement of the implementation arrangements for the continuous education for midwives and nurses, the strengthening of human resource development and other activities related to maternal healthcare. This was achieved through the strengthening of networks among ex-trainees who participated in training in Japan and an increased public awareness of maternal healthcare through enhancing collaboration with other sectors, including community development and education. In addition, the report recommended follow-up support by JICA after completion of the Project.

The latter of the two included nationwide extension of the model of continuous education. Also, the implementation of third country training in Morocco was recommended in order to extend the Project results to other Western African countries since human resources qualified in maternal and child care were developed through the Project.

2. Outline of the Evaluation Study

2.1 External Evaluator

Hisami NAKAMURA, OPMAC Cooperation

Junko FUJIWARA, OPMAC Cooperation

2.2 Duration of Evaluation Study

The Evaluation Study was carried out as follows:

Duration of the Study: November, 2010 – October, 2011

Duration of the Field Study: March 6th – March 25th, 2011 and June 19th – June 25th, 2011

2.3 Constraints during the Evaluation Study

[Appropriateness of Indicators and Availability of Data]

For verifying the effectiveness of the Project, it was necessary to assess the achievement of indicators for outputs and project purpose as defined in the Project Design Matrix (PDM), which shows the project outline. However, in the PDM for this Project, there were indicators with inadequate logic as well as indicators with ambiguous definitions. In addition, for some indicators, there were difficulties in collecting adequate data during project implementation. Due to these factors, it was impossible to clearly mention the attainment level or to make predictions about some indicators in the terminal evaluation report. The ex-post evaluation team therefore reviewed and made suppositions about the achievement of the Outputs and the Project Purpose of the Project at the time of the ex-post evaluation after first revising or redefining those indicators, and setting additional or alternative indicators according to consultation with persons involved in the Project.

[Accessibility to the beneficiaries in the target areas of the Project]

Theoretically, for an impact analysis of the Project, it was necessary to assess the impacts of the Project on pregnant and parturient women in the pilot provinces and the target regions, these being the expected beneficiaries of the Project. However, there were physical difficulties in conducting a beneficiary survey with a statistically significant number of samples targeting pregnant and parturient women as they were scattered in widespread rural areas. Therefore, the ex-post evaluation examined the impacts of the Project on the target beneficiaries by analyzing statistical data from the Ministry of Health and the Provincial Health Service Delegations in the pilot provinces as well as qualitative data collected through interviews with pregnant and parturient women who were visiting health institutions at the time when the site visit of the ex-post evaluation team was taking place.

3. Results of the Evaluation (Overall Rating: A¹)

3.1 Relevance (Rating:③²)

3.1.1 Relevance with the Development Plan of Morocco

The Health Action Plan 2003-07 (*Plan d'action santé*, 2003-2007), the key policy document of the Ministry of Health, addressed the enhancement of the “Program for Maternity without Risk” (*Programme de la Maternité sans Risque*) in order to achieve a reduction in maternal mortality as one policy priority at the time of planning for the Project. The Action Plan addressed issues including the improvement of gaps in access to health services between urban and rural areas, the development of health and medical staff and increasing organizational strength. These issues remained a priority in the national health plan until the completion of

¹ A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

² ③: High, ②: Fair, ①: Low

the Project.

During implementation of the Project, the King of Morocco announced the “National Initiative for Human Development”(INDH: *Initiative Nationale pour le Développement Humain*), which included the “Poverty Reduction Program in Rural Areas.” In this program, the reduction of maternal and infant and child mortality was the first priority for the health sector. In addition, the “Plan for the Reduction of Maternal Mortality in the framework of INDH” covered the two pilot provinces of the Project, Séfrou and Ifrane, as target areas.

This Project was therefore consistent with the Morocco’s national health policy for the reduction of maternal mortality at the both the times of the ex-ante evaluation and project completion.

3.1.2 Relevance with the Development Needs of Morocco

At country level, the maternal mortality rate of Morocco did not change: 228 per 100,000 live births in 1997³ and 227 per 100,000 live births in 2004⁴. On the other hand, the maternal mortality rate in rural areas decreased from 307 to 267 in the same period, though it was still much higher than the mortality rate in urban areas (186 in 2004). Also, there was a considerable gap between urban and rural areas in access to health services. According to a report by the Ministry of Health, the institutional delivery rate in rural areas was only 30% while more than 80% of deliveries were at medical institutions in urban areas.

The target group of the Project was women of reproductive age in the pilot provinces. The size of the target population in Séfrou was 68,000 in 2004 and 75,000 in 2007. Ifrane had a target population of 41,000 in 2003 and 42,000 in 2007. At the provincial level, Séfrou had 5,714 estimated number of births in 2004 and 5,591 in 2008, while Ifran had 3,043 in 2004 and 2,934 in 2008. As of 2003, the institutional delivery rate was 59% in Séfrou and 55% in Ifrane, both of which were slightly below the national average of 60%.

Considering this situation, the Project was consistent with the need for improvement of maternal healthcare not only in the Pilot Provinces but also in the country as a whole.

In addition, at the time of ex-ante evaluation of the Project, a Project Cycle Management (PCM) workshop was held for the planning and designing of the Project with the participation of persons concerned from the Department of Population (Ministry of Health) as well as health and medical staff in the target provinces. Through this workshop, it was recognized that health and medical staff, including midwives and nurses providing services, understood the problems of health service for pregnant and parturient women in rural areas. Also, the workshop enabled the stakeholders of the Project to analyze and share the necessity for the capacity development of health and medical staff. This planning process ensured the relevance of the Project.

Furthermore, the approach taken by the Project was appropriate and remained adequate during project implementation. It was planned that the Project would implement activities in the two Pilot Provinces of Séfrou and Ifrane which had a substantial need for the enhancement of the referral system for maternal care in rural areas as well as for access to tertiary medical institutions and human resources in metropolitan areas, such as Rabat, the capital city of Morocco, and the regional capitals.

3.1.3 Relevance with Japan’s ODA Policy

At the policy dialogue for economic cooperation between Japan and Morocco in July 1999, assistance in the field of local development for the improvement of gaps between urban and rural areas and poverty reduction was held as one of the five priority areas for the Japanese ODA to Morocco. After this, Japan clarified its commitment to support INDH and added assistance for social development to the priority areas without making any changes in the basic policy.

³ Enquête Nationale sur la Santé de la Mère et de l’Enfant (1997)

⁴ EPSF: Enquête sur la Population et la Santé Familiale

In the JICA country operation plan for Morocco of 2004, cooperation for the improvement of medical services in rural areas could be seen as part of the assistance for underdeveloped areas in the country, according to the priorities of the Japanese ODA to Morocco. The JICA operation plan in 2007 also targeted the improvement of health services in the priority assistance field, “improvement of social and regional disparities.”

Hence, the Project, aiming at the improvement of maternal healthcare in rural areas, was consistent with Japanese ODA policy.

This project was highly relevant to Morocco’s health policy to reducing maternal mortality, their development need for maternal health care in rural areas, as well as to Japan’s ODA policy, therefore its relevance is high.

3.2 Effectiveness (Rating:③)⁵

3.2.1 Effectiveness

To measure effectiveness is to analyze the achievement of the outputs and project purpose and the contribution of outputs in achieving the project purpose at project completion. In this ex-post evaluation, however, the outputs by the Project during the period from project completion to the ex-post evaluation were analyzed. This was because after the completion of the project it could not be verified whether or not the systems which had been established as one of outputs of the Project, had been effectively functioning. Also, in order to verify impacts of the Project, the achievement of the outputs and the project purpose at the time of the ex-post evaluation was examined, and in addition a review was made of the achievements at the time of project completion.

3.2.1.1 Project Outputs

1) Output 1

Continuous Education / Training system for health staff in order to improve knowledge and skills for maternal health are established in the Pilot Provinces.
[Indicator 1] By the completion of the Project, coverage of the continuous education program for target health staff (the number of actual participants / the number of planned participants) will be 100% in each Pilot Province.
[Indicator 2] By the completion of the Project, the execution rate of continuous education programs (the number of training programs implemented / the number planned) will be 100% in each Pilot Province.

The terminal evaluation report judged that the target for continuous education training programs at provincial level had been achieved. It is verified by the ex-post evaluation that the Output 1 has been mostly achieved.

According to interviews with people involved at the time of ex-post evaluation, the target for continuous education aimed at by the Project was midwives and nurses in charge of maternal care who had less than 3 years experience. This ex-post evaluation thus had to make a judgment on whether the establishment of “the continuous education system” aimed at by the Project was based on the actual performance of continuous education training for newly recruited midwives and nurses after the completion of the Project.

In Séfrou, continuous education training has been continuously implemented at almost same scale as that implemented by the Project (See Table 1). On the other hand, the Provincial Health Service Delegation of Ifrane only implemented three courses: Prenatal Checkups (CPN: Consultation Pre-Natale), Postnatal Checkups (CPoN: Consultation Post-Natale) and Family

⁵ Evaluation of effectiveness is based on comprehensive judgment including the impacts mentioned in Section 3.3.

Planning (PF: Planification Familiale). The execution rate has been less than 30% except in 2009 (See Table 2).

Thus, under the Project, while the Infrane Provincial Health Service Delegation could only implement continuous education at a minimum level, the Sefrou Delegation established a system which can be used as an applicable model for other provinces in the target regions. In addition, the Project pursued not only the implementation of training programs but also the improvement of training contents for “the establishment of the continuous education system”. The revision of training contents, which reflected the needs of participants and which is reported in the Project Completion Report, thus contributed to the establishment of the continuous education system.

Table 1: Performance of Continuous Education at Provincial Level in Séfrou

		2005	2006	2007	2008	2009	2010
No. of midwives		30	35	35	39	39	43
No. of midwives with less than 3 year-working experience		16	16	16	10	8	4
No. of training courses	Plan	5	14	9	8	6	13
	Actual	5	14	9	8	6	13
No. of participants in total	Plan	-	-	-	-	-	-
	Actual	99	189	109	130	63	128
No. of participants with less than 3 years working experience	Plan	-	-	-	-	-	-
	Actual	16	16	16	10	8	4

Source: Ministère de la Santé, “Santé en chiffres” (Health Statistics) and data provided by the Séfrou Provincial Health Service Delegation

Table 2: Performance of Continuous Education at Provincial Level in Ifrane

		2005	2006	2007	2008	2009	2010
No. of midwives		32	32	32	51	51	50
No. of midwives with less than 3 years working experience		8	8	8	14	12	8
No. of training courses	Plan	-	12	12	12	12	12
	Actual	-	6	8	8	0	0
No. of participants in total	Plan	102	97	97	32	28	30
	Actual	32	18	21	22	42	20
No. of participants with less than 3 years working experience	Plan	0	18	16	16	12	0
	Actual	0	4	6	7	6	0

Source: Ministère de la Santé, “Santé en chiffres” (Health Statistics) and data provided by the Ifrane Provincial Health Service Delegation

The activities for Output 1 comprised of participation in continuous education training at national level. Since national level training largely depends on donors’ assistance and as the Ministry of Health selects participants, it is difficult for provincial delegations to send midwives and nurses to train as they plan. However, the Project requested that the Ministry of Health preferentially select midwives and nurses from the Pilot Provinces in order to train them as trainers for training programs at provincial level. As a result, those staff trained through the Project have played the role of trainers in continuous education at provincial level since the completion of the Project. This is a key factor in contributing to the establishment of continuous education at provincial level.

On the other hand, there is a difference in level of achievement of Output 1 between the two Pilot Provinces. The main cause for a lower level of achievement in Ifrane was insufficient activity for the establishment of a continuous education system. While project activities focused on Séfrou where the Project Office was located and the Japanese Long-Term Expert was resident, no Long-Term Expert was resident in Ifrane. That was because of a fewer number of midwives with less than 3 years experience in Ifrane as well as the management capacity of the Ifrane Provincial Delegation. The lower level of inputs in Ifrane resulted in the lower achievement of the Output 1 there.

2) Output 2

Operational planning capacity* of the Provincial Health Service Delegations for maternal health in rural areas is reinforced.
 [Indicator 1] Activity planning and evaluation by the Provincial Health Service Delegations
 [Indicator 2] Budgeting of activities
 [Indicator 3] Implementation of budget

*The operational planning capacity is defined as capacity for planning to implement the three activities of continuous education, IEC activities and mobile clinics.

It is estimated that Output 2 could not attain its target set by the Project as there were some issues still to be improved at the time of the ex-post evaluation.

The terminal evaluation report did not mention the achievement of Output 2. Also, at the time of ex-post evaluation, it was difficult to verify the achievement by using quantitative data. Therefore, this ex-post evaluation made a qualitative analysis based on performance data of activities related to maternal healthcare by the Provincial Delegation, and which were provided by the Provincial Delegation.

In terms of the management capacity of the Séfrou Provincial Delegation, the terminal evaluation report judged that planning, implementation and monitoring for the three major components of the Project had been appropriately conducted. At the time of ex-post evaluation, these were still maintained at a certain level.

On the other hand, the terminal evaluation report pointed out that the Ifrane Provincial Delegation had problems with management. For example, they did not conduct scheduled supervision of the continuous education⁶ for midwives working for health centers in remote areas due to lack of vehicles. They did not have a viewpoint on how to efficiently utilize limited resources, such as the joint implementation of supervision and mobile clinics. Also they did not have the capacity to develop feasible plans or to implement those plans steadily. At the ex-post evaluation, their planning capacity had improved from the time of project completion. However, it had still not reached the target level of the Project and the execution rates for their activities were still low.

Table 3: Operational Planning Capacity of the Provincial Health Service Delegations

Pilot Province	Planning of Activities	Evaluation of Implementation	Budgeting of Activities	Implementation of Budget
Séfrou	Satisfactory	Satisfactory	Satisfactory	n.a.
Ifrane	Satisfactory	Partly Satisfactory	n.a.	Data is only available for mobile clinics

Source: Evaluation team analysis based on data and information provided by the Provincial Health Service Delegations of Séfrou and Ifrane

⁶ Supervision is conducted by the Department of Provincial Mobile Medical Service (SIAAP: Service d'Infrastructure d'Action Ambulatoire Provinciales) in order to check the performance of midwives and nurses working in rural health centers and to give them advice for improvement as a part of continuous education.

3) Output 3

Programs of Information Education and Communication (IEC) activities regarding maternal care in rural areas are reinforced.

[Indicator 1] By the end of the Project, the execution rate for IEC activities (actual / plan) will be 100% in each Pilot Province.

[Indicator 2] By the end of the Project, the proportion of women who have at least one IEC on maternal health will increase in each Pilot Province.

Output 3 was mostly achieved.

The terminal evaluation report did not clearly mention the achievement of Indicator 1 but it did mention that IEC activities had been held on an ad hoc basis when a certain number of pregnant women had come to health centers or mobile clinics. At the time of the ex-post evaluation, it was found that the target for Indicator 1, which was the scheduled and systematic implementation of IEC activities, had not been achieved.

In terms of Indicator 2, the terminal evaluation report pointed out that there was no baseline data to verify the achievement of the Project although the number of women of reproductive age receiving IEC seemed to have increased during the Project period. Inappropriate data collection for Indicator 2 also impeded the verification of its performance. These issues can be attributed to an unclear definition of the IEC activities for the Project.

However, this ex-post evaluation attempted to assume the achievement of Output 3 based on an alternative indicator, the “implementation of standardized Mother’s Classes” as the enhanced IEC activities⁷ as Output 3 can be considered to be ones for maternity (Mother’s Classes) in contributing to the achievement of the Project Purpose. The actual performance of Mother’s Classes in the Pilot Provinces is shown in Table 4.

Table 4: Performance of Mother’s Classes in the Pilot Provinces

Pilot Province	2005		2006		2007	
	No. of Classes held	No. of participants	No. of Classes held	No. of participants	No. of Classes held	No. of participants
Séfrou	-	-	-	-	10	74
Ifrane	-	-	18	1,047	84	1,740

Source: Evaluation team analysis based on data and information provided by the Provincial Health Service Delegations of Séfrou and Ifrane

Note: Mother’s classes were introduced in Séfrou in 2007 and in Ifrane in 2006. At the beginning, mother’s classes were held in provincial hospitals.

The introduction of Mother’s Classes greatly contributed to the reinforcement of IEC activities for pregnant women not only in the Pilot Provinces but also in the entire country. It has also promoted improvements in maternal healthcare, in particular the expansion of prenatal checkups, as mentioned below.

In addition, the Project standardized the contents and methodology of IEC activities related to maternal healthcare which, before the start of the Project, had differed according to practitioner’s abilities and technical level. Furthermore, supervision by the provincial delegations for the standardization of IEC activities during the Project resulted in a “strengthening of IEC activities”.

⁷ The IEC activities for maternal health are categorized into the following types: maternity and family planning.

4) Output 4

Strategy for mobile clinic on maternal health in rural area is reinforced in the Pilot Provinces.

[Indicator 1] The execution rate for Mobile Clinics in the provincial action plans (actual / plan) will be 100% in each Pilot Province.

[Indicator 2] The proportion of pregnant women among the target population who have prenatal checkups at Mobile Clinics will be 100% in each Pilot Province.

Output 4 was mostly achieved.

The performance of Indicator 1 is based on data in the terminal evaluation as there was no data available at the completion of the Project. “Implementation of the standardized of IEC activities” was added to the verifiable indicators for Output 4 because the “Reinforcement of the strategy for mobile clinics” should include improvement in the quality of activities. On the other hand, Indicator 2, shown in PDM, was not considered for Output 4 but instead for the Project Purpose since it was an outcome that resulted from Output 4 and was a part of the Project Purpose.

In terms of Indicator 1, the two Pilot Provinces tried to prepare implementation plans for mobile clinics every three months and to implement them as planned. However, at the time of the terminal evaluation, the execution rate of the Ifrane delegation was only 58% while the Séfrou delegation had an execution rate of 100%. One of the reasons for the low execution rate of Ifrane was a blank period in activities using vehicles for mobile clinics granted by the Project. Also there were external factors which hampered the implementation of mobile clinics in Ifrane such as strikes and snow. However, the insufficient planning and implementation capacity of the Infrane delegation could also have been a key factor in the low execution rate. The lower coverage rate of mobile clinics for pregnant women in rural areas, which was less than 60%, also indicated a limitation in capacity.

On the other hand, standardized contents and the improved quality of mobile clinics set up by the Project contributed to an enhancement in mobile clinic activities and was, to certain extent, a model for the country.

3.2.1.2 Achievement of Project Purpose

Appropriate health and medical services provided to women of reproductive age in rural areas in the Pilot Provinces.

[Indicator 1] The rate of pregnant women having prenatal and postnatal checkups for the estimated number of births will increase by the end of the Project.

(Target) Séfrou: more than 80% for prenatal (at least 3 times that of present) and more than 95% for postnatal

Ifrane: more than 85% for prenatal and more than 95% for postnatal.

[Indicator 2] Diagnostic and care rates for high risk pregnancy by prenatal checkups will be adequate level.

[Indicator 3] The proportion of deliveries attended by qualified health staff will increase by the end of the Project. (No. of deliveries attended by health staff / No. of estimated births)

(Target) Séfrou: more than 70%

Ifrane: more than 70%

The target area of the Project is defined as “rural areas in the Pilot Provinces” in PDM. However, the Project aimed at an improvement in maternal healthcare services not only in rural areas but also in all areas of the Pilot Provinces as there are considerable socioeconomic gaps between the region capitals and other areas. For this reason, data collection for the verifiable

indicators by the Project covered the Pilot Provinces as a whole. On the other hand, due to the significant gaps within the provinces, the ex-post evaluation considered data for rural areas in the Pilot Provinces in order to assess the achievement of the Project Purpose.

In addition to this, the evaluation analysis paid attention to a statistical issue in the proportion of institutional deliveries at provincial level. In Morocco, statistically, the number of institutional deliveries is based on the place where the medical institution is located. For example, in a case where a pregnant woman from a rural area is transferred to a regional hospital outside of the province where she lives and gives birth there, the birth is counted as an “institutional delivery in the urban area of the province where the hospital is located”.

1) Indicator 1

Although Indicator 1 did not achieve target value, the outputs of the Project led to some improvements in the rate of prenatal and postnatal checkups.

For prenatal checkups, the proportion of pregnant women having these three times was 61% in Séfrou and 79% in Ifrane in 2007. Neither of the Pilot Provinces were able to attain the target value (See Table 5).

Table 5: Performance of Prenatal and Postnatal Medical Checkups in the Pilot Provinces (2007)

	Prenatal		Postnatal	
	Target	Actual	Target	Actual
Séfrou	More than 80%	61%	More than 95%	90%
Ifrane	More than 85%	79%	More than 95%	90%

Source: Japan International Cooperation Agency, “Terminal Evaluation Report”

Having said all this, according to data for rural areas in the Pilot Provinces, there are indications that the rate of prenatal and postnatal checkups⁸ may have improved. (See Table 6) During the period 2004-2007, the proportion of pregnant women in rural areas having prenatal checkups within the first three months improved in both Pilot Provinces: from 56% to 58% in Séfrou and from 44% to 47% in Ifrane. It can be rationally concluded from the improvement of this indicator that an improvement in maternal healthcare follows. Prenatal checkups within the first trimester of pregnancy are important in monitoring maternal health and a minimum of three checkups before delivery is recommended in the guideline of the Ministry of Health. The improvement may be attributed to a growing awareness of the importance of prenatal and postnatal checkups among pregnant women and their families, this having been developed through improved IEC activities such as Mother’s Classes, one of the outputs of the Project.

The number of pregnant women having prenatal checkups in the target areas for mobile clinics in Séfrou was 1,812 which accounted for 58% of the total number of pregnant women in rural areas of the province. In Ifrane, 274 pregnant women had prenatal checkups at mobile clinics. This means that only 18% of pregnant women in rural areas were covered by mobile clinics. In Séfrou, the prenatal checkup rate in remote areas with limited access to rural health centers increased due to the scheduled implementation of mobile clinics. In Ifrane, the coverage area of mobile clinics has been slowly expanding.

Table 6: Performance of Prenatal and Postnatal Medical Checkups in Rural Areas of the Pilot Provinces (2007)

	Proportion of new recruitments for	Proportion of pregnant women in the first trimester	Proportion of postnatal	No. of pregnant women having
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⁸ The guidelines of the Ministry of Health recommend that pregnant women should have prenatal checkups a minimum of three times in the first trimester, the second trimester and the third trimester and one postnatal checkup after birth.

	prenatal checkups	among the new recruitments for prenatal checkups	checkups	prenatal checkups at mobile clinics
Séfrou	51%	58%	79%	1,812
Ifrane	54%	47%	77%	274

Source: Ministère de la Santé, “Santé en chiffres 2007” (Health Statistics) and data provided by the Provincial Health Service Delegations

The under-performance of the prenatal checkup rate can be attributed to limited access to health services, including rural health centers and mobile clinics in the rural areas of the Pilot Provinces. Many rural households are scattered in remote areas far from village centers. In these cases, pregnant women need to walk one or two hours to the rural health centers. In addition, difficult conditions, including bad weather, can interfere with visits by pregnant women for prenatal checkups even though they understand their importance.

On the other hand, the postnatal checkup rate is higher than the prenatal checkup rate. This is because postnatal checkups are jointly implemented with neonatal checkups and vaccinations for newborn babies after 7 days, which are requirements for birth registration in Morocco.

2) Indicator 2

It is difficult to analyze changes in Indicator 2 for before and after the Project as the definition of “high risk pregnancy” was changed in 2006. However, qualitative analysis on the conditions and environment for high risk pregnancies by the ex-post evaluation indicates that the achievement of Indicator 2 may not have achieved target value.

The main reason of this is insufficient items and the quality of prenatal checkups in rural areas. In general, prenatal checkups include body measurement, the measurement of fundal height, checks in uterine sound, pelvic examinations and so on. However, biochemical examinations, including blood and urine tests, are rarely implemented at rural health centers due to limited equipment and few medical staff. In addition, pregnant women sometimes need to pay for these tests despite the free examination system⁹. This cost burden also hampers the extension of these biochemical examinations among pregnant women in rural areas. Furthermore, the limited number of rural health centers with the equipment for echography limits the capacity for the early detection of risks which can lead to complications in deliveries and to emergencies. Also, the limited proportion of pregnant women having prenatal checkups within the first trimester hinders the diagnosis of high risk pregnancies, although the proportion has been gradually increasing. Therefore, the detection and care rates of high risk pregnancies do not necessarily reflect the appropriateness of maternal health services.

3) Indicator 3

Although it did not reach target value, Indicator 3 has been achieved in both Pilot Provinces helped by some external factors.

In PDM, Indicator 3 is described as “the proportion of deliveries attended by qualified health staff”. However, in Morocco, there is no system for the dispatch of public birth attendants to individual houses for birth assistance. Therefore, the ex-post evaluation assessed the institutional delivery rate at provincial hospitals and health centers. (See Table 7)

⁹ In 2008, the Ministry of Health implemented free institutional deliveries at public medical institutions and free perinatal care services including medical examinations. However, some public medical institutions charge actual expense due to the insured budget endorsement for the free services.

Table 7: Proportion of Deliveries at Public Institutions in the Pilot Provinces (2007)

	Target	Percentage of deliveries at public institutions	
		Whole Province	Rural Areas
Séfrou	More than 70%	55%	52%
Ifrane		60%	53%

Source: Ministère de la Santé, "Santé en chiffres 2007" (Health Statistics) and data provided by the Provincial Health Service Delegations

As of 2007, the institutional delivery rate was 55% in Séfrou and 60% in Ifrane. This was because of an increase in awareness of the importance of institutional deliveries for maternal healthcare among pregnant women and their families in the Pilot Provinces. This was achieved through IEC activities, including Mother's Classes which was one of the outputs of the Project. In Séfrou, the institutional delivery rate in rural areas was 54%. There was no difference in the institutional delivery rate between the rural areas and the province as a whole. However, the rate had dropped slightly from 59% in 2004. On the other hand, in Ifrane, the rural institutional delivery rate increased significantly to 53% from 44% in 2004, but this was still below the level of the whole province.

As mentioned above, the Indicator was affected by the statistical system of the Ministry of Health. Since both Pilot Provinces are located in the vicinity of regional capitals, such as Fès and Méknès, there are cases when pregnant women from rural areas near the regional capital prefer to go directly to regional hospitals even for a normal delivery. According to the Séfrou Provincial Health Delegation, the number of pregnant women who live in the vicinity area of Fès who prefer delivery at a regional hospital has been increasing due to the absence of obstetricians in provincial hospitals at night and on holidays. Because these cases are recorded as deliveries in Fès, the number of institutional deliveries in Séfrou will not necessarily increase, even though pregnant women have chosen institutional delivery rather than delivery at home.

On the other hand, there are issues of equipment and facilities in the maternity units¹⁰ of rural health centers. Since there are no kitchens in the maternity units, the families of parturient women need to prepare and bring meals for them. However, there is no accommodation for families. When families live far from a health center, these conditions mean inconvenience and a heavy burden for the families, which makes many parturient women choose delivery at home. In addition, insufficient care for parturient women both before and after delivery, besides insufficient birth attendance, all hamper the extension of institutional deliveries in rural areas. Although the enhanced communication abilities of midwives and a growing trust on the part of pregnant women and their families has promoted institutional delivery through the Project, the number of midwives at rural health centers is still insufficient for the number of deliveries. As a result, midwives at rural health centers cannot carefully care for parturient women before and after delivery.

Moreover, the financial burden can be attributed to the slow extension of institutional deliveries in rural areas. Although delivery at a public institution is free of charge¹¹, the family still needs to pay an average of \$40 for delivery to cover transfers, medicine, accompaniment by family, and meals¹². This is a heavy burden for rural households.

¹⁰ In Morocco, it is called a "*Maison d'accouchement*".

¹¹ Since March 2005, charges have been made for deliveries at higher medical institutions, including provincial hospitals. However, they have been free of charge for poor families. In addition, deliveries at rural health centers have also been free of charge. Therefore, it can be said that there has been no significant impact of charges in higher medical institutions on the number of institutional deliveries in rural areas.

¹² The Survey by WHO

All the indicators for the Project Purpose except Indicator 2, which was difficult to analyze, have mostly been achieved. The indicators had been improved by the outputs of the Project despite some issues remaining to hamper a complete achievement of achieve the Project Purpose.

3.2.2 Impact

3.2.2.1 Achievement of Overall Goal

The Project had two overall goals in PDM. However, the ex-post evaluation assessed only one overall goal as detailed below as this was logically appropriate considering the causal relationship with the Project Purpose and because it was possible to confirm the contribution of the Project.

Results of the Project are diffused in the 3 target regions.
[Indicator] The systems developed by the Project are applied in all the 3 target regions.

The Overall Goal was achieved.

The Department of Population of the Ministry of Health, a counterpart organization of the Project, recognized the effectiveness and usefulness of the Project and began activity to extend these results nationwide through their policies and programs related to maternal healthcare.

For example, the continuous education system for newly-recruited midwives and nurses was institutionalized in 2009. Despite of differences in content and performance the continuous education due to the capacities of provincial delegations, all provinces in the target three regions introduced the continuous education system established by the Project.

In addition, a nationwide extension of Mother's Classes as a part of IEC activities for pregnant and parturient women has been incorporated in the "Program for Maternity without Risk". Although there are differences in content and quality according to practitioner, all provinces in Morocco have implemented Mother's classes and thus they have been diffused far beyond the target regions.

There were two driving forces behind the attainment of the Overall Goal: efforts of the Ministry of Health and the continuous support of JICA. The Ministry of Health recognized the benefits of the Project in promoting human resource development and diffusing appropriate knowledge for maternity and reflected them in their policies. JICA, meanwhile, dispatched a Long-Term Expert who was engaged in the Project as a Project Leader, from March 2008 to March 2010, in order to support the extension of the outputs and outcomes of the Project to the three target regions. The activities of the Long-Term Expert in various provinces meant that the Project took root in the target regions and also led to the revision and development of manuals related to the Project. These extension activities were promoted by the revised manual for the continuous education training and the newly developed manual for Mother's classes which were distributed by the Ministry of Health.

3.2.2.2 Other Impacts

This Project brought about various positive impacts on rural maternal healthcare services not only in the Pilot Provinces but also in broader areas across Morocco. Meanwhile there was no negative impact during the Project or at the time of ex-post evaluation (See Figure 1).

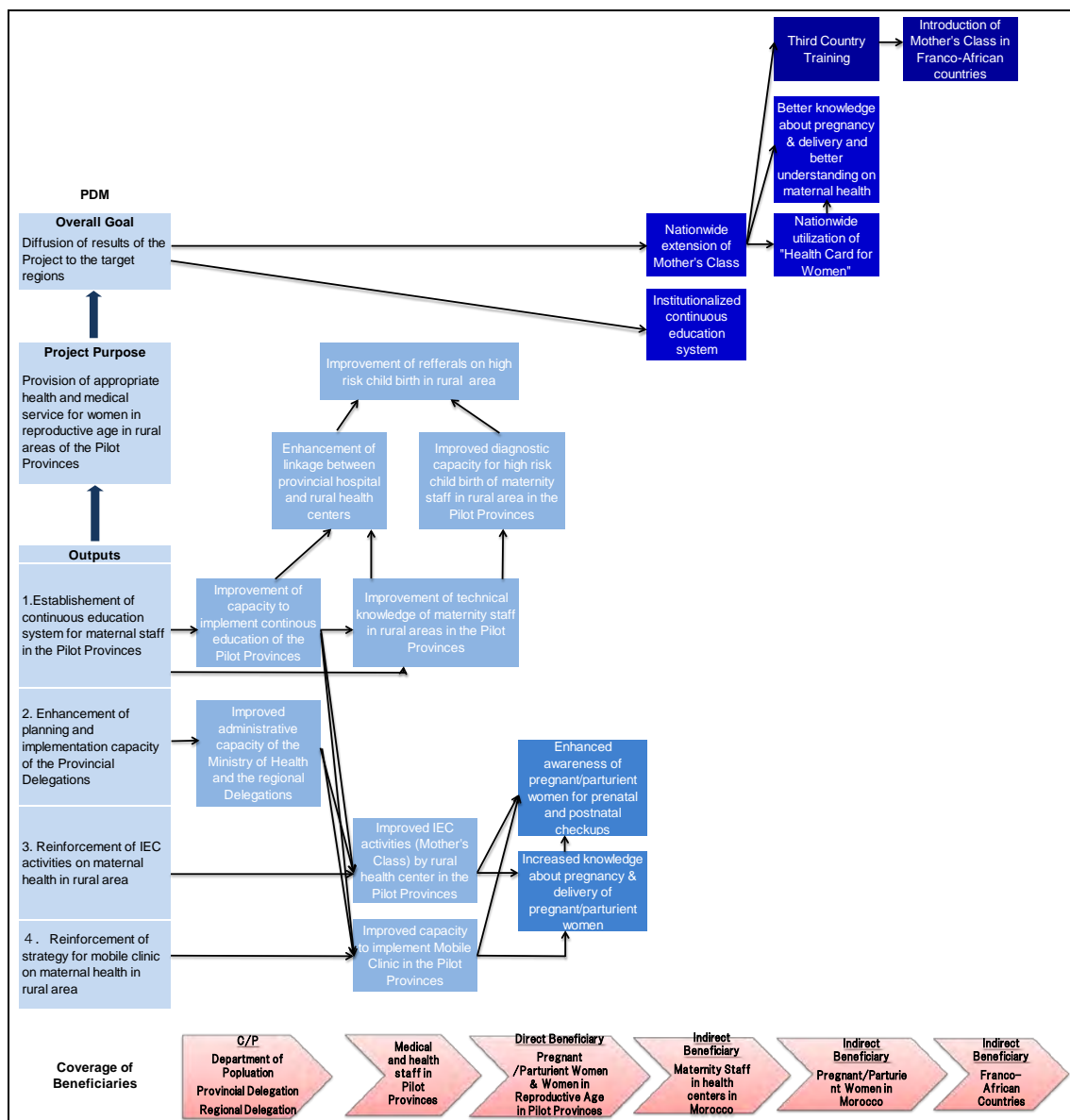


Figure 1: Logic Model for Impacts of the Project

1) Introduction of Mother's Classes by Ex-Trainees and their Extension Nationwide and to Other Franco-African Countries

As mentioned above, a proposal by an ex-trainee who had participated in training in Japan before the Project and the support of the Project initiated Mother's Classes in Morocco which after the Project have extended nationwide.

During the implementation of the Project, Mother's Classes at provincial hospitals were established in the Pilot Provinces. After that, in June 2007, a pilot Mother's Class was held at a health center. Since then, the number of health centers which implement Mother's Classes has been increasing not only in the Pilot Provinces but also in other provinces and regions. It is recognized that it these are a very effective tool for the promotion of awareness of maternal health, including delivery, among pregnant and parturient women and their families as well as for the promotion of prenatal and postnatal checkups and institutional deliveries. With this background, plans for the nationwide extension of Mother's Classes were incorporated in "the Program for Maternity without Risk". Now, Mother's Classes have been introduced in all provinces in Morocco.

In addition, the Third Country Training supported by JICA, which was recommended by the terminal evaluation, became an opportunity to diffuse Mother's Classes to other Franco-African countries. Training was implemented between February 2008 and March 2010. The main objective of the training was assistance for Franco-African countries by the utilization of the outputs by the Project, including the Mother's Classes. Participants in training from Benin, Burkina Faso and Senegal introduced Mother's Classes in their countries when they returned.

Box: Synergetic Effects by Linkage among Technical Cooperation Schemes on the Introduction and Diffusion of Mother's Classes in Morocco

It all started with a suggestion by an ex-trainee from Méknès Province in one of the target regions of the Project who had participated in a training course in Japan before the Project started. The first Mother's Class was held in Méknès Province. After that, since C/Ps also recognized the importance of Mother's Classes in enhancing IEC activities through their experience of training in Japan for the Project and the Project incorporated the introduction of Mother's Classes as part of IEC activities. Mother's Classes were held in Infrane Province in February 2006 and in Séfrou Province in 2007. After a trial implementation at health center level in the Pilot Provinces, Mother's Classes were introduced in other provinces in the target regions of the Project as well as in regions outside the Project. Furthermore, the Ministry of Health appreciated the effectiveness of Mother's Classes for maternal health care and incorporated them into "the Program of Maternity without Risk" (Programme de la Maternité sans Risque). Mother's Classes started in all provinces of Morocco.

In addition to support by the Project, various technical cooperation schemes also were extremely useful in the diffusion of Mother's Classes nationwide. Cooperation by the following contributed to the remarkable development of Mother's Classes: the Senior Volunteer in Méknès (during implementation of the Project), the dispatch of Short-Term Experts and Japan Overseas Cooperation Volunteers (JOCV) to support Mother's Classes, the dispatch of Long-Term Experts to diffuse models developed by the Project. Moreover, the Third Country Training ("Maternal and Child Health") which was implemented in Morocco after the Project enabled the extension of Mother's Classes to Benin, Burkina Faso and Senegal as some C/Ps of the Project also contributed to training for human resources in maternal health care from other Francophone African countries.

Mother's Classes in Morocco are an example of good practice in technical cooperation with significant impacts. They show the possibility of diffusing effective results by technical cooperation which is consistent with development needs of the target country, not only to the whole country but also to other countries through the coordination of various schemes of technical cooperation.

Using Mother's Classes as a lesson, the implementation of more effective technical cooperation with more a strategic and programmatic approach can be expected.



Materials for Mother's Classes developed with JICA's support



A Mother's Class at Sidi Addi Rural Health Center, Ifrane

2) Expansion of Public Awareness of Maternal Health

Through the IEC activities of the Project, the importance of prenatal checkups for maternal health has been gradually understood by communities in the Pilot Provinces. Although the atmosphere and customs of the Islamic society did not look favorably on women, in particular pregnant women, leaving the home, it was observed that some husbands and mothers-in-law have encouraged pregnant women to have prenatal checkups and attend Mother's Classes¹³. In addition, the "Health Card for Women" (*Carnét de Santé de la Femme*) has also contributed to the promotion of awareness of maternal health among pregnant women as pregnant women need to show their Health Card in order to participate in Mother's Classes. They can have a prenatal checkup at the same time as their Mother's Class.

3) Widespread Use of "Health Card for Women" (*Carnet de Santé de la Femme*)

In Morocco, the Health Card for Women was originated by an ex-trainee who was inspired by the maternity health record book system ("*Boshi-Techo*") encountered at a training course in Japan prior to the Project. The Health Card was also developed with financial assistance from the United Nations Population Fund (UNFPA). Use of the Health Card was later promoted by women's groups in the country. Recently, the Ministry of Health also launched a campaign to emphasize the importance of the Health Card in maternal health care.

Although the activities of the Project did not focus on promotion of the "Health Card for Women", IEC activities, including Mother's Classes, incorporated maternal health management using the "Health Card for Women" in the Pilot Provinces in order to increase the proportion of pregnant women having the prenatal and postnatal checkups essential for maternal healthcare. After the Project, the activities supported by JICA also took the same approach. As a result, utilization of the "Health Card for Women" has been extended to a wider area as many health centers and hospitals nowadays require pregnant women to bring their card to Mother's Classes and prenatal checkups.

4) Enhancement of Linkage between Provincial Hospitals and Rural Health Centers

During the Project, case conferences were introduced and held regularly at the maternity units of provincial hospitals in the Pilot Provinces. Case conferences provided maternity staff with opportunities to examine cases of diagnosis, care and problems. Also, at a later stage, maternity staff at rural health centers participated in case conferences in the provincial hospitals. This facilitated linkage between provincial hospitals and rural health centers in the Pilot Provinces.

At the time of the ex-post evaluation, case conferences were still continuing in Ifrane. In Ifrane, continuous education training at provincial hospitals also give good opportunities for the enhancement of the network between obstetricians in provincial hospitals and midwives and nurses in rural health centers. The Provincial Health Service Delegation has been making efforts to establish a network which enables and facilitates smooth consultations and referrals from rural health centers to provincial hospitals

5) Human Resource Development by Counterpart Personnel

Counterpart personnel involved in the Project improved their capacities and are now engaged in training of maternity staff not only within Morocco but also outside the country. The most noteworthy cases are country focused training in Errachidia and third country training supported by JICA. For this training, some counterpart personnel of the Project served as lecturers and thus contributed to the human resource development of maternity staff in Morocco and other Franco-African countries.

Besides this, according to a questionnaire survey and interviews by the ex-post evaluation study, many of the counterpart personnel were able to diffuse knowledge and skills which they

¹³ For example, by the site survey, it was observed that a mother-in-law accompanied with a pregnant women to participate in the Mother's Class at the Health Center.

had learned through the Project. They also utilize this knowledge and skills in their work as well as achieving work place organizational improvements.

6) Improvement in the Quality of Maternal Care by the Introduction of Preventive Maintenance for Medical Facilities and Equipment

For the Project, a Short-Term Expert on medical equipment maintenance plans was dispatched. In the Pilot Provinces, he provided training and advised on the steps and measures of maintenance management for equipment at medical institutions as well as inspections and preventive maintenance by the engineers of the Provincial Delegations and health center users. This enabled the implementation of preventive maintenance which reduced the number of failures and improved the availability of medical equipment in particular at the health centers.

In the Pilot Provinces, a grant aid project by JICA¹⁴ had been implemented in order to provide facilities and equipment for rural health centers before the Project. The Project also supported the staff of the beneficiary health centers by a grant aid project to improve their capacity for the maintenance of equipment. Improving capacity for maintenance through technical cooperation together with the improvement of facilities and equipment by grant aid brought about improvements in the quality of prenatal and postnatal checkups and birth assistance through the appropriate use of medical equipment.

This project has largely achieved its purpose of improving maternal care services in the rural areas of the Pilot Provinces as well as the overall goal of the diffusion beyond the target three regions of the models of continuous education for newly recruited midwives and nurses and the mother's classes as IEC activities nationwide. Therefore its effectiveness and impact is high.

3.3 Efficiency (Rating: ②)

3.3.1 Inputs

The plan and actual inputs for the Project are shown in Table 8.

Table 8: Plan and Actual Inputs

Inputs	Plan		Actual Performance	
Japanese Side				
1. Experts	Long-term:	2 experts x 3 years (72 person months)	Long-term:	5 experts in total (72 person months)
	Short-term:	More than 5 experts	Short-term:	9 experts 5.87 person months
2. Trainees received	42 - 45 trainees		48 trainees 162.9 million yen	
3. Third-Country Training Programs	None		None	
4. Equipment	Not stated		36.84 million yen	
5. Local Cost	Not stated		71.56 million yen	
6. Others (including dispatch of related missions)	Not stated		13.67 million yen	
Total Project Cost	Approximately 270 million yen		365.98 million yen	

¹⁴ Project for the Improvement of Maternal Healthcare in Rural Areas (1/2 and 2/2)

Inputs	Plan	Actual Performance
Moroccan Side		
1. Counterpart Personnel	12 persons	36 persons
2. Land and Facilities	- Office for JICA experts with proper facilities - Facilities and equipment for project activities	- Office for JICA experts - Project Office with necessary facilities including electricity
3. O&M Costs	Not stated	Salary for counterpart personnel, per diem for duty trips, fuel costs for mobile clinic vehicles, and a part of costs for continuous education training at provincial hospitals (expenses for meals) in 2007.
Total Cost	-	-

Source: "Record of Discussions between JICA and the Ministry of Health of the Kingdom of Morocco on the Technical Cooperation Project for the Improvement of Maternal Health Care in Rural Areas" (November, 2004), JICA, "Terminal Evaluation Report", (June, 2007), and "Project Completion Report" (November, 2007)

3.3.1.1 Elements of Inputs

1) Japanese Side

[Dispatch of Experts]

Although the actual person-month of long-term experts was as planned, the arrangement of personnel changed from the original plan. The change partly affected the implementation of the Project activities.

In the original plan, two experts were to be dispatched for "continuous education" and "maternal and child care", which were the main components of the Project. However, the person-month for the expert for "continuous education" was far below the plan because of a delay in dispatching the first expert, the replacement of the expert at term expiration and the early termination of the term of the replaced expert. According to the terminal evaluation report, the reason for the delay in dispatch was the difficulty in identifying a qualified expert who could communicate in French. The report also pointed out that this caused a considerable delay in the activities of continuous education.

In addition to underperformance in the case of the Long-Term Expert for continuous education, the additional input of a Long-Term Expert was necessary for the Project. The Project needed to conduct activities not only in the two Pilot Provinces but also to coordinate with the Department of Population and the Ministry of Health as well as with the Regional Health Service Delegations in the three target regions. From the latter half of the Project period, therefore, a second Long-Term Expert was dispatched as "project leader" in charge of supervising and managing the entire Project in addition to the two experts. The ex-JICA advisor to the Ministry of Health, who had worked at the Department of Population until November 2005, was appointed as project leader in order to reinforce the arrangement of experts for more smooth and efficient project implementation.

As Short-term Experts, experts on health administration and continuous education were dispatched as planned. In the remaining two fields (public health and gender), no expert was dispatched. Instead, experts in the following seven fields were dispatched as necessary: "maternal healthcare systems", "nursing education", "nursing education (maternity)", "local healthcare", "perinatal epidemiology" and "medical equipment management".

The Short-Term Experts on continuous education, nursing education and local healthcare were sent from the Japan Red Cross Kyushu College of Nursing which was the training institution for the Project. In particular, for the field of nursing education, the same expert was dispatched three times for the Project. The terminal evaluation report confirmed that this greatly contributed to the improvement of continuous education programs and complemented

the insufficient input of the Long-Term Expert.

[Trainees Received]

The number of trainees received was almost as planned.

Four training courses were implemented: “Health Administration” for administrative officers of the Ministry of Health, “Local Health Administration” for provincial and regional administrative officers, “Improvement of Maternal Healthcare” for health staff involved in the Project, and “Continuous Education” for midwives at provincial hospitals who would become trainers for provincial continuous education training. The participants for each training course were adequately selected according to their job descriptions and their roles in the Project. For the “Local Health Administration” and “Improvement of Maternal Healthcare” training courses, the participants were selected not only from the Pilot Provinces but also from the target regions and other provinces in order to facilitate the extension of the results of the Project afterwards.

[Equipment]

The Japanese side provided equipment for continuous education including tocomonitors and echographies, apparatus for birth, vehicles for Mobile Clinics and equipment for IEC activities. The equipment for continuous education was provided for provincial hospitals in the Pilot Provinces, regional hospitals in the target regions, and the specialized university hospital in Rabat. The vehicles for Mobile Clinics and the equipment for IEC activities were provided for the Provincial Health Service Delegations of the Pilot Provinces as well as those of the provinces of Tata and Guelmim in one of the target regions of Guelmin-Es-Smara.

[Local Cost]

The cost for continuous education training, including travel expenses and payments for lecturers, accounted for almost 60% of the total local cost. Before 2007, the Japanese side covered part of the cost of continuous education training at provincial hospitals such as per diem and transportation costs for participants.

2) Moroccan Side

[Counterpart Assignment]

At the planning stage of the Project, it was planned that 12 counterpart personnel would be assigned, including staff from the Department of Population, directors and other responsible persons from the Provincial Delegations and the provincial hospitals of the Pilot Provinces and from the Regional Delegations of the target regions. As actual, a total of 36 counterpart personnel were assigned: 9 from the Ministry of Population, 14 from Séfrou, 9 from Ifran and 4 from the target regions.

The main reason for the increase in the total number of counterpart personnel was the addition of counterpart personnel assigned for project activities besides those responsible for each institution. In particular, staff from the Provincial Delegations and the provincial hospitals of the Pilot Provinces were assigned to working groups of the Project in order to establish continuous education systems in the Pilot Provinces, which was the expected Output 1 of the Project.

[Facilities and Equipment]

The necessary facilities and equipment for the Project were provided as planned.

[Local Cost]

According to the terminal evaluation, the Moroccan side covered the salaries for the counterpart personnel, per diems for official trips by counterpart personnel, and the fuel costs for the vehicles of Mobile Clinics. In addition, the cost for continuous education training at the provincial hospitals was borne through the budgets of the Provincial Delegations from 2007.

3.3.1.2 Project Cost

Although the project cost was slightly higher than planned, this was appropriate as all the inputs were necessary for the production of the Project outputs.

One of the reasons for the actual project cost exceeding the budget was the change in operation of the country training program. According to the revised operational policy, the costs for the two training programs, “Improvement in Maternal Healthcare in Rural Areas” (FY 2002-06) and “Local Health Administration” (FY 2004-06) accrued after 2005, were considered as an input for the Project.

In terms of costs for equipment and local costs, each element of the inputs was appropriate and was used for production of the Outputs of the Project, although the appropriateness of the budget for the Project could not be verified as there was no mention of budget amounts in the project plan.

3.3.1.3 Period of Cooperation

The period of cooperation was as planned.

Although the elements of the inputs were appropriate for producing the outputs, the project cost slightly exceeded the plan and the elements were partly insufficient, therefore the efficiency of the Project is fair.

3.4 Sustainability (Rating: ③)

3.4.1 Related Policy of the Project

From the policy and institutional aspects, the sustainability of the outputs and outcomes of the Project as models was high. The Ministry of Health now has a clear policy for the improvement of maternal health and has started efforts towards nationwide extension.

In 2007 when the Project was completed, the Ministry of Health revealed the long-term strategy, “Health: Vision 2020” (*Santé: Vision 2020*) which includes a long-term commitment to the reduction of maternal mortality, one of the Millennium Development Goals (MDGs), an international common goal. As a mid-term goal, numerical targets for the reduction of the maternal mortality rate and the numbers of maternal mortality were set in the “Action Plan for Accelerating the Reduction of Maternal and Infant Mortality” (*Plan d’Action pour Accelerer la Reduction de la Mortalité Maternelle et Infantile*) which is the five year program for 2008-2012. In order to attain the overall targets, the “Program for Maternity without Risk” sets forth indicators for the improvement of maternal healthcare including prenatal and postnatal checkups and institutional deliveries.

Table 9: Policy Target for Maternal Mortality and Maternal Care by 2012

Action Plan for Accelerating the Reduction of Maternal and Infant Mortality	Program for Maternity without Risk
<ul style="list-style-type: none">• Maternal Mortality Rate: 50 per 100,000 live births• The Numbers of Maternal Mortality: 300 per year	<ul style="list-style-type: none">• Rate of Prenatal Checkups: 80%• Rate of Postnatal Checkups: 80%• Rate of Institutional Deliveries: 90%• Rate of Caesarean Operations: 7%

Table 10 shows the policies and programs related to the outputs of the Project.

Table 10: Policies related to the Outputs of the Project

Continuous Education for Newly –recruited Midwives and Nurses	Enhancement of IEC Activities	Reinforcement of Mobile Clinics
<ul style="list-style-type: none"> ➤ Vision 2020: Capacity development of health staff (development of training for paramedical staff including midwives) ➤ Action Plan for the Reduction of Maternal Mortality: Doubling training opportunities for midwives ➤ Program for Maternity without Risk: Training for staff in maternity unit on communication skills for dealing with pregnant and parturient women 	<ul style="list-style-type: none"> ➤ Program for Maternity without Risk: Extension of Mother’s Classes ➤ Action Plan of Health: IEC activities for obstetric emergency care in rural areas 	<ul style="list-style-type: none"> ➤ Action Plan of Health: Prevention and medical examinations for high risk pregnancies by Mobile Clinics (Mandatory prenatal checkups including blood tests)

For the capacity development of newly-recruited midwives and nurses through continuous education, a regular training system at provincial hospitals, including one month’s training in the first year and one week’s training from the second year was institutionalized in 2009. Also, mentoring by obstetricians of provincial hospitals for maternity staff at rural health centers is a key activity in continuous education.

In terms of the enhancement of IEC activities, the Program for Maternity without Risk comprised activities such as the evaluation of experiences in six provinces¹⁵, the introduction of Mother’s Classes in Errachidia and the extension of the target regions of the Project for the extension of Mother’s Classes.

For the reinforcement of Mobile Clinics, the Action Plan of Health 2008-2012 revised the strategy for Mobile Clinics in order that areas with difficulties in accessing health services were covered.

In addition to all this, in order to expand institutional deliveries, deliveries at higher medical institutions, including provincial hospitals, became free again in 2008 although a charge for institutional deliveries had been introduced in March 2005 when the Project was implemented. Furthermore, "Pre-Delivery Houses" ("*Dar Al Oumouma*")¹⁶ encouraged pregnant women from rural remote areas with limited access to public maternity units to have delivery at rural health centers as now they could stay at the Houses with their families before delivery.

3.4.2 Institutional Aspects of the Counterpart Agency

3.4.2.1 Administrative Structure

After completion of the Project, there was no organizational change and no change in responsibility for health administration. The Department of Population is responsible for maternal and childhood health services while the Department of Planning and Finance manages policy planning and budgeting and the Department of Equipment and Maintenance controls the maintenance of facilities and equipment at health institutions. The Ministry of Health controls the regional and provincial health service delegations. At provincial level, the provincial health service delegations are responsible for the planning and implementation of specific health programs and annual plans as well as for the supervision and coordination of health services in each province. Thus, while the Ministry of Health is responsible for the nationwide extension of the results of the Project, such as Mother’s Classes, as part of the national health policy and programs, specific activities for diffusion are implemented by the provincial delegations.

¹⁵ Séfrou and Ifrane are included in the six provinces.

¹⁶ *Dar Al Oumouma* were developed with the budget of INDH and the support of UNICEF. UNICEF assisted in the construction of 4 pilots under the framework program of 2002-2006. These are operated and financially supported by local communities.

At ministry level, the practical institutional arrangements have been maintained by the continuity of key personnel from the Department of Population although the change in Director of Population after the Project which slightly affected the extension of the Project results. At provincial level, there has been no change in C/P personnel in the Pilot Provinces besides the Provincial Delegates. Therefore, there is no problem in the organizational arrangements for sustainable implementation of the continuous education training, IEC activities and mobile clinics all of which were established by the Project.

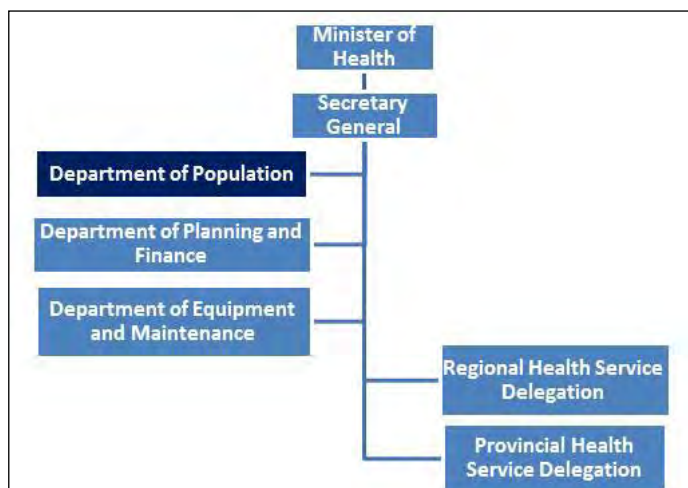


Figure 2: Organizational Structure of the Ministry of Health

3.4.2.2 Structure of Medical Services for Maternal Healthcare

There are rural health centers which provide maternal healthcare services in rural areas of Morocco. At rural health centers without a maternity unit, general only medical treatment, pre and postnatal checkups and IEC including Mother’s Classes and family planning are available since only general physicians, midwives and / or nurses are assigned.

For deliveries in rural areas, there are health centers with maternity units “*Maison d’accouchement*”. While there is no obstetrician and few midwives or obstetric nurses at the *Maison d’accouchement*, obstetricians are assigned to secondary or tertiary institutions such as provincial hospitals or higher. Therefore, only normal deliveries can be catered for at *Maison d’accouchement* while complicated or emergency cases have to be transferred to provincial or regional hospitals according to diagnosis by a general physician at the health center or by reference of an obstetrician at a referral hospital.

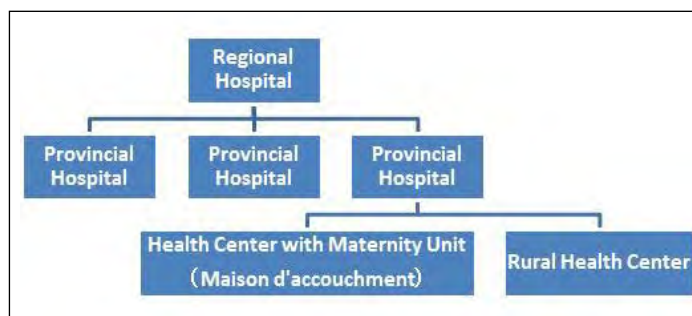


Figure 3: Referral System for Maternal Care in Morocco

In addition to this maternal healthcare system, the construction of *Dar Al Oumouma*¹⁷, for pregnant women and their families, has been promoted in order to facilitate institutional deliveries in rural areas.

¹⁷ Up to now, there are 30 *Dar Al Oumouma* in Morocco in addition to the 4 pilots.



Picture 1: Immouzer Urban Health Center with a Maternity Unit constructed by the Japanese Grant Aid Phase I. (Séfrou Province)



Picture 2: Parturient woman and her family waiting for delivery at the “*Dar Al Oumouma*” constructed on-site at the Immouzer Health Center

Following completion of the Project, there was no change in the number of rural health centers with maternity units in the Pilot Provinces. The number of obstetricians at provincial hospitals decreased by one in Séfrou and remained the same in Ifrane. On the other hand, the number of midwives and nurses increased in the both Pilot Provinces (See Table 11). Therefore, the minimum requirement for human resource allocation was maintained for the implementation and diffusing of Mother’s Classes, pre and postnatal checkups and institutional deliveries in the Pilot Provinces.

Table 11: Personnel and Institutions for Maternal Healthcare in the Pilot Provinces

	2007		2011	
	Séfrou	Ifrane	Séfrou	Ifrane
No. of obstetricians and gynecologists	3	2	2	2
No. of midwives and nurses	35	32	43*	51*
No. of delivery facilities in rural areas	6	6	6	6

Source: Data provided by the Séfrou Provincial Health Service Delegation

Note: The number of midwives and nurses in Séfrou is according to data for 2010, that for Ifrane is according to data for 2009.

However, it is recognized at both ministry and field levels that there are problems in the referral system due to an insufficient number of obstetricians and midwives and an excessive workload not only in the Pilot Provinces but also in the whole country. Although there are cases where valid transfers from rural health centers to provincial or regional hospitals take place because of inappropriate treatment such as the overuse of oxytocin by a midwife who wanted to finish delivery, there are also a number of unnecessary transfers due to insufficient knowledge and skills for the assessment of a situation. The increasing number of transfers has increased the workload of obstetricians at provincial hospitals as their number cannot be increased due to budget limitations. Therefore, for further improvement of the quality of maternal healthcare, it is necessary that the assignment and work schedule of obstetricians and midwives for each health institution are improved.

3.4.3 Technical Aspects of the Counterpart Agency

The technical level necessary to ensure sustainability of the outputs and outcomes of the Project has been maintained as most of the counterpart personnel trained by the Project continue

their work. In addition, counterpart personnel have been making efforts to improve their work and their organization by using the knowledge and skills obtained through the Project. Furthermore, some have contributed to human resource development not only in the Pilot Provinces but also in other provinces and regions, and in other Franco-African countries as trainers for country-wide training as well as for third country training. The technical factors affecting sustainability are shown as Table 12.

Table 12: Technical Factors affecting Sustainability

<ul style="list-style-type: none"> • Continuous Education 	<ul style="list-style-type: none"> ➤ No problems in continuous education training at national level for provincial maternity staff as trainers are qualified obstetricians of universities with a high level of skills and knowledge. ➤ Continuous education training at provincial level has already been established. Midwives at provincial hospitals trained by the Project train newly-recruited midwives.
<ul style="list-style-type: none"> • IEC (Mother's Classes) 	<ul style="list-style-type: none"> ➤ The counterpart personnel who participated in training in Japan gained knowledge and skills for Mother's Classes and the ability for the planning and operation of Mother's Classes in the Pilot Provinces. ➤ Knowledge for the implementation of Mother's Classes has been transferred to midwives and nurses at health centers in the Pilot Provinces ➤ Some counterpart personnel have trained midwives in other regions or in other Franco-African countries as trainers of Country Focused Training and the Third Country Training supported by JICA
<ul style="list-style-type: none"> • Mobile Clinics 	<ul style="list-style-type: none"> ➤ The necessary technical level has been maintained by the continual implementation of mobile clinics by the Chief Doctor, the Chief Nurse and midwives of SIAAP of the Pilot Provincial Delegations who were ex-counterpart personnel of the Project.
<ul style="list-style-type: none"> • Maintenance of medical facilities and equipment 	<ul style="list-style-type: none"> ➤ Medical engineers from the provincial delegations are able to implement basic maintenance of medical facilities and equipment. ➤ The provincial delegations have contracts with agents for the repair of medical facilities and equipment which cannot be repaired by the medical engineers of the provincial delegations. ➤ In Séfrou, medical engineers of the provincial delegation implement training programs on maintenance of medical equipment for medical staff in health centers, including for midwives, in order to maintain their capacity for preventive maintenance.

A particular key factor in reinforcing sustainability from the technical aspect is the development by the Project of manuals and kits for Mother's Classes and the follow-up support by JICA, in order to enhance the capacity of midwives and nurses for the implementation of Mother's Classes. In addition, JOCVs (midwives), who have been dispatched to the Pilot Provinces and other provinces, including the target provinces, for the second grant aid project, have been supporting the maintenance or quality improvement of Mother's Classes through their visits and the provision of guidance on Mother's Classes for health centers. However, there are differences in the content and quality of Mother's Classes depending on the practitioner in other provinces. Therefore, challenges remain in human resources and capacity development in the provinces without the support of JICA in order to extend good quality Mother's Classes.

3.4.4 Financial Aspects of the Counterpart Agency

The budget of the Ministry of Health (see Table 13) is composed of a current budget and an investment budget. While the current budget, which covers payroll and equipment, accounts for 80% of the total budget, the investment budget for medical facilities accounts for less than 20%. More than 50% of the current budget is made up of payroll, including personnel costs not only for the central level but also for provincial level. Whereas the budget share of the Ministry of Health of the total government budget has been declining, the budget for payroll

significantly expanded in 2007 and 2009. This was because of the increase in the number of health staff in public medical institutions which had been insufficient considering the need for medical services¹⁸. In the Pilot Provinces, the number of midwives and nurses increased even though there was no change in the number of obstetricians. Thus, financial sustainability to ensure necessary personnel can be considered to be stable.

At provincial level, although tangible data could not be clarified, it appears that the provincial delegations of the Pilot Provinces may have sufficient budget for continuous education, IEC and mobile clinics as these activities related to maternal healthcare and addressed by the national health programs have continued even after the Project ended.

Table 13: Budget of the Ministry of Health

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Current	4,325	4,224	4,480	5,053	4,916	6,062	6,828	8,249	8,668	9,098
Personnel	3,404	3,289	3,445	3,973	3,686	4,647	4,387	5,404	5,768	6,118
Equipment	921	935	1,035	1,080	1,230	1,415	2,441	2,845	2,900	2,980
Investment	858	965	1,015	1,165	1,165	1,312	1,312	1,543	1,797	1,798
Total	5,183	5,189	5,495	6,218	6,081	7,374	8,140	9,792	10,465	10,896

Unit: million DH

Source: Ministry of Health

3.4.5 Continuity of Effectiveness / Impact

In both Pilot Provinces, continuous education systems, IEC, including Mother's Classes, and mobile clinics, which were established or enhanced by the Project, have continued although there is still room for improvement in quality (Figure 4).

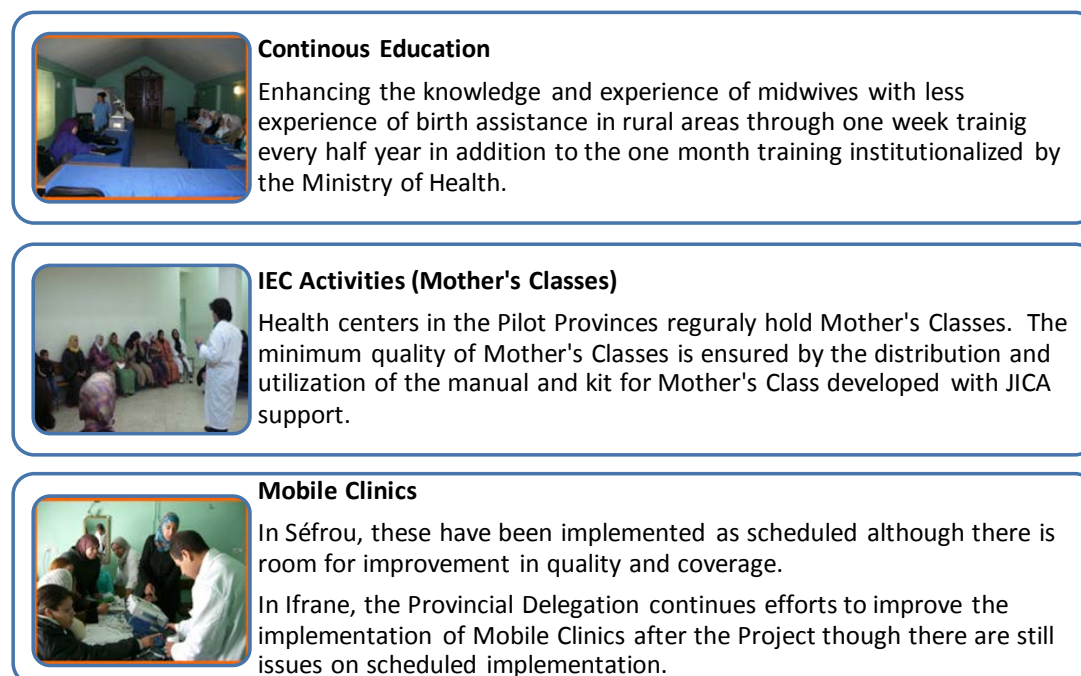


Figure 4: Current Activities related to Effects by the Project

¹⁸ Distribution of medical and health staff in Morocco is not balanced by area and is not based on the demands for medical services, such as the number of deliveries.

As mentioned above, results of the Project have been incorporated in the policies and programs of the Ministry of Health for 2008-2012, such as the “*Plan d’action santé*”, and diffused and extended nationwide. Therefore, it is expected that activities related to these results will be focused on by 2012.

No major problems have been observed in policy background, or in the structural, technical or financial aspects of the counterpart agency, therefore, the sustainability of the Project effects is high.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

Sufficient consistency with the needs in rural areas of Morocco for improvements in maternal care ensured a high relevancy of this Project. There were challenges for the Project in producing the expected outputs through activities in the two Pilot Provinces, and insufficient inputs slightly reduced efficiency. However, on the other hand, the approach to establish practical models resulted in remarkable effectiveness and impacts as well as in high sustainability. In particular, the impacts of Mother’s Classes, introduced with JICA support and related to this Project, deserve special mention.

In light of the above, this project is evaluated to be highly satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Counterpart Agency

[Enhancement of midwife and nurse education and coordination with continuous education]

Through continuous education for newly recruited midwives and nurses introduced by the Project, a capacity development system for inexperienced midwives and nurses working for rural health centers has improved. Although maternal healthcare services in rural areas have improved, there is still room for improvement in the items and quality of prenatal checkups in order to enhance healthcare for high risk pregnancies. Thus it is necessary for midwifery and nursing schools to provide basic knowledge and skills on maternal healthcare and to collaborate with continuous education for enhanced on-the-job training for newly recruited midwives and nurses.

[Enhancement of Maternal Healthcare through Improved Quality of Mother’s Classes]

The standardized materials and guidebooks for Mother’s Classes were developed with the support of JICA, including this Project, and follow up technical cooperation was also given. This support contributed to the extension of Mother’s Classes nationwide and they are now held in all provinces in Morocco. However, there are still differences in the quality of Mother’s Classes, as this depends on the experience, knowledge and skills of the practitioner (midwife or nurse), and depends on the health center even in the Pilot Provinces.

On the other hand, it is essential that pregnant and parturient women and their families recognize and understand the appropriate knowledge for maternal healthcare in order to increase the effectiveness of prenatal and post-natal checkups. Thus, the practitioners of Mother’s Classes, including midwives and nurses, need to implement more practical and informative Mother’s Classes according to the standardized materials and guidebooks, including giving nutritional guidance as well as giving guidance on how to care for and detect problems during pregnancy.

[Enhanced extension of the continuous education model and Mother’s Classes through training by the Ministry of Health]

The nationwide extension of the continuous education model and Mother’s Classes, which resulted from the Project, has already been incorporated in the policy of the Ministry of Health.

However, it is not enough that these are implemented at the practical level. Periodic and sustainable training for key human resources is also required in order to diffuse the knowledge and skills of continuous education models and Mother's Classes to health centers, in particular in rural areas. Since the content and methodologies of these training programs were developed by Country Focused Training in Errachidia province with the cooperation by JICA, it can be expected that the Ministry of Health will by themselves continuously implement such training programs for the extension of continuous education models and of Mother's Classes.

[Implementation of useful measures at field level coming from bottom up]

The introduction and extension of Mother's Classes by the Project demonstrates the transferability of Japanese systems or measures in maternal healthcare to Morocco through a process where key persons on the Moroccan side directly learn from Japanese cases and select applicable and useful ones for the Moroccan context with the support of Japanese experts.

Ex-trainees who were trained in Japan now number over 100, and it can be expected that they will be able to come up with useful measures to improve and enhance maternal healthcare in Morocco, based on their experience in Japan, and furthermore that they will be able to actively diffuse them, as was case for Mother's Classes.

4.2.2 Recommendations to JICA

[Continuation of Assistance for the Nationwide Extension of the Project Results]

While JICA has already supported activities for the diffusion of Project results, the Ministry of Health of Morocco has been attempting to extend Project results not only to the target regions of the Project but also beyond these regions in order to achieve MDG 4 of reduction in maternal mortality. Further assistance from JICA will be required for this.

While the Ministry of Health has recognized the benefits of Project results such as the continuous education programs and Mother's Classes, the provincial delegations which implement them at provincial level, do not necessarily appropriately understand what they should carry these out and how they should do it. Therefore, it would be better to provide JICA support through various schemes to provincial delegations which have not yet been supported by JICA in order to enhance their capacity by 2015, the target year for MDG.

4.3 Lessons Learned for JICA

[Strategic utilization of training in Japan and effective project implementation with the strategic participation of trainees]

As they had had the chance to participate in training in Japan prior to the Project, the key counterpart personnel in the Ministry of Health well understood the maternal healthcare system and the training system for medical staff in Japan before the Project started. In addition, the main training institution in Japan also dispatched Short-Term Experts for the Project. This enabled the provision of integrated training programs in Japan which were consistent with the Project activities and more effective mentoring for counterparts by the Short-Term Experts. As a result, the effects of training in Japan were considerably increased.

In addition, the training for counterparts and personnel at provincial level, where there is limited personnel change, is also considered to be one of the key factors in enabling on-site practice of skills and knowledge acquired through training which thus become entrenched in the organizations. This has contributed to the significant impacts of the Project, including the nationwide extension of Mother's Classes, and the ensured sustainability of the project effects.

These facts indicate that the effective use of training, and project planning and implementation using trainees is a key in increasing effectiveness and ensuring the sustainability of technical cooperation projects.

[Long-term technical cooperation with program approach based on strategic vision]

The Project was designed and implemented in order to address the issues identified by the

implementation of the Grant Aid Project, "the Project for the Improvement of Maternal Healthcare in Rural Areas" which started in the fiscal year of 2001. As mentioned above, training for key counterpart personnel prior to the Project enabled them to understand the systems and concepts to be introduced by the Project and contributed to the smooth implementation of the Project.

In addition, the Japanese expert, who was familiar with the maternal care system and with actual situations and had been engaged by JICA for assistance in the sector for long time, indirectly supported the Project before the Project began and was directly involved with project implementation as project leader for the latter period. Also the expert was engaged in a series of follow-up activities for the diffusion and extension of the Project effects, including the continuous education system and Mother's classes, after completion of the Project. This long-term commitment by a competent expert contributed to the impacts and sustainability of the Project.

Good practice for technical cooperation with a programmatic approach thus resulted from the inputs of an experienced expert in the field of maternal care in Morocco who played a key role in linking all the relevant JICA activities. Based on this good practice, it is necessary for JICA to build up a strategic approach in order to provide timely assistance using a variety of its schemes.

[Establishment of Models through Activities in Multiple Pilot Sites]

The Project took the approach of establishing models for the improvement of maternal healthcare in rural areas of Morocco through activities in two pilot provinces in two different regions. The advantage of this approach is the synergy effect as the two Pilot Provinces were mutually stimulated and motivated in attaining the objectives. In addition, this contributed to an examination of the effectiveness of the models through the activities in the two different Pilot Provinces in different conditions. In fact, the results of the Project, such as Mother's Classes, were in the end extended to other provinces and regions.

On the other hand, the ex-post evaluation analysis identified that the attainment of the outputs and the project purposes differed between the Pilot Provinces. While both provinces continued activities based on the models established by the Project after Project completion, their activities have largely been supported by follow-up assistances from JICA, including the dispatch of experts and JOCVs. The findings clearly indicate that activities in multiple pilot areas which are geographically distant result in a lot of challenges as well as requiring substantial inputs and follow-ups in order to achieve visible results.

Thus, it is essential that feasibility, including project objectives and strategy, possible inputs, and the capacity of counterpart organizations, is carefully assessed when the implementation of activities in multiple pilot areas is planned.

<End>

Kingdom of Morocco

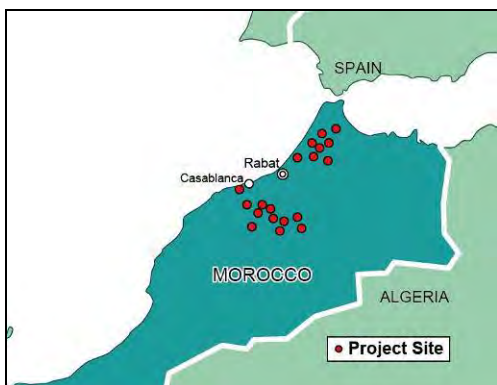
Ex-Post Evaluation of Japanese Grant Aid Project
“Project for the Improvement of Maternal Healthcare in Rural Areas (Phase II)”
(“*Projet d’amélioration des soins de santé maternelle en milieu rural (Phase II)*”)

External Evaluator: Hisami Nakamura and Junko Fujiwara, OPMAC Corporation

0. Summary

The Project is consistent with Morocco’s health sector development plan and development needs and with Japan’s ODA policy for Morocco, thus its relevance is proved to be high. The Project period, however, was prolonged due to the delay in construction works, which meant that the project efficiency was fair. The Project has added value to the efforts of the Ministry of Health to improve perinatal care service, and its efficiency is proved high. Although improved, there remains a certain disparity among the target institutions in their institutional and technical management capacity for operation and maintenance. The sufficient recurrent budget and its direct allocation to health centers for facility maintenance could be further pursued. In light of the above, this project is evaluated to be satisfactory.

1. Project Description



Project Sites



One of target institutions improved under the Project: the Maternal Unit of Al Idrissi Regional General Hospital in Kénitra Province

1.1 Background

Maternal and child health indicators for the year 2004 showed a poorer situation in the Kingdom of Morocco (hereinafter ‘Morocco’) than in surrounding countries¹ and a need for further improvement. The infant mortality rate (IMR) was 40 per 1,000 live births, the mortality rate of children under five years old (U5MR) was 37, and the maternal mortality rate (MMR) was 227 per 100,000 births. Regional disparity in the country was also severe as shown in MMR (urban areas were 187 whereas rural areas were 267)². Causes of death in pregnant women were reported as complications, poisoning symptoms, wrong treatment of high risk deliveries, pregnancy at a young age and work overload. The Government of Morocco

¹ IMR per 1,000 births in Tunisia and Libya as of 2003 were 19 and 13, U5MR were 24 and 16, and MMR per 100,000 births were 120 and 97 respectively.

² Ministère de la Santé, “Rapport Preliminaire de l’Enquête sur la Population et la Santé Familiale (EPSF), 2003-2004”

(GOM) introduced “Program for Maternity without Risk” (*Programme de la maternité sans risque*) in its “Health and Medical Policy 2005-2007” (*Politique de santé, acquis, défis et objectifs, plan d’action 2005-2007*), under which it outlined (i) the improvement of maternal facilities; (ii) the development of health personnel for assisting deliveries, and (iii) the enhancement of referral systems.

The Japan International Cooperation Agency (JICA) provided the “Technical Cooperation Project for the Improvement of Maternal Healthcare in Rural Areas” (*Projet technique d’amélioration des soins de santé maternelle en milieu rural*), dispatched individual experts and Japanese volunteers, and conducted a series of country-focused training programs for Moroccan delegates in Japan, to support the initiatives of the GOM. The Government of Japan (GOJ) extended its grant aid in FY 2001 and 2002, when budget constraints prevented the GOM from taking prompt action to improve rural health facilities and equipment, in the “Project for the Improvement of Maternal Healthcare in Rural Areas” (*Projet d’amélioration des soins de santé maternelle en milieu rural*) under which health facilities and medical equipment were enhanced at 27 target institutions in 14 provinces in rural and remote areas³. The GOM highly appreciated the GOJ’s assistance, and an official request was made for the extension of further grant aid to this project targeting 19 health institutions in four provinces adjacent to the capital Rabat and the commercial center of Casablanca.

1.2 Project Outline

The objective of this project was to improve the quality of perinatal care services provided at medical institutions in four targeted provinces (Kénitra, Sidi Kacem, Khouribga, and Settat) by upgrading their facilities and equipment for perinatal care services and improving their service systems.

E/N Limit / Actual Grant Amount		972 million yen / 954million yen
Exchange of Notes Date		9 August 2006
Implementing Agency		Ministry of Health (<i>Ministère de la santé</i>)
Project Completion Date		28 March 2008
Main Contractors		Konoike Construction Co., Ltd, Mitsubishi Corporation
Main Consultants		Joint Venture Group of Kume Sekkei Co., Ltd and ITEC
Basic Design		January to August 2006
Related Projects	Grand Aid	Project for the Improvement of Maternal Healthcare in Rural Areas (1/2 phase: FY2001, E/N Limit 465 million yen, 2/2 phase: FY2002, E/N Limit 784 million yen)
	Technical Cooperation	Project for the Improvement of Maternal Healthcare in Rural Areas (2004 to 2007), Dispatch of individual experts, dispatch of Japanese volunteers and country-focused training courses in Japan

Note: E/N stands for Exchange of Notes

Project locations and project components are as shown in Table 1

³ Séfrou, Boulemane, Zouaga My Yacoub, Fès Jdid Dar Dbibegh, Khénifra, El Hajeb, Ifrane, Errachidia, El Isamilia, El Menzeh, Tan Tan, Assa-Zag, Guelmim, and Ta Ta provinces.

Table 1: Project Locations and Project Components

Region	Province	Target Medical Institution	Project Component		
			Facility	Equipment	Ambulance
Gharb-Chrarda-Béni Hssen	Kénitra	Al Idrissi Regional General Hospital (<i>Hôpital général régional d'Al Idrissi</i>)	✓	✓	
		Zoubeir Skirej Health Center (<i>Polyclinique de Zoubeir Skirej</i>)			✓
		Sidi Slimane Polyclinic (<i>Polyclinique de Sidi Slimane</i>)		✓	
		Sidi Allal Tazi Health Center (<i>centre de santé de Sidi Allal Tazi</i>)	✓	✓	✓
		Had Oulad Jalloul Health Center (<i>Centre de santé de Had Oulad Jalloul</i>)		✓	
		Sidi Yahia Health Center (<i>Centre de santé de Sidi Yahia</i>)	✓	✓	
	Sidi Kacem	Abou Kacem Zahraoui Polyclinic (<i>Polyclinique de Abou Kacem Zahraoui</i>)			✓
		Macharaa Bel Ksiri Local Hospital (<i>Hôpital local de Macharaa Bel Ksiri</i>)		✓	✓
Chaouia-Ouardigha	Khouribga	Hassan II Provincial General Hospital (<i>Hôpital général provincial Hassan II</i>)	✓	✓	
		Bejaad Polyclinic (<i>Polyclinique de Bejaad</i>)			✓
		Boujniba Health Center (<i>Centre de santé de Boujniba</i>)		✓	
		Oulad Azzouz Health Center (<i>Centre de santé de Oulad Azzouz</i>)		✓	
		Maadna Health Center (<i>Centre de santé de Maadna</i>)			✓
	Settat	Hassan II Regional General Hospital (<i>Hôpital général régional Hassan II</i>)	✓	✓	
		Ben Ahmed Polyclinic (<i>Polyclinique de Ben Ahmed</i>)		✓	
		Soualem Health Center (<i>Centre de santé de Soualem</i>)		✓	
		Bni Khloug Health Center (<i>Centre de santé de Bni Khloug</i>)			✓
		Sidi Hajaj Health Center (<i>Centre de santé de Sidi Hajaj</i>)			✓
		Tlat Loulad Health Center (<i>Centre de santé de Tlat Loulad</i>)		✓	

Note 1: Regions and provinces were officially restructured in January 2011. Kénitra, Sidi Kacem and Sidi Slimane are now part of Rabat-Sale-Kénitra Region, and Khouribga province now belongs to Beni Mellal-Khenifra Region. Settat province is now part of Casablanca-Settat Region. The target medical institutions now belong to six provinces: Sidi Slimane Polyclinic and Sidi Yahia Health Center are now under Sidi Slimane province, and Soualem Health Center belongs to Berrechid province.

The status of some target institutions is also now different due to the health sector reform recently implemented. Some polyclinics have become provincial special hospitals. All local hospitals used to be part of primary medical care institutions in the referral system as there were no gynecologists / obstetricians allocated, although maternity units were installed. Some local hospitals are now upgraded to secondary medical care service providers with gynecologists / obstetricians. Others without gynecologists / obstetricians are now reorganized as health centers.

In order to avoid confusion, the names of medical institutions, referred to in this report, their status, the provinces and regions they belong to remain as they formerly were.

Note 2: The medical referral system in Morocco is topped by the tertiary medical care institutions such as the university hospital centers and the national hospitals (special / general) in the capital Rabat and in Casablanca. They are followed by the secondary medical care service institutions (regional hospitals (special / general), provincial hospitals (special / general), and local hospitals). Health centers and rural dispensaries in remote areas are placed as primary medical service providers.

2. Outline of the Evaluation Study

2.1 External Evaluator

Hisami Nakamura, OPMAC Corporation

Junko Fujiwara, OPMAC Corporation

2.2 Duration of Evaluation Study

The Evaluation Study was carried out as follows:

Duration of the Study: November 2010 to October 2011

Duration of the Field Study: from 6 to 25 March 2010 and from 19 to 25 June 2011

2.3 Constraints during the Evaluation Study

The Evaluation Team sent a set of questionnaires to all 19 target institutions through the Ministry of Health (MOH) prior to the field study. As the institutions are spread over vast geographical areas in the country, the Team only visited 11 institutions in three provinces which were selected according to differences in project components (facilities improvement, equipment and ambulance procurement). There were also extended intensive discussions with the MOH and Regional / Provincial Health Service Delegations.

3. Results of the Evaluation (Overall Rating: B⁴)

3.1 Relevance (Rating: 3⁵)

3.1.1 Relevance to the Development Plan of Morocco

The MOH of Morocco introduced the “Health and Medical Policy 2005-2007” while implementing the “Health Action Plan 2003-2007” (*Plan d’action santé 2003-2007*), under which the Immunization Program, the Program for Maternity without Risk and the Comprehensive Disease Control Program for Children were implemented. Provincial hospitals and maternity units were also constructed under this Health Action Plan.

After the National Initiative for Human Development (*INDH: Initiative nationale pour le développement humain*⁶) was advocated in 2005 by the King of Morocco⁷, the MOH raised the improvement of access to maternal and child healthcare services to one of eight strategic targets for the alleviation of MMR and IMR. The improvement of perinatal care services and the enhancement of the referral system, which were objectives of this project, contributed to the MOH efforts to promote the Program for Maternity without Risk and to improve the access to maternal and child healthcare. The implementation of this project assisted them, to certain extent, in achieving their goal.

The Health Action Plan 2008-2012, which is currently being implemented, includes actions to promote MMR reduction, to expand maternal and child healthcare services, to implement a comprehensive maintenance plan, and to enhance maintenance workshops at regional level. It seems that there was no major change in policy direction after this project was implemented. INDH has also been extended without any major change in its direction, in which the health sector is integrated in the rural poverty reduction program (one among four prioritized programs).

3.1.2 Relevance to the Development Needs of Morocco

There was severe regional disparity of MMR in Morocco as of 2004. Earlier detection

⁴ A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

⁵ 3: High, 2: Fair, 1: Low

⁶ INDH’s objective is to save socially vulnerable people in both rural and urban areas

⁷ Mohammed VI (on the throne since 1999)

of high risk pregnancies and efficient and safe transfer to upper referral hospitals were immediate needs while medical facilities were decrepit and the shortage of medical equipment was severe. This project was to upgrade the facilities and equipment of 19 medical institutions in four provinces adjacent to Rabat and Casablanca, and to promote basic perinatal care services through the enhancement of target medical institutions providing primary and secondary medical care services in the target provinces. Furthermore, it was intended that this project would mitigate the concentration of patients at the University Hospital Centers of Rabat and Casablanca as these patients often bypassed primary and secondary medical care institutions and not all of them required the tertiary medical care service provided at the UHCs.

Although nation-wide MMR has shown a large improvement since the Basic Design Study was conducted in 2006 (as of this evaluation study (2010) it turned 112), regional disparity is still severe (urban areas: 73; rural areas: 148)⁸. The promotion of perinatal care services, the enhancement of the referral system and the improvement of medical facilities and equipment are still deemed to be required.

3.1.3 Relevance to Japan's ODA Policy

The GOM and the GOJ reached a consensus on prioritizing five sectors in their bilateral talks on economic cooperation in July 1999, in which 'rural development for the correction of regional disparity and the reduction of rural poverty' was set as one of the primary issues to tackle. "Social development assistance" was added later on as another prioritized sector. In its Country Assistance Strategy of 2004, JICA mentioned a future possible commitment to improving rural healthcare services as one of their development initiatives for lagging areas. The revised CAS of 2007 raised the mitigation of social and regional disparity as one development priority. The GOJ maintained the "improvement of healthcare services" as one of the components of 'the comprehensive development program for the interior area' in 2008 when this project was completed, and endorsed INDH as the basis of Japan's ODA for Morocco.

The objective of this project was thus coherent with both the priorities of Japan's ODA for Morocco and JICA's CAS from the project planning stage up to the present. Assistance for the health sector by other development partners as well as Japan have been well demarcated in terms of geographical location and contents. The European Investment Bank (EIB) and the France Development Agency (*AFD: Agence française de développement*) have provided assistance to health infrastructure development and technical assistance in different locations, and they do not exclusively focus upon perinatal care.

This project has been highly relevant to Morocco's development plan, development needs, as well as to Japan's ODA policy, therefore its relevance is high.

3.2 Efficiency (Rating: 2)

3.2.1 Project Outputs

3.2.1.1 Japanese Side

(1) Physical facilities

In response to a request for design change from the Moroccan side, the plan of Hassan II Regional General Hospital (HGR: Hôpital Général Régional) located in Settat province was largely changed in the detailed design stage after E/N was signed. This was not, however, to the extent that the expected healthcare service was adversely affected. Other changes were minor ones, and the total floor area of each facility remained almost as planned (See Table 2). Measures to reduce construction costs against the depreciated yen value were also taken in the project implementation stage⁹.

⁸ Ministère de la Santé, "Enquête nationale démographique à passages répétés (2009-2010) Principaux résultats" (14 mars, 2011)

⁹ The exchange rates were 1 USD = JPY 116.91 and 1 EUR = JPY 149.90 in August 2006 (monthly average) when

Table 2: Outputs of Physical Facilities

Province		
	Target Facility	Output
Kénitra		
	Maternity Unit, Al Idrissi Regional General Hospital	One-storied reinforced concrete building (outpatient dept, delivery rooms, operation rooms), total floor area: 913.73m ²
	Maternity Unit, Sidi Allal Tazi Health Center	One-storied reinforced concrete building, total floor area: 473.94m ²
	Maternity Unit, Sidi Yahia Health Center	One-storied reinforced concrete building, total floor area: 362.12m ²
Khouribga		
	Maternity Unit, Hassan II Provincial General Hospital	One-storied reinforced concrete building (outpatient dept, delivery rooms, operation rooms), total floor area: 896.47m ²
Settat		
	Maternity Unit, Hassan II Regional General Hospital	Three-storied reinforced concrete building (outpatient dept, delivery rooms, operation rooms, inpatient dept), total floor area: 2,496.60m ²

Source: Project Completion Report

(2) Medical equipment and ambulances

Medical equipment and ambulances were procured as planned (See Table 3).

Table 3: Outputs of Medical Equipment and Ambulances

Equipment for Hospitals (471 pieces of 37 items were procured for five hospitals and polyclinics)		
Section	Outpatient Dept.	Echography, examination table (gynecology), wheel chair, stretcher
	Delivery	Cardiac respiratory monitor, fetus detector, delivery table, electric vacuum extractor, autoclave, weighing scale (infant), delivery kit, electrocardiography
	Operation rooms	Defibrillator, operation table (obstetrics / gynecology), cardiac respiratory monitor, portable electrosurgical unit, operation light (with emergency power supply source), anesthetic apparatus (with respirator), scrub unit, suction unit, caesarian operation set, stainless treatment case set
	Sterilization	Double door autoclave
	Maternity intensive care	Cardiac respiratory monitor for adults, laryngoscope set (resuscitation set for adult), oxygen flow meter, hanging aspirator set, patient bed
	Neonatal intensive care	Infant incubator, phototherapy apparatus, cardiac respiratory monitor for infants, syringe driver, infusion pump, infant warmer (with resuscitation set), bilirubin meter
	Infant rooms	Plastic baby cot, infant warmer
Equipment for Health Center (158 pieces of 20 items were procured for eight health centers)		
	-	Plastic baby cot, dressing change set, delivery kit, episiotomy set, vaginal diagnosis set, wheel chair, fetus detector, autoclave, stainless treatment case set, resuscitation set (infant), examination light, infant warmer, delivery table, examination table, electric vacuum extractor, patient bed, weighing scale (infant), weighing scale (adult), oxygen concentrators, oxygen flow meter
Vehicle for patient transfer (eight vehicles were procured for eight polyclinics and health centers)		
	-	Ambulance

Source: Project Completion Report

E/N was signed. The depreciation of the yen accelerated after then to 1 USD = JPY 121.68 (-4%) and 1 EUR = JPY 157.98 (-5%) in January 2007 when the contractors signed the contracts. The lowest yen value in 2007 was 1 USD = JPY 125.95 and 1 EUR = JPY 170.56 (July).

The Moroccan currency (dirham, DH) was equivalent to JPY 13.61 in August 2006, and JPY 14.21 (-4%) in January 2007. (Source: Bank of Tokyo- Mitsubishi USJ (USD and EUR) and Bank of Al-Maghreb (DH))

The total number of pieces and items which were products from Japan and the third countries was more than planned, with the criteria for equipment selection all satisfied¹⁰. Most Japanese products were quite basic and did not require a high level of skills. Products from the third countries such as France and Spain are common in Morocco. Among the products procured from Japan, there was equipment with an English manual only¹¹. As the manual is part of the procured equipment, the local context of Morocco should have been better considered when selecting the language for the equipment manual. In Morocco, French is widely spoken, while Arabic is more often spoken in rural and remote areas.

(3) Soft component

A “Soft Component Program” was introduced in this project to supplement the operational training provided by the supplier, and to help the end-users (staff of the target institutions) understand the importance of maintenance and to establish a system which enabled them to perform daily maintenance procedures and repair work. It was implemented between January and March 2008 in the target provinces except in Sidi Kacem (See Table 4). There was no training in Sidi Kacem as equipment procured here, for a local hospital and a polyclinic, was only two ambulances and basic equipment which did not require a high level of skill to operate. Instead, staff members of the Regional Maintenance Bureau, who supervised the target institutions located in Sidi Kacem, were admitted among the participants for training held in Kénitra. Along with the program, management manuals for medical equipment (*manuel general de gestion des équipements médicaux*), medical equipment registration and management books (*rapport de la commission Marocaine sur les équipements médicaux*), and check sheets for users (*fiche de contrôle d'utilisateur d'équipement médicaux*) were provided in French.

Table 4: Soft Component Program and Participants

Unite: person

Province	Participants		
	Basic Seminar*	Basic Management Training for Medical Equipment**	Maintenance Training for End-users***
Kénitra	35	96	42
Khouribga	4	33	42
Settat	61	104	40
Total	138	233	124

Source: Soft Component Completion Report

Note 1: * Basic Seminar: Issues such as proper method of usage, safe treatment and economical operation of medical equipment were learned by end-users at the target medical institutions (venue: regional and provincial health service delegations).

Note 2: ** Basic Management Training for Medical Equipment: basic management technology was learned prior to the installment of medical equipment procured under the Project (venue: each target institution, target: end-users).

Note 3: *** Maintenance Training for End-users: Practical training on methods of use for major equipment procured under the Project (venue: each target institution, target: end-users)

3.2.1.2 Moroccan Side

The measures necessary for construction works by the Moroccan side were promptly taken. Tax exemption and custom clearance of imported goods and materials however took a

¹⁰ Equipment was to be selected, with mutual consent between the two countries, with the following criteria: (1) equipment that can be handled by branches or agencies located in Morocco; (2) equipment that does not often get broken or has a cost high for maintenance; (3) equipment that is easily maintained, and made by manufacturers with an established maintenance system in Morocco (4) equipment that is commonly used in Morocco, and (5) Equipment that can be procured within the E/N limit. See the Basic Design Study Report on the Project for the Improvement of Maternal Healthcare in Rural Areas (Phase 2) in the Kingdom of Morocco.

¹¹ Echography (Equipment List No. H-08. Confirmed at Ben Ahmed Policlinic in Settat Province).

certain amount of time due to the complicated procedures in the country.

3.2.2 Project Inputs

3.2.2.1 Project Cost: 3

The total project cost was approximately JPY 954 million, out of which JPY 950 million was spent from the treasury. The balance between total project cost and the treasury expenditure comes from the fact that construction works were not completed at the end of March 2008 when E/N expired, and the amount of money spent after the E/N expiry date was thus returned to the treasury. Both the total project cost and the treasury expenditure were lower than the E/N limit (See Table 5).

Table 5: Total Project Cost

Unit: thousand JPY

		E/N limit (A)	total project cost (B)	(B)/(A)	Amount returned to Treasury (C)	(D) =(B)-(C)	(D)/(A)
Consultant's Contract		91,000	91,000	100.0%	240	90,760	99.7%
	Physical facilities	-	70,000	-	240	69,760	-
	Equipment	-	14,000	-	0	14,000	-
	Soft component	-	7,000	-	0	7,000	-
Contractors' contracts	Physical facilities	647,000	647,000	100.0%	3,718	643,282	99.4%
	Equipment	234,000	216,529	92.5%	0	216,529	92.5%
Total		972,000	954,529	98.2%	3,958	950,571	97.8%

Source: Project Completion Report

3.2.2.2 Project Period: 2

Installment of all procured equipment had been completed as of March 19, 2008. Although the project completion certificate for physical facilities was issued on March 28, 2008, construction works continued until June 12, 2008 when the facilities were handed over to the Moroccan side. The project took 20 months from the E/N signing date to the issuance date of the project completion certificate, and 23 months from the E/N signing date to the actual date of project completion.

According to the project implementation schedule described in the Basic Design Study Report, it took five months to complete the detailed design, and another 13 months to complete construction works and the installment of the procured equipment. It was therefore anticipated that it would take 18 months to complete the project from the E/N signing date. Based on this, the project period is slightly longer than originally planned: 111.1% (20 months) and 127.8% (23 months)¹².

The major reasons why construction works took longer than planned were a shortage of construction materials, a delay in manufacturing fitting frameworks, a shortage of skilled workers (artisans and masons) and low level skills of local agencies installing air conditioners which led to a delay in installment works especially in and around the operation rooms of target hospitals.

Although the project cost was within the plan, the project period exceeded it and therefore efficiency of the project is fair.

¹² According to the ex-ante evaluation sheet disclosed by JICA, detailed design and tender procedure took 13.5 months. Compared to the project period, this is 148.1% up to the issuance date of project completion certificate, and 170% up to the actual completion date.

3.3 Effectiveness (Rating: 3)

3.3.1 Quantitative Effects

3.3.1.1 Perinatal Care Services

The facilities and equipment procured through this project are well utilized for outpatient care and delivery services at the target medical institutions and have contributed to the improvement in perinatal care service in the regions and provinces while the MOH has been promoting institutional delivery nationwide. The project objective, to improve the quality of perinatal care services provided at the medical institutions in four targeted provinces, has been achieved.

The outcome indicators set out at the ex-ante evaluation in 2006 and figures collected in the field study in March 2011 are shown below:



Picture 1: Health personnel taking care of a new born baby at Sidi Allal Tazi Health Center of Kenitra

(1) Increase in the number of deliveries at the target medical institutions

According to answers to the questionnaire, the total number of deliveries at all target institutions as of 2010 exceed the target figures set out in the basic design study of 2006.

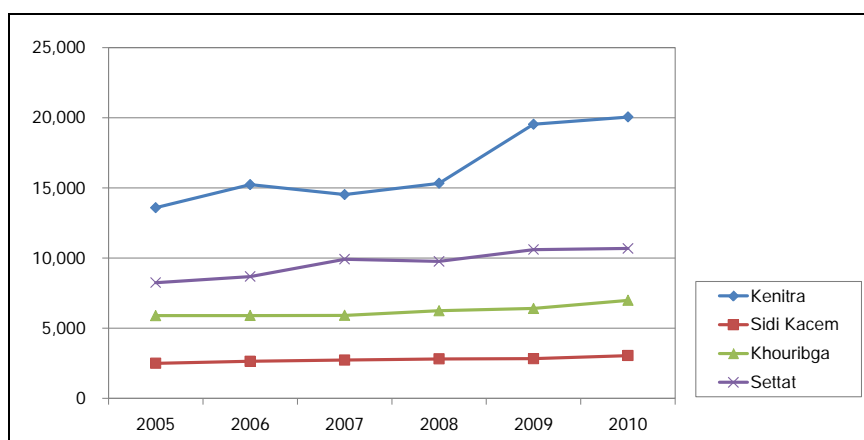
Table 6: Total Number of Deliveries at the Target Institutions

	2005	2010
As at the basic design study of 2006	28,884	33,500 (target)
Actual data collected in March 2011	29,107	40,770 (actual)

Source: Basic Design Study Report and answers to the questionnaire

Starting in 2008, delivery costs including the cost of transfers by ambulance for institutional deliveries as well as relevant tests such as echography, became free of charge in Morocco, which promoted institutional delivery nationwide. This free access to maternal healthcare has helped achieve a higher number of institutional deliveries than targeted.

A glance at the number of institutional deliveries by province between 2005 and 2010 shows a gradual increase (Figure 1), among which the increase in Kénitra is most tangible (approximately 6,500 cases) followed by Settat (approximately 2,400).



Source: Ministère de la Santé, "Santé en chiffres" and answers to the questionnaire

Figure 1: Number of Deliveries by Target Institution by Province

An outcome commonly admitted in all four provinces is the sharp increase in the number of deliveries at hospitals and polyclinics. There is, however, no common outcome to health centers. In Kénitra, the increase of transfers from target health centers to upper referral hospitals made deliveries at health centers decrease. In Khouribga, on the contrary, the number of deliveries at health centers increased. In Settat, the situation is different from one health center to another.

The number of women of reproductive age¹³ in the target four provinces increased from approximately 0.87 million (2005) to 0.97 million (2010)¹⁴, while the number of births does not show a large change (70 thousand in 2005 and 73 thousand in 2010)¹⁵ (Table 7). This project has contributed to an increase in the accommodating capacity of the target institutions through improving their maternity units so that they can cope with the rapid spread in deliveries at hospitals and polyclinics.

Table 7: Comparison of Population, Number of Women of Reproductive Age, Number of Births and Number of Deliveries in the Four Provinces (2005 and 2010)

Province	2005				2010			
	Population	No. of women of reproductive age	No. of expected births	No. of deliveries	Population	No. of women of reproductive age	No. of expected births	No. of deliveries
Kénitra	1,183,000	314,551	25,170	13,187	1,264,000	358,790	24,609	20,049
Sidi Kacem	696,000	180,258	15,563	6,272	703,000	195,977	14,671	9,750
Khouribga	501,000	136,710	9,686	7,534	505,000	144,348	10,284	9,558
Settat	966,000	240,166	20,160	12,118	1,001,000	272,872	23,429	14,498
Total	3,346,000	871,685	70,579	39,111	3,473,000	971,987	72,993	53,855

Source: Ministère de la Santé, "Santé en chiffres 2006" and information provided by the MOH.

(2) Increase in number of referral cases for high risk pregnant women and transfer by ambulance

The MOH of Morocco has actively promoted prenatal and postnatal health checkups in recent years. Pregnant women visit the nearest health center to their home carrying their "Health Card for Women" (*Carnet de Santé de la Femme*) for prenatal health checkups around four times before delivery. If any problem is found, they then visit upper referral hospitals for a detailed examination. Table 8 shows the extent to which target hospitals have accepted high risk pregnant women.

Table 8: Number of High Risk Pregnant Women Transferred to Target Hospitals

	2005	2006	2007	2008	2009	2010
Al Idrissi Regional General Hospital in Kénitra						
Number of inpatient pregnant women	6,263	6,751	7,504	9,255	10,224	11,054
Out of which high risk cases	1,660	1,850	2,291	3,262	285	473
Number of outpatient pregnant women	1,502	1,367	1,427	2,156	12,137	11,761
Out of which high risk cases	n.a.	n.a.	n.a.	n.a.	1,296	1,266
Hassan II Provincial General Hospital in Khouribga						
Number of inpatient pregnant women	5,148	5,113	5,014	5,337	5,629	5,675
Out of which high risk cases	2,067	2,521	2,411	3,044	2,936	2,897

¹³ Women aged from 15 years old to 49 years old

¹⁴ Ministère de la Santé, "Santé en chiffres 2006".

¹⁵ Information collected from the MOH in the field study.

	2005	2006	2007	2008	2009	2010
Number of outpatient pregnant women	1,355	1,512	1,948	2,868	1,227	1,332
Out of which high risk cases	51	284	257	332	274	320
Hassan II Regional General Hospital in Settat						
Number of inpatient pregnant women	8,948	8,944	9,287	11,058	11,638	11,041
Out of which high risk cases	964	1,025	942	1,014	1,011	1,247
Number of outpatient pregnant women	13,601	15,557	14,666	15,892	17,227	17,300
Out of which high risk cases	795	931	1,144	1,049	1,181	1,568

Source: Answers to the questionnaire

While access to medical institutions for women in rural areas has been improved, this project has added value and contributed to an expansion in the acceptance capacity for high risk pregnant women at the target hospitals. Except at Al Idrissi HGR in Kénitra, the number of inpatient high risk pregnant women at each institution showed an increase in 2008 and a moderate increase has continued since 2009.

Ambulances were procured at eight medical institutions under this project to enhance the emergency transfer system. Free transfers were officially declared in 2008 and transfers for pregnant women were accepted for 24 hours. In 2005, 964 pregnant women were accepted at Hassan II HGR in Settat, and the number of referral cases has been on a gradual increase as seen in 2010 (1,247 cases). However, the situation is different from one health center to another and there are no common features.



Picture 2: Procured ambulance at Bni Khलग Health Center

(3) Increase in the number of operations

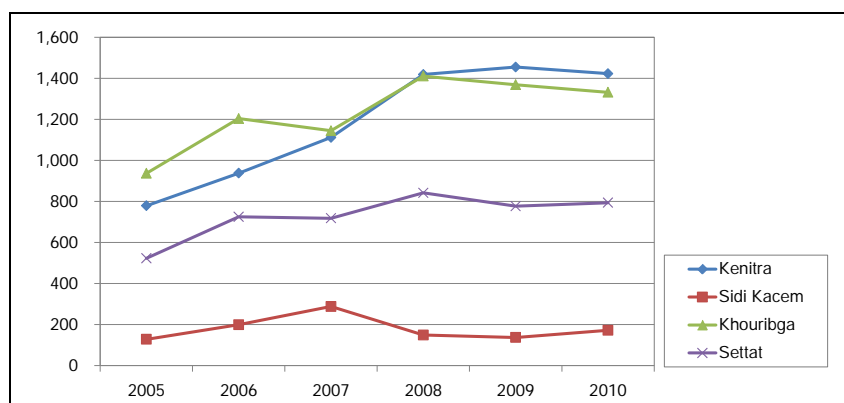
According to answers to the questionnaire collected in March 2011, the number of caesarians at the target medical institutions exceeded the target figures set out in the basic design study of 2006.

Table 9: Total Number of Operations at Target Institutions

Indicators	2005	2010
Figures set out at the time of planning (basic design study in 2006)		
Caesarians	2,164	3,000
Gynecological operations	2,499	3,000
Data collected in the field study (March 2011)		
Caesarians	2,416	3,721
Gynecological operations	n.a.	n.a.

Source: Basic Design Study Report and answers to questionnaire

Caesarians are held at hospitals and polyclinics where obstetricians are allocated. Caesarians have increased between 2005 and 2010 (See Figure 2), seen most clearly in Kénitra and Khouribga.



Source: Ministère de la Santé, "Santé en chiffres" and answers to the questionnaire

Figure 2: Number of Caesarians at Target Institutions by Province

The project, along with the better acceptance of high risk pregnant women, has contributed to improvements in the operation environment at target hospitals and polyclinics.

3.3.1.2 Improvement of the Perinatal Care Service System

In addition to the above, the expansion of the perinatal care service at target institutions is also one of outcomes of the project which has led to the achievement of the project objective. However, the degree to which the service has improved differs among institutions, and there is an apparent gap in the extent to which the project outcome is achieved. There would have been a greater impact if the expansion of system, such as the allocation of enough staff to handle the facilities and equipment procured under the Project, and to meet the requirement for providing perinatal care service, had been made in a timely manner. The Moroccan side has achieved the following in institutional capacity development

(1) Expansion of the number of gynecology beds and delivery tables

A forecast was made in the basic design of the number of beds required for a 48-hour stay after delivery. Based on this estimate, 29 beds were newly added to the existing ones in the building designs for the Hassan II HGR in Settat, the Sidi Allal Tazi Health Center and the Sidi Yahia Health Center of Kénitra. However, free access to perinatal care service boosted the number of deliveries at hospitals and polyclinics, which led to the Moroccan side further increasing the number of beds.

According to data obtained in this evaluation, the number of gynecology beds and delivery tables has shown a gradual increase through budget allocation by the Moroccan side (Table 10).

Table 10: Number of Beds at Maternity Units and Delivery Tables by Province

Province	2005		2010	
	Number of Beds	Number of Delivery Tables	Number of Beds	Number of Delivery Tables
Kénitra	119	16	148	18
Sidi Kacem	33	11	89	21
Khouribga	117	13	125	20
Settat	70	13	126	30

Source: Answers to questionnaire

The Al Idrissi HGR in Kénitra and the Hassan II HGR in Settat have further increased the number of gynecology beds to meet the requirement for the 24-hour stay after delivery (from 66

(2005) to 92 (2010), and from 44 to 86 respectively), while number of delivery tables has shown a slight increase. There has not been a large increase in the number of beds and delivery tables at health centers. Health centers do not have kitchens where meals can be cooked to serve to pregnant women and their accompanying families, and some women leave centers a few hours after delivery without receiving the proper guidance for postnatal and infant care. This suggests that the degree of safe institutional delivery does not merely rely on the number of beds and delivery tables¹⁶.

(2) Allocation of health personnel

The sufficient allocation of appropriate staff is, along with the improvement of facilities and equipment, one of the key issues for the enhancement of perinatal care services. An increase in the allocation of health personnel (nurses for obstetrics and midwives) was seen at all target institutions in Sidi Kacem and Khouribga, while number of obstetricians remained unchanged. Although the number of medical and paramedical personnel, particularly at hospitals and polyclinics, was decreasing between 2005 and 2010 in Kénitra and Settât, the field study confirmed that perinatal care services had been expanded by the existing staff.

The burden of work shouldered by obstetricians and midwives has grown, and it is high time that the number of staff is increased. Due to shortages and decreases in the number of paramedical personnel, some equipment procured under this project has not been used at all since installment. The same problem also goes for the use of ambulances. Procured ambulances are properly made use of for transferring patients at target health centers and this has contributed to enhancing the emergency reference system. However, the number of drivers allocated by the MOH is limited and some centers are not able to provide a 24-hour transferring service.

Due to the fact that there is no security staff allocated at health centers, some pregnant women avoid staying overnight and instead directly visit HGPs and HGRs for delivery.

Table 11: Number of Doctors and Health Personnel at Target Institutions by Province

Province	2005		2010	
	No. of medical personnel	No. of paramedical personnel	No. of medical personnel	No. of paramedical personnel
Kénitra	22	91	13	80
Sidi Kacem	2	19	2	25
Khouribga	8	30	10	40
Settât	22	63	17	57

Source: Answers to questionnaire

(3) Efforts to sustain the emergency transfer system

Ambulances were procured under the project for the enhancement of the emergency transfer system. Among the health centers where ambulances were procured, Bni Khloug Health Center of Settât has only one driver allocated by the MOH, which means that nobody uses the ambulance except during the day on weekdays. Instead, the local community provides another ambulance for emergency cases in the evenings and at weekends to secure a 24-hour service. A free drive to an upper referral hospital is not always available due to the shortage of budget allocation for fuel, resulting in patients having to pay the cost¹⁷.

Health centers make good use of the existing resources to sustain the emergency transfer system. Local community ambulances are often used at those health centers where no

¹⁶ Confirmed at Bni Khloug Health Center of Settât Province.

¹⁷ Settât Provincial Health Service Delegation provides DH 500 for fuel, which enables patients to be carried from the health center to Hassan II HGR only three times. Journeys after this are paid for by patients.

ambulance was procured under the project as a means of emergency transfer when needed¹⁸. There is one health center which has a contract with a private ambulance service¹⁹.

3.3.2 Qualitative Effects

The following outcomes were set out for the soft component program when the project was designed.

- Expected Outcomes of the soft component program (at the time of planning in 2006)
- a) A reduction in the number of repair cases; need for repair detected earlier;
 - b) Shortened periods for repair and less left unrepaired as the Engineering and Hospital Management Bureau will always manage the condition of equipment at lower medical institutions;
 - c) Appropriate actions taken at an early stage of repair to avoid fatal errors

Source: Basic Design Study Report, p.89

These were, however, not confirmed when the soft component program was over in March 2008. This is because, due to the delay in construction works, the program was implemented before the installment of all equipment. It did not allow the program to be implemented based on the end-users' technical needs, which should have been identified in advance by practicing equipment operation.

However, as the outcome should be observed for certain period in order to see the degree of impact, and the Evaluation Team examined it as qualitative impact.

Although not a direct impact of this project, it was confirmed at the time of the field study of this post evaluation, that the MOH had been enhancing its maintenance capacity assisted by the World Bank (WB) and AFD. Although daily maintenance by end-users was not confirmed in the field study, the Regional Maintenance Bureau regularly checks the condition of equipment at medical institutions in the region and provinces, and each institution also tries to respond to the Bureau promptly. Regional hospitals and provincial hospitals are located in the same compound as the Bureau, and they deal with day-to-day maintenance works using the allocated recurrent budget and full time staff for maintenance. On the other hand, the early detection of the need for repair is not always appropriately and promptly achieved at health centers, and repair and maintenance sometimes takes a considerable time. This is mainly for non-technical reasons: the recurrent budget for maintenance is not allocated directly to health centers; the number of staff at the Bureau does not match the number of health centers that staff have to deal with, and the number of vehicles for visiting centers and carrying equipment for external repair work is limited.

During the field study, it was observed that the target hospitals do not regularly use the equipment manuals, registration books and check lists provided during the soft component program. It is because they manage not only the procured equipment but all equipment using a database, based on which end-users are guided by the Bureau for day-to-day maintenance.

Health centers, on the other hand, tend to keep the manuals, registration books and



Picture 3: Registration book made use of at Oulad Azzouz Health Center of Khouribga

¹⁸ Oulad Azzouz Health Center of Khouribga

¹⁹ Sidi Yahia Health Center of Kénitra

check lists to hand. The reason is that health centers do not have a lot of equipment other than the procured equipment, which makes managing the equipment easier. Also, the frequency of monitoring by the Bureau is low, which means that health centers can be more independent in managing their own equipment. In the near future, however, they may not use the documents provided in the soft component program as often as they presently do should databases for the procured equipment become more comprehensive along with others from the Bureau to check the exact condition of equipment and its frequency of use. This will be to manage equipment according to its length of usage, and to thoroughly train end-users for day-to-day maintenance.

This project has largely achieved its objectives, therefore its effectiveness is high.

3.4 Impact

3.4.1 Intended Impacts

The immediate outputs of the project, i.e. the improvement of facilities, equipment and ambulances for perinatal care services, have contributed to sustaining the institutional capacity of target institutions to meet the increased needs for perinatal care services. These increases have been caused through free access to perinatal care service, the spread of the Health Card for Women, and raised awareness among pregnant women and their families about the importance of prenatal and postnatal care. The project's outputs have also contributed to the MOH's initiative to enhance the perinatal care service system.

As a result, the project has contributed to an improvement in the quality of the maternal health care services under the Program for Maternity without Risk in which MMR reduction is targeted. The logic model of the project impact is shown in Figure 3.

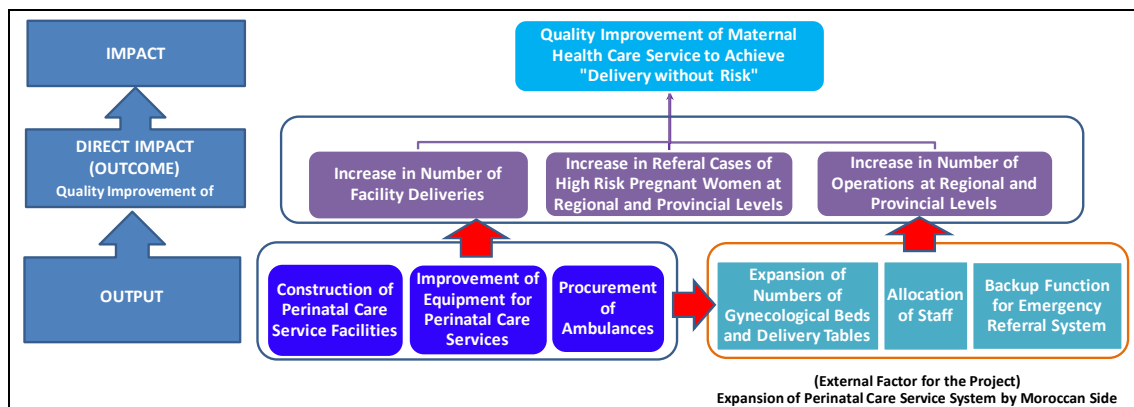


Figure 3: Logic Model of Project Impact

3.4.2 Other Impacts

3.4.2.1 Impacts on the natural environment

Of the target institutions of the Project, hospitals treat medical wastes separately. Infectious waste is sterilized, washed or disposed of on site, and general waste is disposed of on site or collected by the public service. Health centers in Khouribga also separate medical and infectious wastes for incineration, sterilization, washing or disposal. Health centers in other provinces do not always do the same. One health center disposes of syringes through special treatment²⁰, but others don't.

There is future space for improvement including the raising of awareness and the establishment of regulations for the thorough treatment of medical and infectious waste at health centers.

²⁰ Soualem Health Center in Settatt Province (confirmed in the field study).

3.4.2.2 Land Acquisition and Resettlement

Five facilities improved under the project were within an existing compound, and thus there was no involuntary resettlement or land acquisition. The procurement of equipment and ambulances also did not require either resettlement or land acquisition.

3.4.2.3 Other Indirect Impact

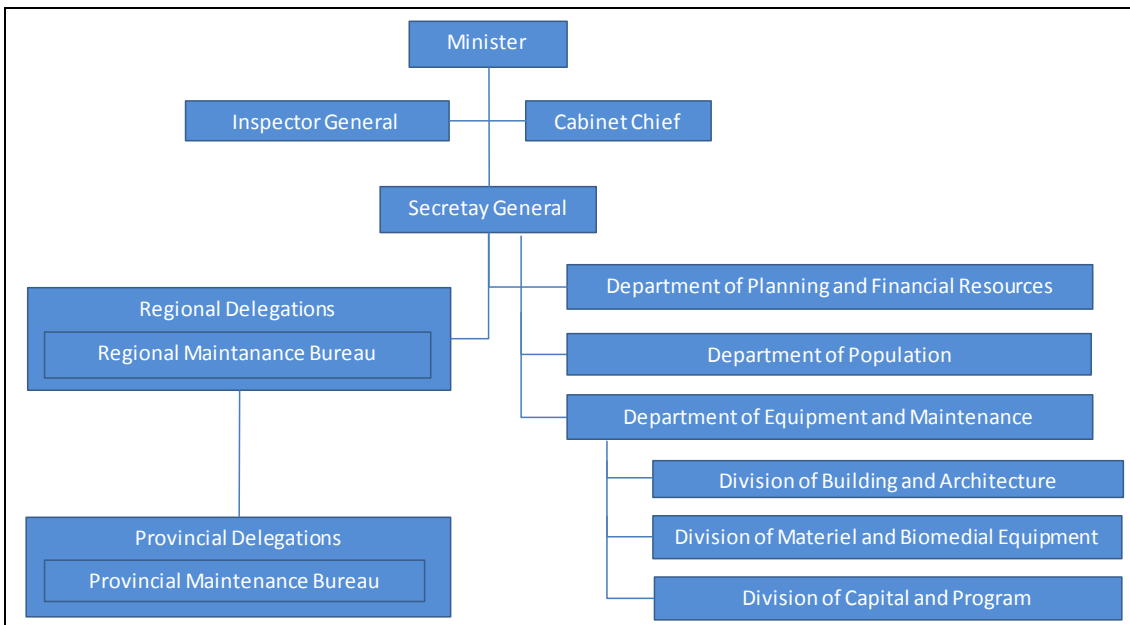
Not specified.

3.5 Sustainability (Rating: 2)

3.5.1 Institutional Aspects of Operation and Maintenance

It is the Department of Equipment and Maintenance (*Direction des Equipements et de la Maintenance*) of the MOH which supervises the project. The MOH started to promote decentralization and restructuring in the middle of the 2000s, and the maintenance budget for physical facilities and equipment is now allocated to the Regional Health Service Delegation (*Delegation régionale de la santé*). The Regional Maintenance Bureau manages budget expenditure, deals with contract procedures with agencies for equipment maintenance, and provides technical advice to the Provincial Maintenance Bureau and provincial hospitals and health centers.

Hospitals are mandated to select and purchase new equipment up to a certain amount, whereas health centers do not have their own maintenance budget, and have to wait for the approval of Regional and Provincial Health Service Delegations. They also need to get approval when they dispose of equipment.



Source: Answers to questionnaire

Figure 4: Related Departments of MOH and their Organization

As of March 2011, full time technical staff for facility and equipment management are allocated at each region and province. It is the Provincial Maintenance Bureau which handles the management of health center facilities and equipment.

Table 12 shows staff allocation details for 2005 and 2010 at the target regions and provinces.

Table 12: Staff Allocation at Target Regions and Provinces

	2005				2010			
	Facility		Equipment		Facility		Equipment	
	Engineer	Technician	Engineer	Technician	Engineer	Technician	Engineer	Technician
Gharb- Chrarda- Béni Hssen Regional Maintenance Bureau (located in Kénitra)	1	7	cum	cum	3	7	cum	cum
Provincial Maintenance Bureau in Sidi Kacem	0	4	0	2	1	6	0	3
Provincial Maintenance Bureau in Khouribga	2	6	cum	cum	3	6	cum	cum
Chaouia- Ouardigha Regional Maintenance Bureau (located in Settat)	0	2	2	1	0	5	2	1

Source: Answers to the questionnaire and interviews in the field study

Note: Gharb- Chrarda- Béni Hssen Regional Maintenance Bureau and Chaouia- Ouardigha Regional Maintenance Bureau are located next to (or within the same compound as) Al Idrissi HGR and Hassan II HGR respectively, and supervise whole regions and medical institutions in the provinces where they are located (Kénitra and Settat).

Out of the target institutions, hospitals regularly perform monitoring of equipment condition and database development. They develop annual plans of action and pay visits quarterly or semi-annually in order to check the condition of equipment for prevention care and repair. A database is being developed retroactively.

It is worth pointing out that it is AFD which has long supported the MOH in improving maintenance and management systems for health infrastructure. They have assisted through “the Program on Regionalization, Decentralization and Reinforcement of Basic Healthcare” (*Regionalisation, a la decentralization, et au renforcement des soins de santé de base*) training personnel for maintenance and establishing maintenance systems. Equipment management through registering with barcodes, database development and data sharing systems have been promoted nationwide. Moreover, due to decentralization, decision making takes place promptly at regional and provincial level, including procedures for agency contracts and repair requests. Hospitals conclude equipment maintenance contracts with agencies. Agencies visit hospitals to detect problems and repair minor ones on site, bringing back equipment for major repairs. On the other hand, facilities and equipment at health centers are often left as they are, as long as for a few months, because of staff constraints of the Maintenance Bureau and difficulties in their travel to remote areas²¹.



Picture 4: photo taken at Gharb- Chrarda- Béni Hssen Regional Maintenance Bureau. Equipment is registered with barcode system.

3.5.2 Technical Aspects of Operation and Maintenance

A school system has now been established in Morocco where students learn both the

²¹ Electricity distribution had been disturbed due to line disconnection at Sidi Allal Tazi Health Center in Kénitra province for three months as of March 2011.

knowledge and practice to be qualified as biomedical engineers and technicians. Furthermore, the Department of Equipment and Maintenance of the MOH provides training opportunities for secondary level engineering staff to learn how to operate and maintain equipment such as anesthetic apparatus, defibrillators and mammograms. As is often the case, development partners provide financial and technical assistance for technical training on medical equipment and maintenance. The number of training courses, trainees and days differs by year. Lecturers are mostly technical staff from suppliers. Foreign technical staff also provide training opportunities.

Table 13: Technical Training Opportunities

	2005	2006	2007	2008	2009	2010
Number of Training opportunities	9	5	5	n.a.	1	8
Total number of trainees	125	69	55	n.a.	8	86
Total number of days for training	20	8	6	n.a.	1	36

Source: Information provided by the Department of Equipment and Maintenance of the MOH.

End-users at target institutions learn overall to remember the methods of equipment usage. Those who already have equipment usage training teach others who have not. Engineers allocated at target hospitals often communicate with end-users and guide them in finding the root cause of breakdowns and advising them of what to be aware of for better maintenance.

3.5.3 Financial Aspects of Operation and Maintenance

Budgets for purchasing new equipment and for equipment maintenance are directly allocated to hospitals. Equipment to select is mandated and the amount of budget differs from hospital to hospital²². Al Idrissi HGR in Kénitra has a recurrent budget of as much as DH 4 million for purchasing new equipment. The amount of its maintenance budget is not confirmed. Hassan II HGR in Settat had a maintenance budget of as much as approximately DH 0.85 million in 2008, DH 1.6 million in 2009 and DH 1.2 million in 2010, although more was spent on equipment than facility maintenance. Hassan II HGP of Khouribga spent DH 9,800 on facility maintenance (2010), which was not sufficient for equipment maintenance. Requests are made on an ad-hoc basis to provide budgets to purchase new equipment and to maintain facilities at health centers.

There is no plan to replace equipment periodically according to equipment life-span, and no budget systematically reserved for replacement. Serious trouble in equipment operation due to ageing could be avoided through saving budget regularly and purchasing new equipment to replace old in a timely manner.

3.5.4 Current Status of Operation and Maintenance

Institutional and technical aspects of operation and maintenance at hospitals are good. There is budget for maintaining existing equipment and for purchasing new equipment, and facilities and equipment procured under the project do not face major problems. Engineers and technicians check equipment condition, and take prompt action for minor problems and repairs.

There is a wider gap among health centers in terms of the condition of facilities and medical equipment. Delays have been found in repair works. There is no full time maintenance staff allocated at health centers and no budget allocated either, which means they must wait until the Maintenance Bureau or the Provincial Health Service Delegation take any action, and this not always done in a timely way. Some equipment is not operated due to a shortage of consumables. There is space for future improvement to further decentralize authorities at ground level, along with the present structure and budget allocation.

²² However, the Department of Equipment and Maintenance still purchase expensive equipment.

End-users clean equipment at the end of the day to remove dust and dirt. They also change small parts such as lamps and screws. Daily maintenance however is not thoroughly applied. Actions such as the early detection of minor problems, the establishment of maintenance methods, and the avoidance of equipment breakdown are not always carried out sufficiently.

Some problems have been observed in terms of structure, budget and maintenance. Therefore the sustainability of the project effect is fair.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The project is consistent with Morocco's health sector development plan and development needs and with Japan's ODA policy for Morocco, and its relevance is thus proved to be high. The project period, however, was prolonged due to the delay in construction works, which meant that project efficiency was fair. The Project has added value to the efforts by the Ministry of Health to improve perinatal care service, and its efficiency is proved high. Although improved, there remains a certain disparity among target institutions in their institutional and technical management capacity for operation and maintenance. The security of a sufficient recurrent budget and its direct allocation to health centers for facility maintenance could be further pursued.

In light of the above, this project is evaluated to be satisfactory.

4.2 Recommendations

The Evaluation Team has drawn up the following recommendations for further effective use of facilities and equipment improved under the Project.

4.2.1 Recommendations to the Executing Agency

4.2.1.1 Further Decentralization of Budget Allocation

There is no recurrent budget for maintenance directly allocated at health center level, and management of physical facilities still has space for improvement. Unlike at hospitals, it is the Provincial Maintenance Bureau which conducts the operation and maintenance of health center facilities, and delays are observed even in minor and easy repair works. Deterioration in facilities and equipment can adversely affect their day-to-day operation. It is recommended that direct budget is allocated for maintenance at health centers to further raise the project impacts from a longer-term point of view.

4.2.1.2 More Effective Use of the Existing Resources within the Present Budget

The MOH initiatives have promoted institutional delivery nationwide including in the target provinces. The present number of beds and allocated staff members do not meet the needs, which means that the procured facility and equipment are not used as effectively as expected. While staff allocation is urgent for the further promotion of institutional delivery, the following measures could be taken if no major budget increase is confirmed.

(1) Provision of meals for pregnant women and their families

In order to secure good health for pregnant women, kitchen facilities could be further expanded at health centers catering services introduced for their 48-hour stay after delivery. It is also recommended that meals are also provided to their accompanying families too in order to provide incentives to bring pregnant women to health facilities for delivery and thus to increase their understanding of institutional delivery.

(2) Reallocation of doctors and health staff

It is recommended that further improvements are made in the allocation of existing resources for more effective use. A reconsideration of the present allocation of medical staff as well as their work is an example of this.

(3) Mobilization of personnel from local the community

Local volunteers can be called in from communities for the security control of health centers to drive ambulances thus securing pregnant women's safety and 24-hour transfers to upper referral institutions.

4.2.2 Recommendations to JICA

Not specified.

4.3 Lessons Learned

When planning grant aid projects which target the improvement of medical institutions and equipment with a programmatic approach, it is recommended that JICA take into consideration the following:

4.3.1 Strategic Screening of Target Institutions based on Project Objectives

This project covered as many as 19 medical institutions spread over four provinces. It took a long time before designing facilities and equipment, to create a set of selection criteria for target institutions in accordance with the project objectives, to analyze local needs for perinatal care services, staff allocation and the accommodating capacity of each institution, then finally to short-list target institutions and examine the project component of finance. Sufficient time for the whole planning process and discussion with the recipient country should be taken for granted.

Technical examinations for the design of facilities and equipment was achieved within a short period in the field study of the basic design study of this project, and thus some component designs did not match staff allocation or accommodating capacity. In order to secure outcomes in similar projects in the future, more opportunities for discussion with the recipient country and more time allocation for technical examinations on site should be considered. Possible options to take might include field studies to be conducted more than twice, and/or complete site selection before basic design study starts.

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