

**Ex-Post Project Evaluation 2013: Package II-2  
(Morocco · Jordan)**

**December 2014**

**JAPAN INTERNATIONAL COOPERATION AGENCY  
Earth and Human Corporation**

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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 2011, and Technical Cooperation projects and Grant Aid projects, most of which project cost exceeds 1 billion JPY, that were mainly completed in fiscal year 2010. 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.

December 2014  
Toshitsugu Uesawa  
Vice President  
Japan International Cooperation Agency (JICA)

## Disclaimer

This volume of evaluations, the English translation of the original Japanese version, shows the result of objective ex-post evaluations made by external evaluators. The views and recommendations herein do not necessarily reflect the official views and opinions of JICA. JICA is not responsible for the accuracy of English translation, and the Japanese version shall prevail in the event of any inconsistency with the English version.

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Kingdom of Morocco

Ex-Post Evaluation of Japanese ODA Loan

Rural Secondary Education Expansion Project

External Evaluator: Machi KANEKO, Earth and Human Corporation

## 0. Summary

Through construction of 101 secondary schools in the five regions in Morocco where most of their rural areas<sup>1</sup> had higher poverty index<sup>2</sup>, this project was intended to expand their secondary education coverage and facilitate efforts to redress urban-rural and gender disparities in access to education.

Both at the time of the project's appraisal and the ex-post evaluation, the Government of the Kingdom of Morocco (hereinafter referred to as "the Government") has put broader access to secondary education in rural areas as a key development agenda. The project has been highly consistent with the country's development plan, development needs, as well as Japan's ODA policy. Therefore its relevance is high.

At the time of the ex-post evaluation, 98 secondary schools<sup>3</sup> provided by the project (hereinafter referred to as the "target schools") are operated where approximately 48,000 students are enrolled. This accounts for 20% of the total number of students (about 240,000<sup>4</sup>) who are enrolled in public secondary schools in rural areas of the five target regions.

Indicators measuring effectiveness of the project have mostly achieved the expected objectives in terms of its effectiveness. Namely, access to secondary education has been increased over the rural areas, the age specific enrollment rates among 12- to 14-year-olds improved, and the number of girl students enrolled in secondary schools also increased. Although urban-rural disparities in the enrollment rates remain, the expansion of secondary education in the five target regions will have a positive impact on equitable access to secondary schooling (by redressing urban-rural and gender disparities). Given that the project has mostly produced its effects as intended, its effectiveness and impact is high.

Although the project cost was within the plan, the implementation period significantly exceeded the plan. Therefore, the efficiency is evaluated to be fair. Under the supervision of the Regional Education and Training Academy (Académie Régionale de l'Education et de la

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<sup>1</sup> According to its new administrative divisions defined in 2009, Morocco is divided into 16 regions, further broken into 75 prefectures and provinces (13 prefectures and 62 provinces) and 1,503 communes. The last are divided into 221 urban communes and 1,282 rural communes. The project has implemented secondary school construction in the latter. In this report, urban communes are referred to as "urban areas," and rural communes as "rural areas."

<sup>2</sup> Poverty index is calculated based on the "Poverty Criteria by Region" expressed as percentage of the poor people at the regional level, which is set out by the Agency of Social Development of Morocco using seven indicators including enrollment rates (national and female respectively), literacy rates (national and female), unemployment rates, coverage of water supply and electricity.

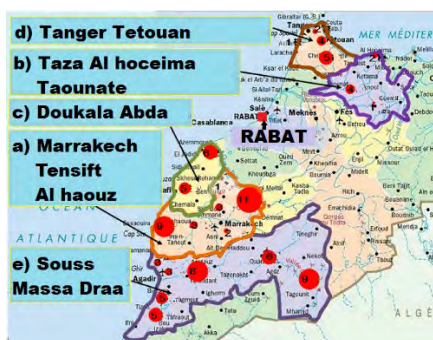
<sup>3</sup> Of 418 public secondary schools in the rural areas of the five target regions, 98 (23%) or nearly one in five schools have been constructed by the project.

<sup>4</sup> According to the educational statistics for 2012/2013, a total of approximately 240,000 students were enrolled in public secondary schools in the rural areas of the five target regions.

Formation, hereinafter referred to as “AREF”) in each target region, Provincial Delegations and the target schools have developed in partnership an institutional setting for operation and maintenance of the project. No major problems have been thus observed in the institutional, technical and financial aspects associated with operation and maintenance. Therefore sustainability of the project effect is high.

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

## 1. Project Description



Project Locations (Five target regions)



Sidi Boutmim Secondary School in Al Hoceima province of Taza Al Hoceima Taounate region

### 1.1 Background

Embarking on a reform of the educational system in 1985, Morocco has been working for improvement of the educational sector. However, the Ministry of National Education at that time conducted an assessment of the reform progress in 1998-99<sup>5</sup>, and its findings revealed the country’s educational indicators including the enrollment rates had not been much improved. Given such outcome, the Government set up the Special Committee on Education and Training, and declared the National Education and Training Charter (Charte Nationale de l’Education et de la Formation, hereinafter referred to as “CNEF”) in 1999, which has become the foundation of Morocco’s educational policies. Announcing the “Decade for Education and Training” for a period from 1999 through 2009, CNEF set forth key priority areas in broadening the coverage of compulsory education (primary and secondary schooling) and quality improvement as well as decentralization of education.

In addition, Morocco had urgent needs at that time to develop human resources essential to generate employment through investment promotion and industrial diversification, while also redressing regional disparities. In particular, nearly 70% of the country’s poor population<sup>6</sup>

<sup>5</sup> An academic year in Morocco begins in September and ends in June. In this report, the one that begins in September in 1998, for example, is indicated as “1998/99.”

<sup>6</sup> The poor population presented in this report refers to the population of the regions with high poverty index

reside in the rural areas, and in 1998/99, 64.3% of such group did not complete primary schooling. Given these backgrounds, redressing local disparities in access to education required a special attention as a priority agenda. Also, in some of the rural areas, secondary schools had not been provided within a reasonable distance for children. This was one of the barriers for poor people to attend school.

To address these problems, the project was implemented to construct secondary schools in rural areas in Morocco.

## 1.2 Project Outline

The objectives of this project were to expand secondary education coverage and redress urban-rural and gender disparities in access to education in these areas, through construction of 101 secondary schools in the rural areas of the five target regions of Morocco thereby contributing to raising living standards of the people.

Loan Approved Amount/ Disbursed Amount	8,935 million yen / 6,647 million yen
Exchange of Notes Date/ Loan Agreement Signing Date	March 2004 / March 2004
Terms and Conditions	Interest Rate 0.9%, Repayment Period 20 years (including 6 years of Grace Period) Procurement: General Untied
Borrower / Executing Agency	The Government of the Kingdom of Morocco / Ministry of National Education and Vocational Training (MENFP)
Final Disbursement Date	September 2011
Main Consultants	Nippon Koei Co., Ltd. (Japan) Conseil, Ingenierie et Developpement (Morocco) (JV)
Related Projects	JICA Technical Cooperation Project: “The Basic Education Improvement Program for Rural Area in Morocco” (September 2003-January 2006) “Equitable Education Promotion Project in Morocco” (July 2014-July 2018: expected) Japanese ODA Loan: “The Basic Education Sector Support Project” (L/A signed in September 2013) (co-funded with the World Bank) Projects of Other Donor Agencies: World Bank “Social Priorities Program” (1996-2003) EU “Basic Education Programme” (Phase 1 :2000-2002, Phase 2: 2003-2006)

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provided in the “Poverty Criteria by Region.”

	African Development Bank (AfDB) “Quality Basic Education Support Project (in an amount of approximately 7.6 billion yen)” (2001-2007)
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## 2. Outline of the Evaluation Study

### 2.1 External Evaluator

Machi Kaneko, Earth and Human Corporation

### 2.2 Duration of Evaluation Study

This ex-post evaluation was carried out in the following schedule.

Duration of the Study: September 2013 – December 2014

Duration of the Field Study: January 17 – February 11 and April 17 – May 11, 2014

## 3. Results of the Evaluation (Overall Rating: A<sup>7</sup>)

### 3.1 Relevance (Rating: ③<sup>8</sup>)

#### 3.1.1 Relevance to the Development Plan of Morocco

##### (1) Development policies at the time of the appraisal

At the appraisal phase, the Government was implementing “Social and Economic Development Plan (2000-2004)” as its national development policy with the objectives of (i) redressing disparities in rural development among communities, (ii) employment generation through investment promotion and industrial diversification, and (iii) policy implementation to address poverty, human resource development and social inequalities. In particular, human resource development was one of the key policy agendas in order to achieve social and economic development of the entire country.

Regarding the education policy, Morocco declared CNEF in 1999, which has become the foundation for the educational sector. CNEF set out a period from 1999 through 2009 as the “Decade for Education and Training,” with a particular emphasis on (i) expansion of compulsory education coverage (primary and secondary schools), (ii) quality improvement of the compulsory education, and (iii) rationalization of operation and management (decentralization of education).

##### (2) Development policies at the time of the ex-post evaluation

At the time of the ex-post evaluation, Morocco had not drawn up a “National Development Plan” since 2005, but it has been implementing development plans and policies targeting individual sectors. In regard to human resource development agendas, the “National Human Development Initiatives (Initiative Nationale de Développement Humain, hereinafter referred

<sup>7</sup> A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

<sup>8</sup> ③: High, ② Fair, ① Low



to as “INDH”) revealed in 2005 is a major policy highlighting priorities in reducing poverty through human development and redressing social inequalities and community disparities. Currently, INDH has entered into its second phase (2010-2015), serving as an underlying principle for Morocco’s human resource development programs.

A post-CNEF scheme titled “National Education Emergency Programme (Programme d’Urgence de l’Education Nationale 2009-2012, hereinafter referred to as “PUEN”) had been implemented. Concrete actions were taken to deliver four objectives, namely (i) full coverage of basic education up to 15-years old (increase in the enrollment rates and completion rates), (ii) expansion of higher education and universities, (iii) reform of educational systems, (iv) resource allocation to realize these objectives. Part of the efforts to achieve (i), which is related to the project’s objectives, include provision and rehabilitation of primary and secondary schools, development of school dormitories, provision of school meals, support for school commuting, financial assistance for low-income households, and scholarship provision. These programs were intended to improve the educational environment and facilitate access to education.

As a post-PUEN scheme, Morocco has formulated “Mid-term Action Plan<sup>9</sup> (Plan d’Action à Moyen Terme, hereinafter referred to as “PAMT”) to improve the environment of basic education including enhancing access to secondary education as well as strengthening educational administration.

In light of the above, Morocco’s national development plan and educational policies have stressed importance of redressing educational disparities and expanding access to secondary education both at the time of the appraisal and ex-post evaluation. Therefore, the project has been relevant to the Morocco’s policies.

### 3.1.2 Relevance to the Development Needs of Morocco

#### (1) Development needs at the time of the appraisal

Under the reform of the educational system launched in 1985, Morocco strove to expand and improve primary education coverage. As a result, the primary school enrollment rate rose from 52.5% in 1990/91 up to 90% in 2001/02. In May 2002, Morocco decided to make primary school (primary education) and secondary school (lower secondary education) compulsory. Thus, six years of primary school (6 to 11 years old) and three years of secondary school (12 to 14 years old) have officially come under a period of compulsory education.

On the other hand, the sharp increase of students completing their primary schooling resulted in insufficient number of secondary school facilities to accept new entrants.

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<sup>9</sup> According to Ministry of National Education and Vocational Training, PAMT is an interim measure with a transitional period from 2014 through 2016. Currently, an education policy targeting 2020 is under preparation, which is expected to be announced in September 2015.

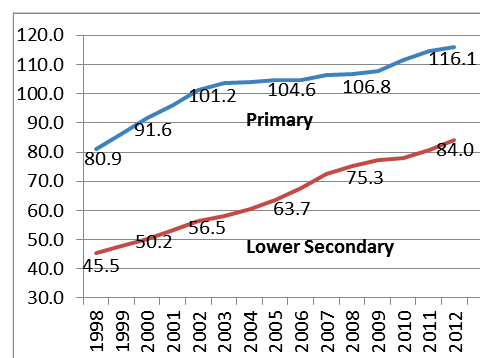
Accordingly, the age specific enrollment rate<sup>10</sup> of secondary school was 63.1% in 2001/02 compared to 42.2% in 1990/91, indicating the secondary education coverage remained limited nationwide. Furthermore, compared to urban children’s enrollment, that of their rural counterparts was low. Although the 12-to-14-years old enrollment rate in urban areas was 85.2% in 2001/02, that of rural areas remained 42.1%, revealing a striking disparity. Given such circumstances, the Government, under its CNEF, embarked on construction of secondary schools in the rural communes (municipalities) across the country. At the time of the appraisal, however, only about 40% of its planned secondary schools were completed. Lack of secondary schools within a reasonable commuting distance was a major impediment to raise the enrollment rates in rural areas.

Moreover, the enrollment rates of rural girls, particularly of those residing in remote areas, were low. The 12-to-14-years old enrollment rate of rural girls was 32.9% in 2001/02, compared to 50.3% for rural boys in the same year. The leading cause of this disparity was parents’ hesitance to allow their girl children to commute long distances, given underdeveloped transportation services, or their reluctance to put them in dormitories for the sake of schooling.

In light of the above, the needs of secondary school construction in rural areas were very high.

## (2) Development needs at the time of the ex-post evaluation

Through the Government’s promotion of CNEF and PUEN, access to primary education has been largely improved, as indicated in Figure 1 below, with the gross enrollment rate of primary education<sup>11</sup> rose from 91.6% in 2000/01 to 116.1% in 2012/13. However, quality improvement of education is now a key issue to be addressed, and the Ministry of National Education and Vocational Training (Ministère de l’Education Nationale et de la Formation Professionnelle, hereinafter referred to as “MENFP”) is taking coping measures<sup>12</sup>.



Source: UNESCO database (2014)

Figure 1: Gross Enrollment Rates for Primary and Secondary Schools

<sup>10</sup> Age specific enrollment rate of secondary school is the share of children in the 12-to-14-years old age group who are enrolled in primary or secondary school among the total children of the same age group. In this report, it is expressed as “12-to-14-years old enrollment rate.”

<sup>11</sup> Gross enrollment rate of primary school is the share of children who are enrolled in primary school, regardless of age, among the total population of the school age between 6 and 11 years old. Also, gross enrollment rate of secondary school is the share of children who are enrolled in secondary school, regardless of age, among the total population of the school age between 12 and 14 years old.

<sup>12</sup> The 2011 International Mathematics and Science Study targeting Grade 4 revealed low academic

As indicated in Figure 1, the gross enrollment rates of secondary school have been improved, with a notable increase from 50.2% in 2000/01 to 84.0% in 2012/13. Thus, secondary education has been expanded in this decade. It was seemingly stagnated when the difference in the gross enrollment rates of primary and secondary schools was as large as 45 percentage points in 2002/03. In 2012/13, however, the gap was filled up to 32 percentage points, suggesting it is on a narrowing trend.

Table 1 shows the net enrollment rates of secondary school<sup>13</sup>. These are different from the gross enrollment rates shown in Figure 1 in dealing with the age of children. While the gross enrollment rates are calculated regardless of age, the net enrollment rates include only children aged at 12 through 14 years. The national average of the gross enrollment rates was 57.4% in 2012/13, largely increased from 43.5% in 2007/08. Nonetheless, secondary schools are not sufficiently provided, unable to take all the school-aged children who completed primary schooling. To cover all of these children with compulsory secondary education, the number of school facilities needs to be increased.

Table 1: Net Enrollment Rates in Morocco (%) 2007/08 to 2012/13

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
National Average						
Total	43.5	42.7	48.0	51.1	53.9	57.4
Male	44.0	43.3	48.7	51.8	54.8	58.0
Female	43.0	42.2	47.2	50.3	52.9	56.8
Urban Average						
Total	68.3	65.8	71.9	74.7	77.4	80.7
Male	69.9	64.5	70.4	73.2	76.1	79.3
Female	66.8	67.1	73.5	76.2	78.7	82.1
Rural Average						
Total	17.7	18.5	22.2	25.1	27.5	30.6
Male	20.8	21.3	25.8	28.6	31.3	33.9
Female	14.5	15.4	18.5	21.4	23.6	27.2

Source: MENFP data (provided in February 2014)

As indicated in Table 1, urban-rural disparities in access to education also exist. In 2012/13 the rural average of the net secondary enrollment was 30.6%, while that of urban counterpart reached 80.7%, making the difference of 50 percentage points. It should be also noted, however, the increase in net enrollment rates between 2007/08 and 2012/13 was 12.9 percentage points in rural areas, slightly greater than in the urban areas which resulted in 12.4 percentage points.

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performance of Moroccan students (ranked 40th in math and 41st in science respectively among 42 countries), which has posed a challenge for the country in terms of the quality improvement of education.

<sup>13</sup> Net enrollment rate of secondary school is the share of 12- to 14-year-old children who are enrolled in secondary school among the total population of the school age between 12 and 14 years old. Net enrollment rate of primary school is the share of 6- to 11-year-old children who are enrolled in primary school among the total population of the school age between 6 and 11 years old.

As for gender disparities, the national average of the net enrollment rate for boys was 58.0% in 2012/13, slightly greater than for girls which remained 56.8%. In the urban areas, however, the net enrollment rate for girls was 82.1% in 2012/13, somewhat greater than the 79.3% for boys. According to MENFP, girls in the urban areas have obtained higher net enrollment rates than boys since 2008/09 for the reason that some rural girls commute to urban secondary schools. In fact, the net enrollment rate for girls in the rural areas remained 27.2% in 2012/13, compared to 33.9% for boys. However, this does not draw a conclusion by itself that the rural areas have failed to narrow gender disparities in access to education in comparison with that of urban areas.

In light of the above, compared to the appraisal phase, the ex-post evaluation has observed expansion in secondary education, however, redressing the urban-rural disparities in access to education requires further efforts, and that the rural areas will continue to have strong development needs in expanding secondary education coverage.

### 3.1.3 Relevance to Japan's ODA Policy

At the time of the appraisal, Japan had been engaged in assisting human resource development of Morocco as a key area of cooperation, which involved redressing local disparities and reducing poverty. Japan's cooperation in the education sector in Morocco had been consistent with JICA Country Assistance Strategy for Morocco and Medium-Term Strategy for Overseas Economic Cooperation Operations (2002-2004), which was valid to the time of appraisal phase. Japan's commitment in Morocco's educational sector was underpinned by these strategies to "develop human resources" and "redress local disparities and reduce poverty."

Given these backgrounds, the project has been relevant to Japan's ODA policies.

In light of the above, the project has been highly relevant to the country's development plan, development needs, as well as Japan's ODA policy. Therefore its relevance is high.

### 3.2 Effectiveness<sup>14</sup>(Rating:③)

In addition to expanding secondary education coverage in the rural areas, the project objectives included supporting Morocco's efforts to redress the urban-rural and gender disparities in access to education. As mentioned in the "Relevance" section, the major factor to hinder an increase in the rural enrollment rates was the "lack of secondary schools within a reasonable distance." To address this quantitative problem existed at the time of the appraisal, the project was committed to increase the number of secondary schools by constructing 101 school buildings in the rural areas, however other components were not particularly included.

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<sup>14</sup> Sub-rating for Effectiveness is to be put with consideration of Impact.

Also, in the appraisal phase, the five target regions were regarded as the “rural areas” collectively. By increasing the number of secondary schools in these areas, the project was intended to ultimately raise the enrollment rates of Morocco as a whole. Thus, although the project had appropriately selected the five target regions, it had not covered inputs particularly aimed at redressing interregional and intraregional disparities. Notably, however, in the ex-post evaluation conducted about 10 years after the appraisal, MENFP provided a set of data at the national level along with detailed comparison paying attention to interregional disparities as well as urban-rural and gender disparities within regions.

Given these settings, the first step of the ex-post evaluation to assess the project’s effectiveness is to examine direct results of its inputs regarding “whether the project has expanded rural secondary schools in the five target regions in quantitative terms” and “whether the project has increased the number of students enrolled in the rural secondary schools” through the intended “construction of secondary schools in the rural areas.” The next step involves assessing quantitative effects (Section 3.2.1) assumed in the appraisal phase through monitoring the actual achievements measured by the national targets. Furthermore, the ex-post evaluation uses identified interregional, intraregional urban-rural, and gender disparities in access to secondary education as benchmarks to unveil current challenges. These data will be consulted for reference in evaluating the project’s effectiveness. Assessment of qualitative effects (Section 3.2.2) and impact (Section 3.3) of the project will require a certain period of time until students completed secondary schooling gain their career opportunities and achieve a livelihood improvement. Thus, the evaluation will alternatively examine the current secondary school coverage in the five target regions and the progress of the Government’s programs to increase secondary school enrollment and support commuting in the rural areas. These will eventually contribute to develop young human resources to serve their communities in the future.

Given these backgrounds, the findings of the ex-post evaluation study are provided below.

### 3.2.1 Quantitative Effects (Operation and Effect Indicators)

The project was intended to construct 101 secondary schools in the rural areas of the five target regions<sup>15</sup>. The ex-post evaluation has confirmed 98 out of these 101 schools are in operation. As indicated in Table 2, 23% of the total (public) secondary schools, or one in five schools existing in the five target regions are provided with new buildings by the project. In 2012/13, about 48,000 students are enrolled in the target schools, which accounts for 20% of the total (public) secondary school students (approximately 240,000) in the rural areas of the

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<sup>15</sup> The five target regions were selected on the condition that they had (i) limited secondary education coverage in rural communes, (ii) low 12- and 14-years old enrollment rates, and (iii) the small share of girl students enrolled in rural secondary schools.

five target regions.

Table 2: Percentage of the Project's Target Schools among the Rural Secondary Schools (public institutions)

Target Region	Plan	Actual		
	Number of Schools Planned by the Project	Number of the Schools Opened	Number of Secondary Schools in the Target Regions* <sup>1</sup>	Percentage of the Target Schools among the Rural Secondary Schools
a) Marrakech Tensift Al haouz	29	29	98	30%
b) Taza Al hoceima Taounate	7	7	74	9%
c) Doukala Abda	11	11	52	21%
d) Tanger Tetouan	13	12	53	23%
e) Souss Massa Draa	41	39	141	28%
Total	101	98	418	23%

Source: JICA document and Educational Statistics of Morocco 2012/13

\*1: Results indicated in the Table are as of 2012/13.

In light of the above, it is generally evaluated that the project has expanded secondary school coverage in the rural areas as initially planned, with the number of the enrolled students also increased. Based on these direct effects, the ex-post evaluation examines the target and actual values measured by the following three operation and effect indicators set out for this project. As mentioned above, the most important indicator used to assess the quantitative effects is the national target values. Interregional and intraregional comparisons are subsidiary reference.

- (1) 12-to-14-years old enrollment rates (public and private institutions): the share of children in the 12-to-14-years old age group who are enrolled in primary or secondary school among the total population of the school age children between 12 and 14 years old
- (2) Percentage of the girls enrolled in the rural secondary schools (public institutions): the share of girls among secondary school students in the rural areas
- (3) Gross intake rates of secondary school (public institutions): the share of new entrants as first-year students in secondary schools among the total 12-year old population of the school age children

(1) 12-to-14-years old enrollment rates (public and private institutions)

The target and actual rates of 12-to-14-year-old enrollment are shown in Table 3. The national target of 95% was mostly achieved up to 85.1% (80.1% for girls) in 2012/13.

Looking at the enrollment rates of each target region, Marrakech Tensift Al haouz has achieved 84.7%, the highest among the five regions, increased to a level nearly equivalent to its target rate. Taza Al hoceima Taounate, on the other hand, has the lowest enrollment rate among the five regions, remaining 67% compared to the target rate of 84% in 2012/13. However, this is still a significant improvement up from 52.5% obtained in 2008/2009. Many students in this region reside in a steep mountain range, requiring longer commuting time. This geographical feature has been a major factor to hinder the enrollment rate increase compared to other regions. However, in the interviews with school directors and students in Taza Al hoceima Taounate schools, they have revealed that many students would have been unable to obtain secondary education if the project had not provided the schools. This indicates educational opportunities have been enhanced through construction of secondary schools amid the harsh environment of rural communes.

Given these outcomes, the national target of the 12-to-14-year-old enrollment rate has been mostly achieved. Although interregional disparities in the enrollment rates exist, the five target regions as a whole have successfully expanded their secondary education coverage.

Table 3: 12-to-14-year-old Enrollment Rates (public and private institutions) (%)

National Total and Region (AREF)	Target (Five years after the project completion)	Actual		
	2008/09	2008/09	2012/13	(Achievement rate = Actual/Target)
<b>National Total (Female)</b>	<b>95.0</b>	<b>70.2 (64.8)</b>	<b>85.1 (80.1)</b>	<b>(90%)</b>
a) Marrakech Tensift Al haouz	86.3	75.3 (64.7)	84.7 (75.3)	(98%)
b) Taza Al hoceima Taounate	84.0	52.5 (42.5)	67.0 (58.9)	(80%)
c) Doukala Abda	89.7	57.4 (51.2)	82.3 (74.3)	(92%)
d) Tanger Tetouan	87.8	65.5 (63.1)	76.9 (75.6)	(88%)
e) Souss Massa Draa	88.0	71.7 (61.4)	86.6 (78.3)	(98%)

Source: MENFP data (provided in February 2014) and Educational Statistics of Morocco 2012/13

(2) Share of girls enrolled in the rural secondary schools (public institutions)

The shares of girls enrolled in rural public secondary schools are shown in Table 4. For the national target of 50%, the actual share of girl students was 45.1% in 2012/13, mostly reaching the intended level. All five regions also have achieved close to their targets.

Table 4: Share of Girls Enrolled in the Rural Secondary Schools (public institutions)

National Total and Region (AREF)	Target 2008/09	Actual 2012/13	(Achievement rate = Actual/Target)
<b>National Total</b>	<b>50.0%</b>	<b>45.1%</b>	<b>(90%)</b>
a) Marrakech Tensift Al haouz	42.7%	44.7%	(105%)
b) Taza Al hoceima Taounate	42.0%	44.7%	(106%)
c) Doukala Abda	47.0%	45.1%	(96%)
d) Tanger Tetouan	48.9%	46.6%	(95%)
e) Souss Massa Draa	45.5%	44.8%	(98%)

Source: MENFP data (provided in February 2014)

Table 5 shows the number of students and shares of girl students who commute to the target secondary schools. Compared to five years ago in 2008/09, the number of girl students commuting to the target schools have more than doubled. In terms of girls' shares in the target schools, although they remained between 34% and 43% in 2013/14, which is lower than the regional average indicated in Table 4, however, they have been increasing slightly in the last five years. MENFP points out the following three as principal reasons why the shares of girl students enrolled in the target secondary schools fall below the average.

- 1) The school districts of the target schools have mountain ranges that require longer commuting time.
- 2) MENFP allows students to attend secondary school outside their school districts when they have difficulties in commuting from their home<sup>16</sup>.
- 3) To ensure safety of commuting roads, parents often wish to enroll their girl children in urban secondary school.

It should be noted that there is no information tracking system to obtain data on students transferred from rural to urban secondary school. Consequently, they may be counted in the data as children not enrolled in any school. To address this problem, MENFP plans to adopt a registration system that assigns a code to each student and managing the enrollment administration based on accurate information, which is expected to take place after 2014/15.

<sup>16</sup> MENFP assigns a primary and secondary school in a particular school district to a student based on a certificate of residence submitted by the head of the household. In some provinces, however, there are only three or four secondary schools available. MENFP permits those students who are unable to commute a long distance to attend a school outside the assigned district. This requires a submission of their relatives' certificate of residence. Alternatively, they are allowed to transfer, after once enrolled in an assigned secondary school, to another outside their initial school districts (which may be in other province or region).



Table 5: Number of Students (persons) Enrolled in the Target Schools and Share of Girl Students (%)

Target Region	2008/09		2011/12		2012/13		2013/14	
	Total	Female (%) <sup>*1)</sup>	Total	Female (%)	Total	Female (%)	Total	Female (%)
a) Marrakech Tensift Al haouz	8,032	2,560 (32%)	12,315	3,794 (34%)	14,113	4,653 (33%)	14,763	5,022 (34%)
b) Taza Al hoceima Taounate	939	254 (27%)	1,930	618 (32%)	2,310	796 (34%)	2,530	924 (37%)
c) Doukala Abda	3,577	1,026 (29%)	4,784	1,736 (36%)	5,515	2,000 (36%)	5,941	2,245 (38%)
d) Tanger Tetouan	2,340	898 (38%)	5,809	2,368 (41%)	7,097	2,968 (42%)	8,059	3,457 (43%)
e) Souss Massa Draa	7,592	2,594 (34%)	14,658	4,868 (33%)	15,960	5,692 (36%)	16,812	6,219 (37%)
Total	22,480	7,332 (33%)	39,496	13,384 (34%)	44,995	16,109 (36%)	48,105	17,867 (37%)

Source: MENFP data (provided in June 2014)

\*1) Share of girls among the total students enrolled in the target schools

### (3) Gross intake rates of secondary schools (public institutions)

Gross intake rate of public secondary school is the ratio of the number of new entrants as first-year students in secondary school, regardless of age, to the total 12-years old population of the school age. The difference between the target and actual rates is shown in Table 6. The national target of the gross intake rate set at 90% has been nearly achieved, reaching 87.5% which is more than 80% of the target rate. The gross intake rates per region also have mostly achieved their targets.

The gross intake rate in Taza Al hoceima Taounate is lower than in other regions, resulting in a 20 percentage point below the rate of Marrakech Tensift Al haouz which achieved the highest rate. One of the reasons for this is that students in the former must travel long distance to attend secondary school.

Table 6: Gross Intake Rates of Secondary Schools (public institutions) (%)

National Total and Region (AREF)	Target	Actual		(Achievement rate = Actual/Target)
	2008/09	2008/09	2012/13	
<b>National Total</b>	<b>90.0</b>	<b>72.1</b> (Female <b>66.0</b> )	<b>87.5</b> (Female <b>82.4</b> )	<b>(97%)</b>
a) Marrakech Tensift Al haouz	89.9	69.7 (Female 60.6)	87.6 (Female 77.5)	(97%)
b) Taza Al hoceima Taounate	83.1	49.1 (Female 38.8)	67.6 (Female 56.7)	(81%)
c) Doukala Abda	89.7	58.1 (Female 51.9)	77.4 (Female 69.2)	(86%)
d) Tanger Tetouan	90.0	63.6 (Female 59.5)	79.2 (Female 77.1)	(88%)
e) Souss Massa Draa	91.6	68.3 (Female 56.7)	82.3 (Female 74.6)	(90%)

Source: MENFP data (provided in February 2014)

Given these outcomes, three indicators to assess the project's operation and effect have mostly achieved their targets. The national target of the 12-to-14-year-old enrollment rate is mostly achieved. The project has made contribution to obtain better results by increasing the number of girl students in the rural secondary schools and the gross intake rates of secondary school.

It should be noted that these improvements have been underpinned by a series of MENFP's programs to promote enrollment of rural children. As shown in Table 7 through Table 9, MENFP has provided various support, including provision of school meals, development of school dormitories, financial assistance for students' families and scholarship programs. Many of the students enrolled in the target secondary schools have received these programs. In particular, girl students in the rural areas are given priority to obtain benefits of the programs (note that the number of days attended and grade reports are assessed). The quantitative expansion of secondary schools and MENFP's enrollment assistance programs have been important factors to enhance secondary education coverage in the five target regions.

Table 7: Number of Students Provided with a School Meal Program

Coverage		2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
National	Total	22,411	25,314	31,387	42,556	48,452	55,501
	Female	8,446	9,474	11,115	15,198	17,823	21,547
Rural schools	Total	21,090	24,292	29,770	39,079	44,694	51,496
	Female	7,931	9,113	10,341	13,915	16,301	20,120
Target schools	Total	1,365	2,630	4,471	7,971	9,778	n/a
	Female	588	991	1,480	2,291	3,582	n/a

Source: JICA document and Educational Statistics of Morocco 2012/13

Table 8: Number of Students Using Off-Site Dormitories

Coverage		2008/09	2009/10	2010/11	2011/12	2012/13
National	Total	22,482	24,922	24,369	34,612	34,908
	Female	7,782	9,620	10,227	14,420	14,948
Rural schools	Total	16,371	19,656	18,953	26,353	27,855
	Female	5,558	7,622	7,991	11,275	11,778

Source: Educational Statistics of Morocco 2012/13

Note) Off-site dormitories (Dar Ettalib) were launched in 2008.

Table 9: Number of Students Receiving a Financial Assistance Program to Prevent Dropout

Coverage		2010/11	2011/12
National	Total	30,946	43,533
	Female	14,395	20,168
Target Schools	Total	5,461	9,028
	Female	2,936	4,697

Source: JICA document and Educational Statistics of Morocco 2012/13

#### BOX 1 Post-project Facility Conditions of the Target Secondary Schools

The ex-post evaluation conducted a survey of 98 target secondary schools, which obtained the responses from 52 schools as of May 2014. The summary of the survey results is provided as below.

✓ Current operation of school meal service

The project has provided a dining hall in each target school. The survey result indicates 50 out of 52 schools are offering school meals at their dining halls. The school meals are served primarily for those students who have long commuting distance or for girl students receiving a financial assistance program to prevent dropout. They are unable to return home during the lunch break.



A dining hall at Oulad Zerrad school in Marrakech Tensift Al haouz region

✓ Provision of dormitories

Of 52 secondary schools that responded, 13 schools have dormitories on site, while 38 counterparts operate them off site. In addition to the project's school buildings and dining halls, Morocco's initiative to provide dormitories has significantly contributed to enhance access to secondary education in the rural areas. (Notably, on-site dormitories generally offer separate facilities for boys and girls. According to the responses from 12 of the 13 schools with on-site dormitories, they accommodate total users of 616 girls and 1,115 boys (with an average of 51 girls and 93 boys at each school).



Dormitory for girl students at Azla school in Tanger Tetouan region

✓ Provision of upper secondary schools

Of the 52 schools responded, 10 schools have lower and upper secondary schools on the

same site. In Morocco, the access to upper secondary school is even more limited compared to the lower secondary school. MENFP states locating lower and upper secondary schools on the same site is particularly important for continuation of girls' schooling. In the interviews during the school visit, nearly all the students stated they wished to continue their schooling at the upper secondary level and that they were studying for examinations to obtain a graduation certificate of lower secondary education (required for admission to upper secondary school). AREF and Provincial Delegations are considering locating upper secondary schools at the target secondary school sites.

✓ Access to the Internet and portable water

Of the 52 schools responded, 12 schools had access to the Internet. The interview results indicate that the students and teachers have the high demand of the Internet access as a tool of obtaining various information in rural areas. As for portable water, although there were no schools without access, 8 out of the 52 schools pointed out inadequate supply. The task that some schools are confronted now is ensuring a reliable water supply throughout the year.

### 3.2.2 Qualitative Effects

The expected qualitative effects were broader secondary education coverage in the five target regions and more equitable opportunities for secondary schooling (by redressing urban-rural and gender disparities) through construction of 101 secondary schools in the country's rural areas. These should turn out to be of impact to the project, and therefore the evaluation will be discussed in the "Impact" section below.

## 3.3 Impact

### 3.3.1 Intended Impacts

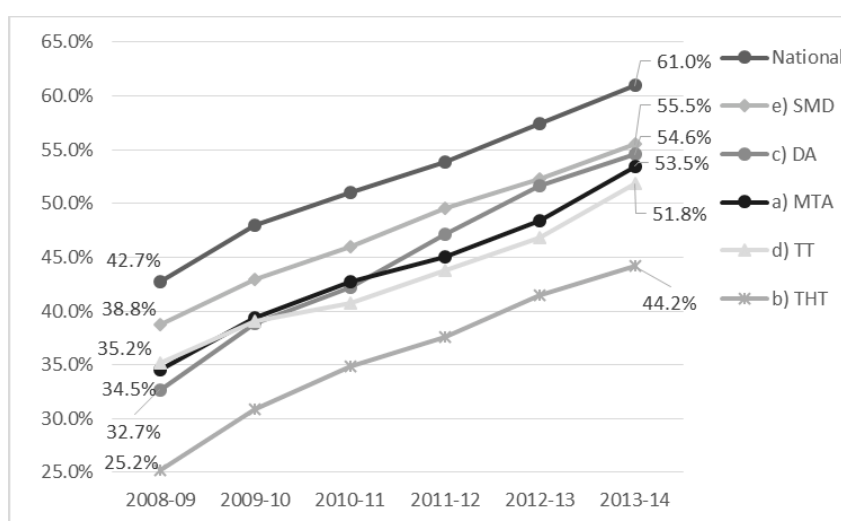
The project intended such impact that broader secondary education coverage in rural areas would ultimately raise the living standards of people in the localities. It is actually difficult, however, to accurately assess the project's contribution to such long-term goal in two years after its completion. Thus, the ex-post evaluation will review the following aspects as assessable impacts: (i) the net enrollment rates of secondary schools in the five target regions, (ii) the net intake rates of secondary schools in the five target regions, and (iii) a positive change in the number of students and teachers at the target schools.

(1) Net enrollment rates of secondary school in the five target regions (public and private institutions)

Figure 2 illustrates the national net enrollment rates and rates of each of the five target regions from 2008/09 through 2012/13. While the 12-to-14-year-old enrollment rates in the aforementioned Table 1 are calculated for those students enrolled in primary or secondary school, the net enrollment rates of secondary schools only target the school age children

between 12-to-14-years-old enrolled in secondary schools. This is one of the indicators to confirm secondary education coverage of the five target regions.

Figure 2 indicates that the share of 12-to-14-year-old students enrolled in secondary school have significantly increased for the last five years in all of the five target regions, steadily broadening their secondary education coverage. By comparing the regions at the 2008/09 measurement, however, interregional disparities in the net enrollment rates have been significant. This is affecting, even at the ex-post evaluation phase, the progress of equalizing educational opportunities among the regions (by redressing urban-rural and gender disparities).



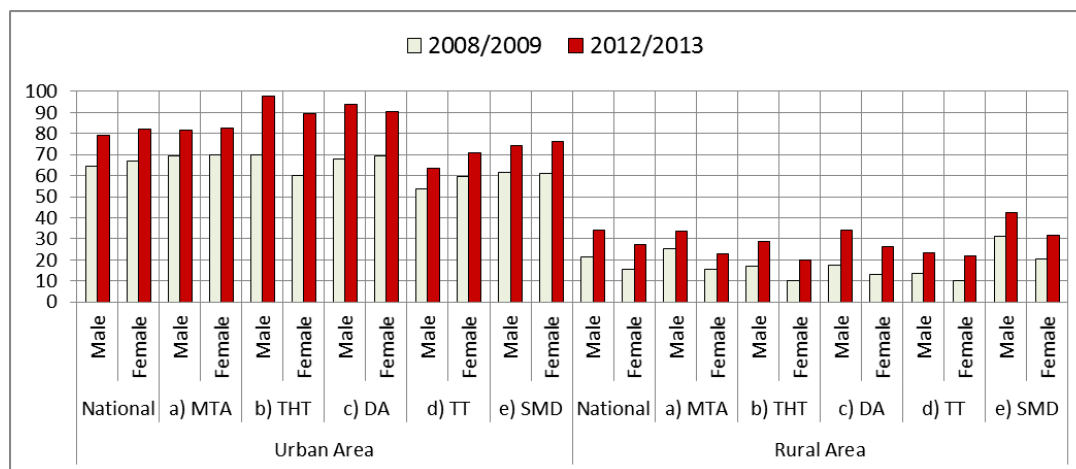
Source: MENFP data (provided in February 2014)

Note: a) MTA: Marrakech Tensift Al haouz, b) THT: Taza Al hoceima Taounate  
c) DA : Doukala Abda, d) TT : Tanger Tetouan, e) SMD: Souss Massa Draa

Figure 2: Net Enrollment Rates of Secondary School in the Five Target Regions (from 2008/09 through 2012/13)

Figure 3 illustrates comparisons of the net enrollment rates, which are disaggregated for the urban and rural areas within the five target areas for 2008/09 and 2012/13, to show their disparities. It indicates an increase of the net enrollment rates both in the urban and rural areas for the last five years. In terms of the urban-rural comparisons, however, the rural areas have generally the lower rates than the urban counterparts. In particular, whereas the urban net enrollment rate in Taza Al hoceima Taounate is 97.6% for boys and 89.6% for girls, both higher than the national urban average, the rural counterpart is 28.8% for boys and 20.1% for girls, remained lower than the national rural average. MENFP points out one of the reasons that the large part of the mountainous terrains in Taza Al hoceima Taounate has an underdeveloped core infrastructure. Consequently, parents in such areas are more likely to enroll their children in urban secondary school. This has led to an unusual disparity in the net

enrollment rates between the urban and rural areas.



Source: MENFP data (provided in February 2014)

Note: a) MTA: Marrakech Tensift Al haouz, b) THT: Taza Al hoceima Taounate

c) DA : Doukala Abda, d) TT : Tanger Tetouan, e) SMD: Souss Massa Draa

Figure 3: Net Enrollment Rates of Urban and Rural Secondary School Located in the Five Target Regions (public and private institutions) (%) (2008/09 and 2012/13)

Besides the lowest net enrollment rate among the five target regions, Taza Al hoceima Taounate has also the lowest urbanization rate as illustrated in Table 10. Its nominal GDP ranks 13th among 14 regions, putting people under severe socio-economic environment. Such socio-economic and geographical disadvantages should not hinder access to education for children in the future, and further efforts are required to broaden equal educational opportunities.

Table 10: Population (2011), Urbanization Rates (2011) and Economic Scale (shares and ranking of GDP) by Region

Target Region	Population (million)	Urbanization Rate (%)	GDP (%) by Region (Ranking)		
			2004	2007	2011
a) Marrakech Tensift Al haouz	3,315	44.3	7.4 (5th)	8.9 (3rd)	8.9 (3rd)
b) Taza Al hoceima Taounate	1,865	26.6	3.3 (12th)	3.0 (13th)	3.0 (13th)
c) Doukala Abda	2,075	38.2	6.3 (6th)	6.4 (6th)	6.8 (7th)
d) Tanger Tetouan	2,985	60.4	7.5 (4th)	8.8 (4th)	8.0 (4th)
e) Souss Massa Draa	3,491	44.3	8.2 (3rd)	8.0 (5th)	7.7 (5th)
«Reference» National total	32,245	58.3			
Grand Casablanca	3,910	91.9	23.7 (1st)	21.3 (1st)	19.2 (1st)

Source: Annual Statistics of Morocco (2006, 2009, 2012)

(2) Net intake rates of secondary school in the five target regions

Table 11 shows the net intake rates for boys and girls in 2008/09 and 2012/13. These rates represent the share of new entrants as first-year students in secondary school among the total 12-years old population of the school age.

The Table 11 indicates that the number of students enrolled in public secondary school at the age of 12 have been increasing in the five target regions. The secondary school coverage for school age children has been therefore expanded both in the rural and urban areas. Although the national net enrollment rates show distinctive urban-rural disparities, the gender disparity within the rural areas is minimal, averaging 20.5% for boys and 20.3% for girls.

Notably, four of the five target regions have higher net intake rates in the urban areas for girls than for boys. According to MENFP, such trends are observed in recent years, as more parents in the rural areas enroll their girl children in urban secondary school, preferably at the relevant school age, in order to ensure their safety in school commuting, as mentioned earlier.

Table 11: Net Intake Rates of Secondary School (Public institutions) (%)

National Total and Region (AREF)	Sex	Urban		Rural	
		2008/09	2012/13	2008/09	2012/13
<b>National Total</b>	<b>Male</b>	<b>37.5%</b>	<b>58.0%</b>	<b>11.0%</b>	<b>20.5%</b>
	<b>Female</b>	<b>42.4%</b>	<b>65.2%</b>	<b>9.6%</b>	<b>20.3%</b>
a) Marrakech Tensift Al haouz	Male	37.1%	54.7%	10.6%	18.8%
	Female	41.7%	63.6%	8.2%	17.0%
b) Taza Al hoceima Taounate	Male	32.5%	53.4%	6.9%	24.8%
	Female	29.7%	62.3%	5.7%	23.4%
c) Doukala Abda	Male	34.7%	66.1%	8.9%	18.4%
	Female	38.6%	66.1%	8.2%	15.8%
d) Tanger Tetouan	Male	30.8%	72.4%	5.7%	20.6%
	Female	36.6%	74.5%	5.2%	19.3%
e) Souss Massa Draa	Male	38.6%	44.1%	16.6%	13.4%
	Female	42.0%	54.1%	13.2%	14.8%

Source: MENFP data (provided in February 2014)

Given these net enrollment rates and net intake rates of secondary school in 2008/09 and 2012/13, the secondary education coverage has been expanded in the five target areas and across the country, while achieving more equitable educational opportunities. It is thus projected that the number of secondary school graduates will increase in the future. On the other hand, urban-rural and gender disparities in these rates remain a challenge at the ex-post evaluation phase. It should be noted that rural girls may choose urban secondary school for safety reasons in commuting. Thus, the available statistics does not necessarily capture disparities in access to education for rural girls.

(3) Changes in the number of students and teachers at the target schools

As mentioned in the “Effectiveness” section, MENFP’s various programs to promote rural children’s enrollment have facilitated their entrance into and commuting to the target schools. In addition, the number of teachers at the target schools, as shown in Table 12, have reached about 2,000 at the time of the ex-post evaluation, exceeding an initial target of 1,700. The number of students rose to 48,105 in 2013/14, a 7% increase compared to the preceding year. The target schools have been trying to ensure the quality of education, coping with the increase in the number of students by allocating more teachers<sup>17</sup>. This has consequently given positive effects on the enrollment and intake rates.

Table 12: Number of Students and Teachers at the Target Schools (in persons)

Target Region	2012/13		2013/14	
	Number of Students	Number of Teachers	Number of Students	Number of Teachers
a) Marrakech Tensift Al haouz	14,113	313	14,763	355
b) Taza Al hoceima Taounate	2,310	217	2,530	232
c) Doukala Abda	5,515	102	5,941	113
d) Tanger Tetouan	7,097	594	8,059	603
e) Souss Massa Draa	15,960	740	16,812	752
Total	44,995	1,966	48,105	2,055

Source: MENFP document (provided in February 2014)

As discussed above, the net enrollment rates and net intake rates of secondary school are both increasing in the five target regions. Given that the target schools account for 23% of the total secondary schools in these areas, the project has contributed to the improvement of these rates to a certain extent. On the other hand, redressing urban-rural disparities in access to secondary education remains a challenge. The target schools have been trying to ensure the quality of education, coping with the increase in students by allocating more teachers. This has consequently given positive effects on the enrollment and intake rates.

<sup>17</sup> The project’s appraisal set student-to-teacher ratio as one of the monitoring targets to ensure the quality of education.



## BOX 2: Findings from the Beneficiary Survey Targeting the Students

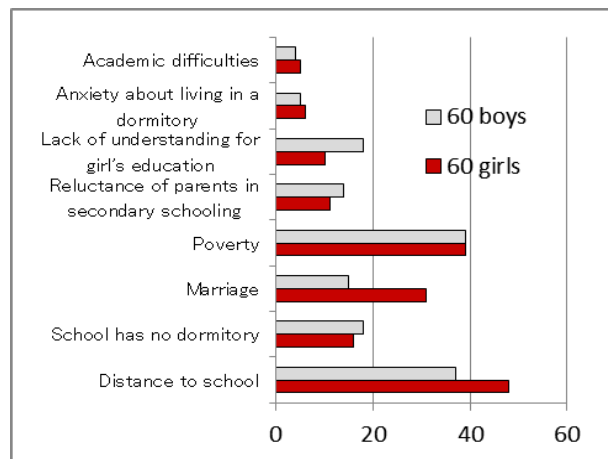
The ex-post evaluation conducted questionnaires targeting 60 boys and 60 girls that were third-year students enrolled in the target schools (Valid response: 120 students = 30 students per school (15 boys and 15 girls) x 4 schools). The summary of the responses is provided as below.

### ✓ Beneficiary satisfaction with the school facilities

86% of the students were satisfied with the school facilities provided. 96% of them were also satisfied with what they are learning.

### ✓ Entrance into secondary schools

For the question asking “Did any of your primary school classmates give up secondary schooling?” 90% of the students responded “Yes.” The figure below shows the reasons of giving up secondary schooling, including a long distance to school, poverty, marriage and lack of understanding for girl’s education. In particular, the students think the common barriers of girl’s education are marriage and lack of understanding for girls’ education, in addition to accessibility to secondary school and financial problems. Secondary education coverage and equitable educational opportunities in rural areas require enhancing understanding of the importance of secondary education as well as pursuing support programs for low-income households.



Causes of Non-enrollment in Secondary School in View of Primary School Graduates (Multiple responses)

### ✓ Students’ needs of facilities and educational equipment in secondary schools

For a multiple-response question asking “What are the facilities and educational equipment that you think are necessary for secondary school?” the most frequent answer was “Internet” (43% for girls and 48% for boys). Other answers include “school bus (40% for girls and 33% for boys),” “dormitory (37% for girls and 8% for boys),” and “upper secondary school (38% for girls and 30% for boys).” These responses were obtained from more girls than boys, indicating their immediate needs of access to school.

### ✓ Residence

For a question asking “Where do you commute from?” 60% of the students answered their home. The remaining forty percent of students commute from the residence of their relatives and dormitories. Of 24 girl students commuting from other than their home, 17 students use dormitories. For rural girl students to attend secondary school, dormitories must be provided adjacent to their schools so that their parents can ensure the safety of their children.

### 3.3.2 Other Positive and Negative Impacts

#### (1) Impacts on the Natural Environment

At the time of its appraisal, the project had targeted the human resource development sector which anticipated no particular impacts on the natural environment. Under the Moroccan laws, furthermore, school construction and equipment provision had not required a preliminary environmental assessment study.

In its inquiry related to any impacts on the natural environment, the ex-post evaluation confirmed that MENFP and AREF of each target region have observed no major problems caused by the project.

#### (2) Land Acquisition and Resettlement

Regarding a project site prepared for Moukhtar Soussi school in Tanger Tetouan, one of the common owners holding an undivided interest in the land had solely posed strong opposition to selling his share. Consequently, Provincial Delegation cancelled the construction project upon approval of AREF.

The project has obtained all the other land properties assigned for school sites in accordance with the Moroccan laws and MENFP's regulations, with provision of reasonable compensation.

The school construction involved no resettlement of local residents.

#### (3) Other Positive and Negative Impacts

Japan International Cooperation Volunteers (as instructors of physical education, science and music) have been assigned by JICA to the target regions. A Moroccan music teacher at Zaytoun school in Tanger Tetouan continues activities engaged by the Japanese music volunteer who had once served there. Specifically, working with music teachers of other schools, the teacher prepares song textbooks that partly cover traditional Tetouan music, and uses them regularly in music class. Given that rural secondary students have fewer opportunities to learn music, such facilitation of a music class has contributed to the quality education. The Zaytoun school and Provincial Delegation are seeking for cooperation to keep this kind of activity.

Besides, the target schools have panels indicating Japan funded the construction of school buildings. The interviews at some of these schools also revealed that the students and teachers recognized the Japanese cooperation enabled the school construction, showing their close interest in Japan.

In light of the above, the project has mostly achieved its intended effects. Therefore its effectiveness and impact is high.

### 3.4 Efficiency (Rating: ②)

#### 3.4.1 Project Outputs

The project implemented secondary school construction in the five regions, namely, a) Marrakech Tensift Al haouz, b) Taza Al hoceima Taounate, c) Doukala Abda, d) Tanger Tetouan, and e) Souss Massa Draa. As shown in Table 13, of 101 secondary schools planned, 100 sites launched their construction. As of the field study conducted in May 2014, 98 schools were completed and in operation.

One of the schools in Tanger Tetouan and two in Souss Massa Draa have not launched operation, and the current situations are as follows.

- One of the secondary schools in Tanger Tetouan: The construction was cancelled due to a problem of land acquisition. Subsequently, as a result of the strong request from residents in the target commune, a secondary school was constructed with MENFP's budget in 2009.
- Two schools in Souss Massa Draa: Both schools were planned in remote areas with very limited access to major cities, leading to a repeat of the unsuccessful tenders as no parties had responded. This has caused a significant delay in commencement of the construction work. As a result, one school is under construction, expecting its completion in 2014/15. Another, though completed 40 percent of the construction, has suspended the work due to poor concrete quality. After cancelling the project's contract in effect, AREF is considering entering into a new tendering procedure to complete the civil work of the school.

Table 13: Number of Target Schools Started Construction and Opened

Target Region	Number of Schools Planned	Actual (As of May 2014)	
		Number of Schools Started Construction	Number of Schools Opened
a) Marrakech Tensift Al haouz	29	29	29
b) Taza Al hoceima Taounate	7	7	7
c) Doukala Abda	11	11	11
d) Tanger Tetouan	13	12	12
e) Souss Massa Draa	41	41	39
Total	101	100	98

Source: JICA document

The project's scope of work is provided as below. While the number of constructed school buildings were reduced by three from 101 to 98, the equipment and facilities were procured as planned because 101 sets were ordered in a collective package<sup>18</sup> for the purpose of cost

<sup>18</sup> At the time of ex-post evaluation, three sets of equipment and facilities for those schools cancelled are under the management of Provincial Delegations.

saving. In terms of other provisions, the consulting services were appropriately provided without major problems in their competencies, according to MENFP.

Table 14: Scope of Work

Component	Plan	Actual
School Building Construction	101 schools in total <b>【Detailed type of school building】</b> 66 schools for 10 classroom type  30 schools for 13 classroom type  5 schools for 19 classroom type <b>【Detailed school facilities】</b> Laboratory, special classroom, IT room, a dining hall and other facilities (multi-media room, locker room, lavatories (separate for boys and girls), office buildings, and playground)	98 schools in total: (Reduction of 3 schools) <b>【Detailed type of school building】</b> 65 schools for 10 classroom type (Reduction of one school) 28 schools for 13 classroom type (Reduction of two schools) 5 schools for 19 classroom type <b>【Detailed school facilities】</b> Laboratory, special classroom, IT room, a dining hall and other facilities (multi-media room, locker room, lavatories (separate for boys and girls), office buildings, and playground)
Procurement of Equipment and Furniture	A set of equipment and furniture for 101 schools <b>【Items】</b> School furniture/equipment Educational equipment Library books Dining hall equipment and furniture IT equipment	A set of equipment and furniture for 101 schools: As planned <b>【Items】</b> School furniture/equipment Educational equipment Library books Dining hall equipment and furniture IT equipment
Consulting Services	A package of consulting services <b>【Detailed services】</b> Assistance in bidding Construction management Organizational capacity development of the executing agency First school-year actual condition survey	A package of consulting services: As planned <b>【Detailed services】</b> Assistance in bidding Construction management Organizational capacity development of the executing agency First school-year actual condition survey

Source: JICA document

As discussed above, except for three schools not opened, 98 out of the 101 schools planned have launched their operation, and the project has mostly achieved its effectiveness and impacts intended.

### 3.4.2 Project Inputs

#### 3.4.2.1 Project Cost

As shown in Table 15, the planned project cost totaled 13,583 million yen, including 8,935 million yen of the ODA loan. The actual cost totaled 7,801 million yen, including 6,641 million yen of the ODA loan, which accounts for 57% of the planned total project cost.

MENFP points to the reason for the significant reduction in the total project cost that initial

cost estimation of equipment was higher than the actual prices, and that its tender invitation for collective procurement of equipment to take advantage of scale merit substantially reduced the cost

Table 15: Comparison between the Planned and Actual Project Cost

Unit: Million yen

	Initial Cost Estimation (at the appraisal)			Actual Cost		
	Foreign currency	Local currency	Total	Foreign currency	Local currency	Total
ODA loan portion						
School Building Construction	0	7,099	7,099	0	5,732	5,732
Educational Equipment and Materials, and Furniture	0	1,508	1,508	0	686	686
Consulting Services	76	252	328	0	223	223
Sub-total	76	8,859	8,935	0	6,641	6,641
Inputs of the Government of Morocco						
Land acquisition	0	1,967	1,967	0	0	0
Taxes	0	1,539	1,539	0	0	0
Survey, Design, Construction Management Cost	0	710	710	0	722	722
Administration Cost	0	431	431	0	438	438
Sub-total	0	4,648	4,648	0	1,160	1,160
Total Project Cost	76	13,507	13,583	0	7,801	7,801

Source: MENFP document (provided in February 2014)

Note: The exchange rate effective as of the project appraisal in October 2003 was 1DH=JPY 12.1, and the actual rate applied was 1DH=JPY12.3 (on average).

#### 3.4.2.2 Project Period

The project period significantly exceeded the plan. Though having expected 44 months from January 2004 through August 2007, the project started from March 2004, and actually took 119 months (270% of the planned period) to be concluded in January 2014. Besides, construction of the two schools in Souss Massa Draa is still in progress.

The major cause of the project's delay was frequent tender failures related to the school building construction. Some of the project sites, typically located in rural areas, had very limited access to major cities. Tenders repeated unsuccessful results, unable to select suppliers due to absence of bidders or bidding price higher than the asking price. According to an MENFP official in charge of tender procedures at that time, the factor behind this was that a growing construction boom in urban areas of the country had overlapped the construction phase of the project.

### 3.4.3 Results of Calculations of Internal Rates of Return

Given the nature of the project, the ex-post evaluation does not provide a quantitative analysis of its financial and economic internal rates of return.

In light of the above, while the project cost was lower than planned, the project period was longer than planned. Therefore the efficiency of the project is fair.

## **3.5 Sustainability (Rating:③)**

### 3.5.1 Institutional Aspects of Operation and Maintenance

Prior to 2000, MENFP, the executing agency of the project, had a dual structure consisting of central and provincial agencies. Under the decentralization policies of the Government, AREF was established as a regional agency operating between the central and provincial counterparts, and shifted to three-layered structures made up of the central, regional and provincial administrations after the fiscal year of 2002. Currently, MENFP allocates 16 AREF at the regional level and 71 Provincial Delegations at the provincial and prefectural level. Schools and training centers are under the jurisdiction of Provincial Delegations. The Government has promoted a transfer of authorities and budget to AREF, Provincial Delegations, and schools in respective regions to pursue educational administration (including the right of personnel management) previously concentrated at the central (ministerial) level. Specifically, to balance the number of staff at central and local agencies, AREF has been allocated with more personnel since 2006. Institutional strengthening is also under way at the local level, including a management training program for personnel managers at AREF and Provincial Delegations to enhance their managerial capacities of local public administration. To guide further reforms in the educational system, these initiatives are taken into PAMT, which is the education sector policy implemented at the time of the ex-post evaluation.

Ninety eight secondary schools constructed by the project were opened and in operation at the time of the ex-post evaluation. As expected in the appraisal, DPPEN and the target schools, under the supervision of AREF, have been working together for operation and maintenance of the facilities provided. AREF and Provincial Delegations have gained more human resources and strengthened their management basis, leading to improvement of school facility operation and maintenance compared to the appraisal phase. Furthermore, AREF and Provincial Delegations have defined roles for each other. The former assigns school districts and oversees construction and operation of educational facilities, while the latter provides assistance based on the school needs identified in its communication with school directors.

Given these circumstances, the ex-post evaluation has identified no major problems with the institutional aspects of operation and maintenance at the respective target schools.

### 3.5.2 Technical Aspects of Operation and Maintenance

Under MENFP's regulatory provisions, AREF in each region has a delegated authority to operate and maintain public educational facilities including the target schools. Each AREF has assigned one to three technicians responsible for facility maintenance. Working with Provincial Delegations, they prepare a maintenance plan annually and implement necessary measures, as appropriate. Given this practice, the target schools do not have particular technical problems in terms of their maintenance. At the school level, directors generally have solid experiences and knowledge of school administration, and thus the post-project management of the target schools has no major problems.

The site visit of 13 target schools during the ex-post evaluation revealed that they have appropriately maintained their facilities including classrooms, lavatories, and playgrounds. For their educational equipment such as books, science experiment kits, sporting goods, and personal computers, teachers undertake regular checkups and maintenance, as often requested by the school directors. Given their competencies, the provided equipment has no technical problems in terms of maintenance.

However, the target schools do not have a common manual for regular-checkup and maintenance applicable nationwide. The maintenance method is currently subject to the discretion of respective Provincial Delegations and school directors. MENFP has recognized the needs of preparing such manual to minimize varied understanding and method of maintenance operation among the schools.

### 3.5.3 Financial Aspects of Operation and Maintenance

Despite Morocco's financial difficulties, MENFP's budget for the 2014 fiscal year increased by 8.5% to 46 billion MAD (Moroccan Dirham) from 43 billion MAD in 2013.

MENFP is also undertaking decentralization in terms of its budget allocated for operation and maintenance work, which had been formerly concentrated at the central government level. In the 2009 fiscal year, the share of budget spending was 32% for the central agencies and 68% for the local counterparts. MENFP's local agencies, namely AREF and Provincial Delegations, are authorized to execute their budget in accordance with an ordinance from the Ministry of Finance. AREF's revenue in each region consists of subsidies and grants received from the national budget. In particular, the budget allocated for operation and maintenance of school facilities is funded with the subsidies. AREF appropriates part of this budget to Provincial Delegations and schools.

The action plans outlined in PAMT, currently implemented as the country's education policy, provides rationales for MENFP's budget request. PAMT also calls for further expansion of school facilities, improvement of the learning environment, and promotion of enrollment. In addition to school facility building, a range of continuous commitment is

proposed including provision of school meals and dormitories, a dropout prevention program, and electricity and water supply in schools. These programs support rural areas, particularly to redress their unequal school education coverage compared to the urban areas. It is expected that the Government will continue its facilitation of children's enrollment for the target schools.

In addition, according to the interviews with AREF, Provincial Delegations and the target schools, the current budget amount covers maintenance cost for the school facilities. In the process of the country's decentralization, on the other hand, schools are required to gain more financial independence. Economic inequalities among the regions should not negatively affect the maintenance work in terms of sustainability. In addition to financial support from parents association and communities, the schools in rural areas should be covered with relevant programs proposed under PAMT so that they can reduce their financial burden.

It should be noted that the ex-post evaluation has been unable to obtain financial information from MENFP it had requested, concerning the budget of the central and regional governments. For this reason, the evaluation has not included the analysis of data from the recent and past years. Nonetheless, given the afore-mentioned assessment of the facility operation and maintenance, it concludes the financial conditions have no major problems.

#### 3.5.4 Current Status of Operation and Maintenance

The field survey visited respective AREF of the five target regions and sample 13 schools. It observed the current status of operation and maintenance of the school buildings, classrooms, lavatories, playgrounds, dining halls, and equipment. These were maintained very well and clean. As outside service providers were employed for cleaning, students did not participate in cleaning, but handled the facilities and equipment carefully as instructed.

The students were using the educational equipment provided by the project such as books, science experiment kits, sporting goods, and personal computers. There has been no case in which these were in disuse due to malfunction or damage. The schools have purchased supplies, though at minimum, including reagents for science experiments and other materials necessary to conduct a lesson. However, in many of the schools, their personal computers have not been fully utilized as they are not connected to the Internet. It is expected that MENFP would work on increasing the Internet access.

Generally, the students and parents associations were not directly involved in operation and maintenance of the school facilities and educational equipment. In some cases, however, a parents association and local residents have cooperated for improvement of the students' learning environment through their financial contribution to purchase projectors and personal computers.

These survey findings therefore demonstrate that the school facilities and educational



equipment have been maintained to ensure an appropriate use for the sake of teachers and students.

In light of the above, no major problems have been observed in the institutional, technical and financial aspects of the operation and maintenance system. Therefore sustainability of the project effects is high.

## **4. Conclusion, Lessons Learned and Recommendations**

### **4.1 Conclusion**

Through construction of 101 secondary schools in the five regions in Morocco where most of their rural areas had higher poverty index, this project was intended to expand their secondary education coverage and facilitate efforts to redress urban-rural and gender disparities in access to education.

Both at the time of the project's appraisal and the ex-post evaluation, the Government has put broader access to secondary education in rural areas as a key development agenda. The project has been highly consistent with the country's development plan, development needs, as well as Japan's ODA policy. Therefore its relevance is high.

At the time of the ex-post evaluation, 98 secondary schools provided by the project are operated where approximately 48,000 students are enrolled. This accounts for 20% of the total number of students (about 240,000) who are enrolled in public secondary schools in rural areas of the five target regions.

Indicators measuring effectiveness of the project have mostly achieved the expected objectives in terms of its effectiveness. Namely, access to secondary education has been increased over the rural areas, the age specific enrollment rates among 12- to 14-year-olds improved, and the number of girl students enrolled in secondary schools also increased. Although urban-rural disparities in the enrollment rates remain, the expansion of secondary education in the five target regions will have a positive impact on equitable access to secondary schooling (by redressing urban-rural and gender disparities). Given that the project has mostly produced its effects as intended, its effectiveness and impact is high.

Although the project cost was within the plan, the implementation period significantly exceeded the plan. Therefore, the efficiency is evaluated to be fair. Under the supervision of AREF in each target region, Provincial Delegations and the target schools have developed in partnership an institutional setting for operation and maintenance of the project. No major problems have been thus observed in the institutional, technical and financial aspects associated with operation and maintenance. Therefore sustainability of the project effect is high.

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

## **4.2 Recommendations**

### **4.2.1 Recommendations to the Executing Agency**

- The two schools currently under construction are located in the remote rural communes with very limited access to local cities. For children residing in far-off areas, these two schools are essential to obtain secondary schooling. Provincial Delegations must supervise the contractors' works and the progress of the construction phase in order to open these schools at the earliest possible time. It is also recommended that AREF of Souss Massa Draa report to MENFP regularly regarding the construction progress of the two schools. MENFP would then have to submit a progress report to JICA Morocco Office to present advancement of the construction work.
- It is recommended that AREF of each target region explore the needs of locating dormitories and upper secondary schools adjacent to lower secondary schools, which will effectively facilitate enrollment of rural girls in the target schools. Development of school-commuting road infrastructure is also critical to increase access to secondary school, and thus it is important to consider taking actions in partnership with Ministry of Equipment and Transportation.
- To outline maintenance processes and procedures, a uniform nation-wide manual needs to be prepared to handle the school facilities and equipment and to avoid different practices among schools.

### **4.2.2 Recommendations to JICA**

The ex-post evaluation suggests that JICA obtain the progress report regularly from MENFP concerning the two schools currently under construction and undertake the monitoring until their inauguration.

## **4.3 Lessons Learned**

- Lessons learned for enrollment promotion targeting rural girls  
A similar project currently implemented in Morocco (with a new ODA loan) is underpinned by this project's experiences with secondary school construction and a series of the Government's programs to broaden secondary schooling. More specifically, the ongoing project allocates secondary school sites adjacent to government-related facilities so that parents of rural girl children are assured of their safety. It also intends to include dormitories as a part of school facilities in order to increase enrollment in secondary school. This demonstrates a model case that the executing agency is committed to apply lessons learned from this project to its new operation, which expects an increase in share of girls enrolled. For all that, the secondary schooling of rural girls has several barriers, such as parental and social attitudes of reluctance to send them to

school from settlement other than home, under-served rural infrastructure (rural roads) and safety issues concerning school-commuting roads. Given in this context, the new ODA loan project under implementation would bring about the expected effects when it seeks for broader community understanding of the importance of schooling as well as a partnership with the basic infrastructure sector. Annual monitoring and evaluation of girls' share among new entrants would be also helpful to meet local needs concerning girls' schooling.

- Review of a timetable for school construction in rural areas with limited transportation access

The project experienced a significant delay in the construction of 98 secondary schools in the rural areas, with two sites still under construction. The project sites included remote areas with very limited access and sloping surface required enormous leveling work. These conditions resulted in unsuccessful tenders and a construction delay. Therefore, in a project to construct secondary schools in rural areas, it is essential that JICA, during its appraisal phase, explain to an executing agency that the latter must start preparing for a tender at its detailed design study stage, by setting out a feasible design, cost estimation and construction period which foresees technical difficulties including geographical conditions, and obtain mutual confirmation on the said matter.

-End-

### Comparison of the Original and Actual Scope of the Project

Item	Original	Actual
1. Project Output	<p>1. 101 secondary schools in total</p> <p><b>【Detailed types of school building】</b>  66 schools for 10 classroom type  30 schools for 13 classroom type  5 schools for 19 classroom type</p> <p><b>【Detailed school facilities】</b>  Laboratory, special classroom, IT room, a dining hall and other facilities</p> <p>2. Educational equipment and furniture  School furniture/equipment  Educational equipment  Books  Dining hall equipment and furniture  IT equipment</p> <p>3. Consulting services</p>	<p>1. 98 secondary school in total</p> <p><b>【Detailed types of school building】</b>  65 schools for 10 classroom type  28 schools for 13 classroom type  As planned for 19 classroom type</p> <p><b>【Detailed school facilities】</b>  As planned</p> <p>2. Educational equipment and furniture  As planned</p> <p>3. Consulting services  As planned</p>
2. Project Period	January 2004-August 2007 (44 months)	March 2004-January 2014 (119 months)
3. Project Cost		
Amount paid in foreign currency	76 million yen	0 yen
Amount paid in local currency	13,507 million yen (1,116 million DH)	7,801 million yen (667 million DH)
Total	13,583 million yen	7,801 million yen
Japanese ODA loan portion	8,935 million yen	6,641 million yen
Exchange rate	1DH = JPY12.1 (as of October 2003)	1DH = JPY12.3 (Average between March 2004 and September 2011)

-End-

Ex-Post Evaluation of Japanese ODA Loan  
Marrakech-Agadir Motorway Construction Project

External Evaluator: Machi KANEKO, Earth and Human Corporation

**0. Summary**

The objective of this project was to respond to the increasing demand for transportation by constructing a motorway linking Marrakech and Agadir, which are centers of economic activities and tourism in Morocco, thereby contributing to the promotion of trade both domestically and with Europe, etc., and to the revitalization of Morocco’s economy by promoting tourism. With respect to this objective, the Government of Morocco regarded transportation and trade, and tourism as key sectors to boost the domestic economic growth both at the times of project appraisal and the ex-post evaluation of the project, and thus has been systematically committed to development of infrastructures including motorways. Japan has also focused on assistance to promotion of sustainable economic growth through development of economic and social infrastructures. Therefore, this project has been highly relevant to the country’s development plan and development needs, as well as Japan’s ODA policy. Therefore its relevance is high.

The implementation of the project more or less achieved the expected targets of effectiveness: the annual average daily traffic increased as planned in all the sections including the Argana to Ameskroud section subject to the project. In addition, the section concerned plays a crucial role while the domestic logistics network has been expanding. As for the tourism sector, the project helped shorten the traveling time in the section, giving positive impacts on enhancing the attraction to not just foreign tourists but also tourists within the country. In line with these, this project has largely achieved its objectives. Therefore, its effectiveness and impact is high.

The project cost was within the original cost, but the project period was slightly extended, so the efficiency of the project proved to be fair. About the perspective of sustainability, Société Nationale des Autoroutes du Maroc (hereinafter referred to as “ADM”), the executing agency of the project, has established an appropriate operation and maintenance system, so it is concluded that the motorway and auxiliary facilities are operated and maintained basically in a sound manner. Therefore sustainability of the project effect is high.

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

**1. Project Description**



The motorway network of Morocco and the section subject to the project (Marrakech-Agadir)



Motorway constructed under the project (the Argana to Ameskroud segment financed by the project)

## 1.1 Background

Morocco has been actively promoting trade liberalization. It became a member of the General Agreement on Tariffs and Trade (GATT) in 1987, and participated in the World Trade Organization (WTO) in 1994. It also concluded a partnership agreement with the European Union (EU), the largest trade partner, in 1996, based on which it has been gradually abolishing tariffs. In 2004, it concluded Free Trade Agreements with the United States and Turkey, respectively, taking advantage of these agreements to expand its overseas markets and promote exports.

At the same time, to strengthen the domestic transport infrastructure, the Government of Morocco has been developing roads, railways, airports and harbors and ports while taking into account geographical conditions of individual regions. To promote foreign trade further, however, cargo transport must be streamlined and industrial competitiveness must be enhanced. To this end, developing transport infrastructure was a pressing issue. Accordingly, in 1991, the Government of Morocco prepared the Motorway Master Plan, aiming to develop the east-west route linking Casablanca, Rabat and Oujda, and the north-south route linking Agadir, Tangier and Tetouan by 2010 (see Map on page 1).

In particular, the Port of Tangier, located at the northern end of the country and about 14km to the EU zone, was expected to be developed as an important logistics hub for exports of agricultural, marine and other products in the southern part of the country to the EU markets. Moreover, the Casablanca Mohammed V International Airport and the Port of Tangier serve as gateways for tourists from EU countries. Because development of major transport bases and means of traveling among tourist cities would increase tourists, the government prioritized the development of domestic roads including motorways.

In such circumstance, the implementation of the project to build a motorway linking Marrakech and Agadir was expected to boost economic growth through promotion of cargo transport and tourism, and thus the Government of Morocco requested the Government of Japan to provide assistance.

## 1.2 Project Outline

The objective of this project is to respond to the increasing demand for transportation by constructing a motorway of a total of 234km linking Marrakech and Agadir, which are centers of economic activities and tourism in Morocco, thereby contributing to the promotion of trade both domestically and with Europe, etc., and to the revitalization of Morocco's economy by promoting tourism.

The entire project<sup>1</sup> was divided into four subprojects, each of which was financed and undertaken by Japan or other donors. Japanese ODA loan covered the Argana-Ameskroud segment (46km).

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<sup>1</sup> The construction work for the project was carried out by dividing the entire route into four segments: Segment 1: Marrakech to Chichaoua (84 km); Segment 2: Chichaoua to Argana (92 km); Segment 3: Argana to Ameskroud (46 km), the segment financed by this project; and Segment 4: Ameskroud to Agadir (12 km). The construction of these segments is financed by Segment 1: the Islamic Development Bank (IDB) and the Arab Fund for Economic and Social Development (AFESD); Segment 2 the African Development Bank, AFESD and the Kuwait Fund for Arab Economic Development (KFAED); Segment 3: JICA; and Segment 4: AFESD, respectively.

Loan Approved Amount/ Disbursed Amount	17,726 million yen / 17,725 million yen	
Exchange of Notes Date/ Loan Agreement Signing Date	March 2006 / March 2006	
Terms and Conditions	Interest Rate:	1.5%
	Repayment Period: (Grace Period)	30 years (10 years)
	Conditions for Procurement:	General untied
Borrower / Executing Agency	Société Nationale des Autoroutes du Maroc (ADM)	
Final Disbursement Date	July 2011	
Main Contractor	Dogus Insaat ve Ticaret (Turkey)	
Main Consultant	Conseil, Ingenierie et Developpement (Morocco)	
Feasibility Studies, etc.	Special Assistance for Project Formation (SAPROF) on Marrakech-Agadir Motorway Construction Project (2005)	

## 2. Outline of the Evaluation Study

### 2.1 External Evaluator

Machi KANEKO, Earth and Human Corporation

### 2.2 Duration of Evaluation Study

Evaluation study was made on the following schedule for this ex-post evaluation.

Duration of the study: September 2013 – September 2014

Duration of the Field studies: January 17 – February 11 and April 17 – May 11, 2014

### 2.3 Constraints during the Evaluation Study

Because the entire route between Marrakech and Agadir is divided into four segments, each of which was financed and constructed by different donors, the project generates its effects only after completion of all the subprojects. Thus, although it is appropriate to set numerical targets covering the entire Marrakech-Agadir route as indicators for the operation and effects of the project, it should be noted that these indicators show not just the project effects generated by Japanese ODA loan but also effects of assistance of other donors.

## 3. Results of the Evaluation (Overall Rating: A<sup>2</sup>)

### 3.1 Relevance (Rating: ③<sup>3</sup>)

#### 3.1.1 Relevance to the Development Plan of Morocco

At the time of project appraisal, the Government of Morocco was working on a new national development plan next to the Economic and Social Development Plan (2000-2004) and thus implemented

<sup>2</sup> A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

<sup>3</sup> ③: High, ② Fair, ① Low

various investment projects in accordance with the 2005 Budget Law. The law set out development of a motorway network as one of the priority areas<sup>4</sup> that would contribute to sustainable economic growth. The country also formulated in 1991 a sector plan, the Motorway Master Plan, which set the goal of constructing a motorway network<sup>5</sup> of approximately 1,500 km by 2010 that would cover the entire country including the route subject to the project.

At the time of ex-post evaluation, however, the Government of Morocco did not formulate any national development plan but announced development plans and development strategies for individual sectors. The sector plan related to this project is the Motorway Master Plan cited above, which extended the target year to 2015 with a target of making the total length of motorways 1,800km. After the completion of the Marrakech-Agadir route (234km) thanks to the project, the total length of motorways became 1,416km in 2010.

As described above, projects for motorway development were among priority areas of the national development policies and the sectoral plan contributing to sustainable economic growth of the country both at the times of project appraisal and ex-post evaluation, and thus this project has been highly relevant. By working together with other financing organizations, it has been also relevant to have enabled support to such a large-scale project which would have been difficult for the Japan International Cooperation Agency (hereinafter referred to as “JICA”) alone.

### 3.1.2 Relevance to the Development Needs of Morocco

At the time of project appraisal, the project team examined Morocco’s economic growth rate, increases in tourist demand in major tourist cities of Marrakech and Agadir, and other factors to forecast traffic demand on National Road No. 8 (NR8) that links the two cities. The forecast showed that, if no motorway was constructed between Marrakech and Agadir, the annual average daily traffic (AADT) on a certain section of NR8 would be increased from 4,000-5,000 vehicles/day in 2003 to 10,000 vehicles/day in 2015, which was above the capacity of the national road.

Moreover, the section of NR8 was in precipitous mountains but the road was narrow with some long and steep zones, although heavy vehicles accounted for some 60% of all the traffic of the road. Because of this, the average number of accidents on NR8 (between Marrakech and Agadir) was recorded high, 104.2 accidents on average, compared to the number of vehicle accidents nationwide, 64.2 accidents per 100 million kilometrage. Thus, measures against traffic accidents were an imminent challenge.

Together with the increased traffic, upcoming market integration with EU was another factor for the country to deal with motorway development. Securing efficient routes for exports of agricultural, marine and other products to EU countries was a crucial task. In particular, Agadir has a good fishery port and the country’s foremost production sites of tomatoes and citrus fruits. It was necessary to transport these

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<sup>4</sup> Three specific measures are: (1) sustainable economic growth contributing to employment creation and improvements in living conditions of the entire people; (2) strengthening of social infrastructure through equal opportunity; and (3) implementation of measures contributing to modernization of the economic system and production facilities.

<sup>5</sup> North-south route: Marrakech-Agadir (234km) financed by this project; Casablanca-Marrakech (202km); Casablanca-El Jadida (86km); and Casablanca-Tanger-Tetouan (367km). East-west route: Rabat-Fez (167km); and Fez-Oujda (320km).



agricultural and marine products to Casablanca and the Port of Tangier at the earliest possible time.

At the time of ex-post evaluation, three years had passed since the Marrakech-Agadir motorway constructed under the project opened. During the course, the AADT has been increasing as expected in general (to be described in the section of Effectiveness). The number of automobiles in the country has been increasing over the years: the number increased some 20% from 2008 to 2011. As for traffic accidents, the motorway developed under the project enjoys a lower traffic accident rate than that on NR8<sup>6</sup>.

The Government of Morocco also published a National Strategy for the Development of Logistics Competitiveness (2010-2015), developing logistics infrastructure facilities in major rural cities across the country. Marrakech and Agadir particularly grew their importance as cargo transport bases after the motorway was developed under the project and various terminals are being developed in these cities. The development of “Tangier Free Zone” and the Tangier-Mediterranean (Tangier-Med) Port is in progress in Tangier in northern Morocco. In other words, the cargo transport network linking Agadir, Marrakech, Casablanca and Tangier is being streamlined on the initiative of the national government.

The number of tourists from abroad was increasing, totaling 9.83 million in 2012. Ancient cities of Marrakech and Fez, and Agadir and other beach resort areas remain popular among tourists.

The traffic demand for the Marrakech-Agadir route was increasing at the time of project appraisal, so it was predicted to exceed the traffic capacity of NR8 in future. Thus, the needs for the development of a motorway on this route had been high. At the time of ex-post evaluation, the AADT on the motorway developed under the project increased as planned in general. At the same time, the Government of Morocco regards cargo transport and trades with foreign countries as key sectors for the domestic economic growth, and thus is committed to streamline the cargo transport network including the section developed under the project. In line with this, the development of logistics infrastructure including this project was highly needed also at the time of ex-post evaluation.

### 3.1.3 Relevance to Japan’s ODA Policy

The JICA Medium-Term Strategy for Overseas Economic Cooperation Operations (April 2005) placed priority on assistance to Morocco to the sector of “infrastructure development for sustainable growth,” and placed emphasis on support for the promotion of sustainable economic growth through economic and social infrastructure development, including motorway construction. As for Morocco, in particular, the JICA strategy regarded as a priority area “development of economic and social infrastructure for transportation, tourism, etc.”

In line with this, this project has been highly relevant to the country’s development plan and development needs, as well as Japan’s ODA policy. Therefore its relevance is high.

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<sup>6</sup> The traffic accident rate on RN8 was decreasing, compared to the time when project appraisal was conducted.

### 3.2 Effectiveness<sup>7</sup> (Rating: ③)

#### 3.2.1 Quantitative Effects (Operation and Effect Indicators)

##### (1) Annual average daily traffic (AADT)

Table 1 shows the target and actual volumes of the AADT on the road segment financed by Japanese ODA loan. While the target was 6,396 vehicles/day, the actual volumes were 6,141 vehicles/day in 2012 and 6,621 vehicles/day in 2013, respectively. The target was more or less achieved. The actual volume in 2012 fell slightly below the target because the motorway was opened five months later than initially planned, but still the achievement rate is 96%. The impact of the delay is considered to be minor.

Table 2 shows the AADT of the entire project including the road segment financed by Japanese ODA loan. The target has been more or less achieved in all the sections.

Table 1 Annual Average Daily Traffic on the Road Segment (46km) Financed by Japanese ODA Loan

Indicator	Target	Actual traffic volume			
	2012 (2 yrs. after project completion <sup>Note 1</sup> )	2010 <sup>Note 2</sup> (Year of project completion)	2011 (1 yr. after project completion)	2012 (2 yrs. after project completion)	2013 (3 yrs. after project completion)
Annual average daily traffic (AADT) (vehicles/day)	6,396	3,219	5,664	6,141	6,621

Source: ADM data

Note 1: The target volume was determined at the time of project appraisal.

Note 2: The entire route was opened in June 2010. Initially, the route was scheduled to be opened in January 2010.

Table 2 Annual Average Daily Traffic on the Entire Route and Ratio of Heavy Vehicles

(Unit: vehicles/day)

Segment	Target of the entire project <sup>Note 1</sup> (2 yrs. after opening)	Category	Actual traffic volume			
			2010	2011	2012	2013
Marrakech-Chichaoua	5,977	Total	3,269	5,800	5,972	6,518
		Percentage of HV <sup>Note 3</sup>	23.0	17.5	15.4	13.0
Chichaoua-Imintanoute	7,204	Total	3,123	5,402	5,581	6,073
		Percentage of HV	46.0	53.5	48.3	47.4
Imintanoute-Argana	7,204	Total	3,102	5,441	5,824	6,397
		Percentage of HV	62.5	70.2	67.7	64.8
Argana-Ameskroud <sup>Note 2</sup>	6,962	Total	3,219	5,664	6,141	6,621
		Percentage of HV	22.73	26.36	26.2	25.3
Ameskroud-Agadir	6,962	Total	4,028	6,499	7,166	7,577
		Percentage of HV	24.5	27.4	27.1	26.0

Source: ADM data

Note 1: The target of the entire project was set by ADM. The date when it was set out is unknown.

Note 2: Data in thick frames is for the segment financed by Japanese ODA loan.

Note 3: HV stands for heavy vehicles.

<sup>7</sup> Sub-rating for Effectiveness is to be put with consideration of Impact.

## (2) Reduction of vehicle operating cost (VOC)

Table 3 shows the target and actual values of “reduction of vehicle operating cost (VOC)” on the entire route of the project. While the target was 406.2 MAD, the actual values were 354.4 MAD in 2012 and 409.6 MAD in 2013, respectively. The actual value in 2012 fell below the target because the AADT in the year slightly fell below the target, but still the achievement rate is 87%. The target of this indicator has been more or less achieved.

Table 3 Benefits from Reduction of Vehicle Operating Cost (VOC) on the Entire Route <sup>Note 1</sup>  
(in terms of MAD)

Indicator	Target	Actual value	
	2012	2012	2013
Reduction of VOC <sup>Note 2</sup> (MAD <sup>Note 3</sup> )	406.2	354.4	409.6

Source: ADM data

Note 1: The target of the indicator is addressed to the entire route (Marrakech-Agadir) under the project.

Note 2: VOC stands for vehicle operating cost

Note 3: The benefits are calculated in terms of the currency of Morocco, dirhams (MAD).

## (3) Reduction of travel time

Table 4 shows the target and actual values of “reduction of travel time” on the entire route of the project. While the target was 96.8 MAD, the actual values were 119.9 MAD in 2012 and 166.0 MAD in 2013, respectively. The target of this indicator has been achieved.

Table 4 Benefits from Reduction of Travel Time on the Entire Route <sup>Note 1</sup> of the Project

Indicator	Target	Actual value	
	2012	2012	2013
Reduction of travel time (MAD <sup>Note 2</sup> )	96.8	119.9	166.0

Source: ADM data

Note 1: The target of the indicator is addressed to the entire route (Marrakech-Agadir) under the project.

Note 2: The benefits are calculated in terms of the currency of Morocco, dirhams (MAD).

As shown in Table 5, the travel time from the entrance to the motorway in Marrakech to the exit in Agadir by ordinary passenger car is two hours and 45 minutes, which is shorter than the travel time on NR8 by one hour and 15 minutes. The travel time of truck and bus is reduced from five hours to three and a half hours, shorter than the travel time on NR8 by one and a half hours.

A beneficiary survey<sup>8</sup> conducted as part of the ex-post evaluation reveals that all the 107 respondents opt to use the motorway when asked which they would chiefly use, the motorway or NR8. Moreover, they all gave affirmative replies when asked whether or not the travel time on the route was shortened. Users of the motorway feel higher convenience of the motorway.

<sup>8</sup> The beneficiary survey was conducted and received replies from a total of 107 users of the motorway developed under the project, including 29 transport businesses, 52 tourism businesses; 14 agricultural product suppliers; and 12 parties in unknown industries.

Table 5 Travel Time of the Route by Vehicle Type

Segment	Light vehicle		Heavy vehicle	
	RN 8	Motorway	RN 8	Motorway
Marrakech junction- Agadir	4 h 00 min	2 h 45 min	5 h 00 min	3 h 30 min
Marrakech junction-Chichaoua	1 h 45 min	1 h 05 min	2 h 15 min	1 h 35 min
Marrakech-Chichaoua	1 h 20 min	1 h 15 min	1 h 50 min	1 h 45 min
Chichaoua-Imintanoute		18 min		27 min
Imintanoute-Argana		36 min		48 min
Argana-Ameskroud <sup>Note 1</sup>	35 min	30 min	55 min	45 min
Ameskroud-Agadir	11 min	7 min	15 min	10 min

Source: ADM data

Note 1: Segment in the thick frame was financed by Japanese ODA loan.

#### (4) Reduction of traffic accidents

Table 6 shows the target and actual values in relation to “benefits of reduction of traffic accidents<sup>9</sup>” on the entire route of the project. While the target was 66.7 MAD, the actual figures were 64.0 MAD in 2012 and 69.7 MAD in 2013, respectively. The actual figure in 2012 fell below the target because the AADT in the year slightly fell below the target, but still the achievement rate is 96%. The target of this indicator was more or less achieved.

Table 6 Benefits from Reduction of Traffic Accidents on the Entire Route of the Project <sup>Note 1</sup>

Indicator	Target	Actual value	
	2012	2012	2013
Reduction of traffic accidents (MAD <sup>Note 2</sup> )	66.7	64.0	69.7

Source: ADM data

Note 1: The target of the indicator is addressed to the entire route under the project.

Note 2: The benefits are calculated in terms of the currency of Morocco, dirhams (MAD).

Tables 7 and 8 show time series of traffic accident rates and rates of casualties in traffic accidents on the motorway developed under the project and the existing NR8. At the time of project appraisal, the development of the motorway was expected to reduce the traffic volume to some extent and the accident rate on NR8.

Table 7 indicates that the accident rate and the rate of casualties in traffic accidents on the segment financed by Japanese ODA loan are higher than other segments of the route. But according to ADM, this is chiefly because of many accidents involving heavy trucks due to the presence of a long steep zone on the segment. Even so, ADM says that the accident rate was gradually decreasing, compared to the time when the route was initially opened because ADM performed enlightening activities and an increasing number of drivers were beginning to become more familiar with the traffic caution points

On the other hand, in comparison with NR8 (the Imintanoute-Agadir section), the accident rate on the motorway and NR8 was 11.68 - 51.5 accidents per 100 million vehicle-km and 61.73 accidents per 100

<sup>9</sup> The benefits from reduction of traffic accidents are calculated from social loss due to traffic accidents in accordance with the accident rate.

million vehicle-km, respectively in 2011: the risk of accidents was lower on the motorway. At the time of project appraisal in 2003, the accident rate on the entire NR8 between Marrakech and Agadir was 104.2 accidents per 100 million vehicle-km. The rate was particularly high on the Chichaoua-Imintanoute section, 135.7 accidents per 100 million vehicle-km. But as Table 8 indicates, the rate on the same section of NR8 in 2011 was 18.03 accidents per 100 million vehicle-km. This suggests that the development of the motorway alleviates heavy traffic on NR8 and eventually contributes to a reduction in accidents on the national road. According to the beneficiary survey to transport businesses, tourism businesses and agricultural product suppliers that use the motorway constructed under the project, 91% of these respondents (97 out of 107 respondents) felt that the number of traffic accidents on NR8 decreased.

Table 7 Accident Rates and Rate of Casualties in Traffic Accidents on the Entire Route of the Motorway (the entire route of the project) (accidents/100 million vehicle-km)

Segment	km	Category	2010 <sup>Note 2</sup>	2011	2012	2013 <sup>Note 3</sup>
Marrakech-Chichaoua	82	Accident rate	11.35	22.69	12.71	22.55
		Casualty rate	0	2.33	1.91	0.78
Chichaoua-Imintanoute	30	Accident rate	16.04	24.46	22.2	18.18
		Casualty rate	1.78	3.06	4.46	0
Imintanoute-Argana	60	Accident rate	22.59	24.18	16.79	24.33
		Casualty rate	3.08	9.85	-	2.03
Argana-Ameskroud <sup>Note 1</sup>	48	Accident rate	33.26	51.5	39.34	25.48
		Casualty rate	4.75	9.47	7.68	8.49
Ameskroud-Agadir	11	Accident rate	5.48	11.68	3.41	0
		Casualty rate	0	0	0	0

Source: ADM data

Note 1: Data in thick frames is for the segment financed by Japanese ODA loan.

Note 2: The service started in June 2010.

Note 3: As of September 30, 2013

Table 8 Accident Rates and Rate of Casualties in Traffic Accidents on NR8 (the entire route of the project) (accidents/100 million vehicle-km)

Segment	km	Category	2009	2010	2011	2012	2013
Marrakech-Chichaoua	137	Accident rate	71.76	69.66	71.97	N/A	N/A
		Casualty rate	23.39	9.66	10.17	N/A	N/A
Chichaoua-Imintanoute	33.5	Accident rate	69.21	44.29	18.03	N/A	N/A
		Casualty rate	3.05	3.56	2.03	N/A	N/A
Imintanoute-Agadir	60	Accident rate	86.1	37.04	61.73	N/A	N/A
		Casualty rate	37.07	6.61	7.12	N/A	N/A

Source: ADM data

### 3.3 Impact

#### 3.3.1 Intended Impacts

##### (1) Increase of tourists to Marrakech and Agadir

An ancient city of Marrakech and a beach resort area in Agadir are among the most popular tourist places

in Morocco for foreign tourists.

As shown in Table 9, the number of foreign tourists to Morocco increased 50% from 2006 to 2012, totalling 9.83 million. The number grew only slightly after 2010 because of the Arab Spring, the European debt crisis, and other factors, but it should be specially noted that the number of foreign tourists continued to increase steadily over the years, though the growth rate remains low. Despite the steady growth of the number of foreign tourists, the tourist revenue in respect of foreign tourists remained more or less unchanged. The Marrakech Tourist Bureau attributed it to a decrease in revenue per tourist because of price competition among hotels and a decline in the number of nights stayed.

Table 9 Number of Foreign Tourists (10,000 people) and Tourist Revenue (100 million MAD)

Category	2006	2007	2008	2009	2010	2011	2012	Growth rate (2006-2012)
No. of foreign tourists	655.8	740.7	787.8	834.1	962.6	978.3	983.0	150%
Tourist revenue	524	595	554	528	566	591	579	109%

Source: Morocco Statistical Yearbooks 2012, 2008 and 2006

According to interviews at bus terminals and travel agencies, the shortened travel time between Casablanca and Agadir is the most substantial impact of the project, contributing to an increase in the number of foreign and domestic tourists to Agadir. Some respondents to the interviews say that the number of tourists from within the country has been increasing because the shortened travel time has made it possible to include Agadir in coach tours, and made it easier to travel from Casablanca to Agadir by private cars.

Table 10 shows the number of guests of accommodations in Marrakech and Agadir, according to which, the number of guests already started to increase in the year before 2010 when the motorway was opened, decreased slightly in 2011 but increased again in 2012. It is supposed that this trend is because of decrease in the number of nights stayed and places visited by foreign tourists because of the Arab Spring and European debt crisis, and also because of an increase in the number of foreign tourists who did not use hotels or other accommodations<sup>10</sup>. On the other hand, the ratio of domestic tourists (residents in Morocco) to the total number of tourists has been increasing each year. Travel agencies, hotels and other tourist businesses are beginning to prepare for increased demand for tourism in the hope that they will be able to have domestic tourists as a new demand source in low seasons when the number of foreign tourists is small if the number of tourist buses and private cars continues to steadily increase.

In line with this, this project constructing the motorway linking major tourist areas has contributed particularly to the attraction to not just foreign tourists but also domestic tourists.

<sup>10</sup> Recently, an increasing number of tourists chiefly from France and Spain use motor caravans for longer stays in Morocco. Even during the field survey, quite a few spaces especially for motor caravans were observed in Marrakech, Agadir and other tourist places. The Marrakech Tourist Bureau considers that an increase in long-stay tourists will vitalize the regional economy.

Table 10 Indicator related to Tourism in Marrakech and Agadir

Category	Location	2008	2009	2010	2011	2012	
No. of guests of accommodations (1,000 persons)	Marrakech	1,567	1,590	1,782	1,587	1,661	
	Agadir	725	699	783	781	812	
	Morocco as a whole	5,411	5,371	5,936	5,517	5,834	
No. of nights stayed (1,000 nights)	Marrakech	Total	5,573	5,533	6,357	5,754	5,918
		Of which, Domestic tourists (residents in Morocco)	756	894	1,035	1,180	1,329
		Ratio	14%	16%	16%	21%	22%
	Agadir	Total	4,653	4,468	4,807	4,487	4,499
		Of which, Domestic tourists (residents in Morocco)	575	630	657	742	816
		Ratio	12%	14%	14%	17%	18%
No. of hotels	Marrakech	-	823	904	1,017	1,160	
	Agadir	-	9	96	98	112	
	Morocco as a whole	-	1,806	2,003	2,188	2,521	

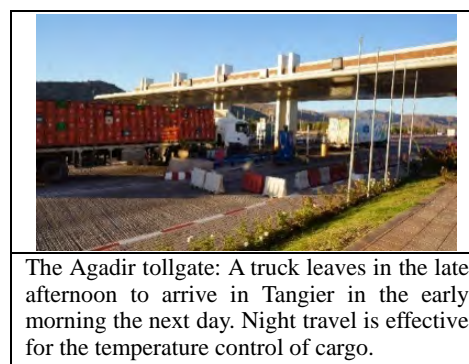
Source: Morocco Tourism Annual Statistics

## (2) Promotion of domestic logistics in Morocco

### 1) Logistics sector

As stated in the section of relevance, the Government of Morocco formulated the National Strategy for the Development of Logistics Competitiveness in 2010 to develop a domestic cargo transport network, and aims to achieve economic growth and employment creation through building a logistics platform including the development of a motorway network. The strategy regards Marrakech and Agadir as important logistics bases in the country, so the expansion of the north-south motorway network to Agadir under the project has contributed to promoting the country's logistics policy.

As shown in Table 11, Morocco saw an improvement of the logistics performance index<sup>11</sup> (hereinafter referred to as the "LPI") of the World Bank from a score of 2.40 points in 2007 to 3.03 in 2012, and was ranked 93 to 50 over the period. While the global economic divide between developed countries and developing countries in the cargo transport and trade sectors remains unsolved, where high-income, developed countries rank high and low-income, underdeveloped countries rank low, Morocco has been improving its logistics efficiency at a rate above the average, although it is counted as a lower-middle income country. The expansion of the motorway network including the route expanded under the project, improvements of the quality of logistics infrastructure, shortened transport time and reduction of traffic accidents have contributed to improvements in the elements of the LPI score including competitiveness and timeliness of logistics.



The Agadir tollgate: A truck leaves in the late afternoon to arrive in Tangier in the early morning the next day. Night travel is effective for the temperature control of cargo.

<sup>11</sup> The logistics performance index (LPI) is an indicator which multidimensional evaluates international logistics performance in accordance with more than 5,000 country assessments made by about 1,000 international logistics companies. The LPI enables to compare international logistics in 155 countries. Japan was ranked 8th in 2012.

Table 11 Logistics Performance Indicator (LPI) of Morocco

Category		2007	2012
Morocco's ranking among 155 countries in the LPI		93rd	50th
Overall LPI		2.40	3.03
Scores of individual indicators	Customs	2.20	2.64
	Infrastructure	2.33	3.14
	International shipments	2.75	3.01
	Logistics competence	2.13	2.90
	Tracking and tracing	2.00	3.01
	Timeliness	2.86	3.51

Source: The World Bank, Connecting to Compete: Trade Logistics in the Global Economy, The Logistics Performance Index and Its Indicators, 2007, 2012

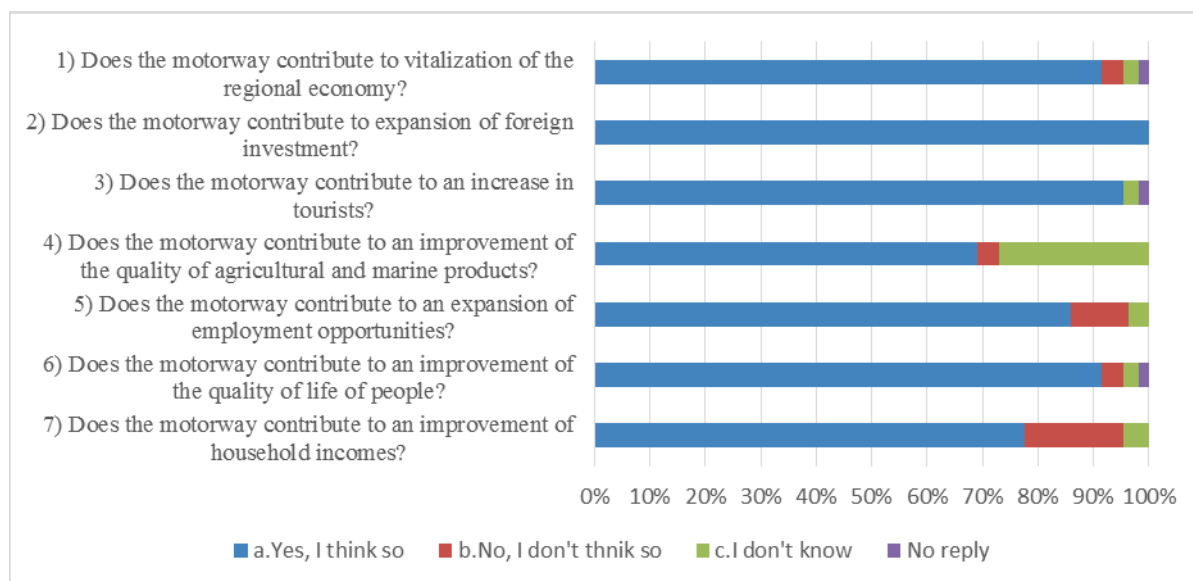
Note: The ranking is the overall ranking based on the scores of individual indicators. The score ranges from 0 to 5.

## 2) Beneficiary survey

To find the impacts of the project, interviews were made to governmental agencies of Souss-Massa-Draa and agricultural product suppliers in Agadir, and quite a few persons interviewed stated that Agadir used to be isolated from any land route but was now unclosed. What they meant was, more specifically, that the south end of the country's motorway network used to be Marrakech, but the project extended the motorway to Agadir and linked the city with tourist cities of Casablanca and Marrakech, and logistics bases of Casablanca and Tangier, so the project had positive impacts on tourism (particularly domestic tourism) and cargo transport. Interviews to logistics businesses and agricultural product suppliers revealed that they used to have difficulty estimating arrival times when they used NR8 because of unforeseen incidents such as traffic congestion and road closure, but now can accurately estimate arrival times if they use the motorway, and decide when to leave Agadir to meet the schedules of ships departing from the Port of Tangier. They seemed to feel that they benefit from the motorways in terms of quality control and the shortened travel time.

Figure 1 below shows the results of the beneficiary survey addressed to transport businesses, tourism businesses and agricultural product suppliers. Asked if the development of the motorway linking Marrakech and Agadir contributed to the regional economy, foreign investment and increase of tourists, 90% or more of the respondents gave affirmative replies. As for an expansion of employment opportunities and an increase in household incomes, 11 and 19 out of all the 107 respondents, respectively, gave negative replies. This suggests that it is necessary to take further steps to make the motorway bring economic benefits to the individual level.





Source: The beneficiary survey conducted as part of this ex-post evaluation, February-May, 2014

Note: The beneficiary survey was conducted towards transport businesses, tourism businesses and agricultural product suppliers, and received replies from a total of 107 respondents.

Figure 1 Results of the Beneficiary Survey to Users of the Motorway Developed under the Project

### 3.3.2 Other Impacts

#### (1) Impacts on the natural environment

##### 1) Formulation of environmental impact assessment (EIA) report, and planning and implementation of mitigation measures

At the time of project appraisal, an environmental impact assessment (EIA) report was formulated in compliance with the Japan Bank for International Cooperation Guidelines for Confirmation of Environmental and Social Considerations (2002). The project was also designed to incorporate measures to mitigate environmental impacts: that is, regularly measuring the quality of river water when bridges were constructed and taking measures if any problem arose with the water quality; and replanting twice as many Argan trees as those to be cleared for the construction work. As stated in the following sections 2) and 3), the measuring and analysis of the quality of river water and reforestation of Argan trees were implemented as planned.

##### 2) Pollution control measures

The project appraisal found that air pollution and noises during the construction work of the project would have little impact on the environment, and an arrangement was made to require ADM to monitor the construction work and take steps if any problem arose. At the time of ex-post evaluation, the results of the monitoring activities were confirmed to ADM. As a result, no particular problem arose during the construction term, and thus ADM conducted no additional measures against air pollution or noises. AMD compiled monitoring results and submitted to JICA as regular monitoring reports.

As for water contamination, because ADM was required to measure the water quality at two points in Tassademt (PK111) and Imarside (PK118), it commissioned a laboratory to monitor and analyze the water quality. As a result, the water quality at the points showed no particular problem, so no water quality control measure was taken. The results of the monitoring activities were reported to JICA.

3) Reforestation

The construction work under the project required clearance of Argan trees on land of 360ha, but a total of 200,000 Argan trees were planted on land of 920ha, more than twice as large as the reforestation land area targeted.



A young Argan tree planted as part of the project

After the forestation, ADM reported that the Argan trees planted on land of 920ha were steadily growing, and that all the reforestation programs initially planned, as well as the acceptance inspections for all reforestation contracts, were completed. Currently, the reforestation area is under the management of La Direction Régionale des Eaux et Forêts du Sud-Ouest (hereinafter referred to as “DREF-SO”) in compliance with a cutting area compensatory arrangement<sup>12</sup> between ADM and DREF-SO. Moreover, because it takes time for Argan trees to grow to adult trees, DREF-SO conducts additional forestation and reforestation in accordance with the progress of growing. It set out a medium-term target of reforestation as replanting of some 100 adult trees per 1ha.

4) Monitoring

As stated above, environment mitigation measures were implemented during the construction work as initially planned, and the results of monitoring of water quality, dust control, progress of rooting of Argan trees were regularly reported to JICA. Moreover, no particular problem has arisen in relation to these measures.

(2) Land Acquisition and Resettlement

The total area of land purchased by ADM for construction of the motorway segment financed by Japanese ODA loan was approximately 409ha, all of which was national land. The construction work has involved no resettlement of residents.

(3) Unintended Positive /Negative Impact

None.

The annual average daily traffic, the indicator for effectiveness of the project, achieved the targeted value, and the traffic volumes on the segment and the entire route constructed under the project are increasing as planned. The evaluation indicators for reduction of vehicle operation cost, reduction of travel time and

<sup>12</sup> The compensatory arrangement for the land of 920ha between ADM and DREF-SO was completed by 2010.

reduction of traffic accidents indicated that the relevant targets were achieved in general. The project appears to benefit motorway users as initially planned. Moreover, the accident rate on the motorway is lower than that on NR8, so the project also contributes to a reduction in the overall accident rate.

Meanwhile, while the development of the cargo transport and trade sectors was substantially advancing in Morocco compared to the time of project appraisal, the motorway route developed under the project now serves as an important logistics infrastructure, so contributes to regional economic development through promotion of cargo transport. In terms of the tourism sector, too, the motorway helps shorten the travel time from Casablanca to Agadir, contributing to attraction to not just foreign tourists but also tourists from within the country.

In line with these, this project has largely achieved its objectives. Therefore, its effectiveness and impact is high.

### **3.4 Efficiency (Rating: ②)**

#### **3.4.1 Project Outputs**

This ODA loan was addressed to the third segment – the Argana-Ameskroud segment (46km) – out of the entire Marrakech-Agadir route (234km). Table 12 shows differences between the plan and actual project performance, and the following sections give account of major modifications to the initial plan and the reasons for the modifications.

##### Cancellation of construction of service areas and auxiliary facilities (one overpass)

The locations of service areas on the entire route of the Marrakech-Agadir motorway were reviewed in consideration of road gradients, intervals of service areas and other aspects. The service area to be constructed was relocated to other segment (Chichaoua and Argana). Because of this, the construction of an overpass as part of the service area was cancelled.

##### Changes in the number of bridges and other passages

The numbers of bridges, automobile and pedestrian passages were changed from 2 to 3; 2 to 9; and 1 to 5, respectively.

According to the results of detailed design survey, ADM confirmed the necessity of increasing the number of bridges to be constructed from two to three for topographical reasons, and conducted the procedures for the change upon the approval of JICA.

In addition, automobile and pedestrian passages were constructed so that the motorway constructed would not interfere with movements of local citizens. For this purpose, the needs of local citizens were confirmed in advance.

Table 12 Comparison of Plan and Actual Performance of Project Output

Category	Initial plan	Actual performance
1) Construction of motorway	46 km (Two lanes each way)	46 km (Two lanes each way)
2) Service area	One each in both directions	Cancelled
3) Bridge	2	3
4) Passage		
a) Superior passage	6	5
b) Inferior passage	4	5
c) Passage for vehicle	2	9
d) Passage for pedestrian	1	5

As stated above, the project output was slightly modified from the initial plan but had no problems in terms of technical, environmental and cost perspectives. Thus, the modifications have proved to be appropriate.

### 3.4.2 Project Inputs

#### 3.4.2.1 Project Cost

As summarized in Table 13, the original total project cost was 30,097 million JPY and the original cost of the segment subject to the ODA loan was 17,726 million JPY. In practice, the actual project cost was 24,943 million JPY and the cost of the segment concerned was 17,725 million JPY, both lower than planned.

The difference between the original and actual costs of the segment financed by the ODA loan arose because, prior to commencement of the construction work, ADM changed the design of the entire route of the Marrakech-Agadir motorway including changes in the locations of auxiliary facilities. Development of facilities in appropriate locations helped to enhance the project effect, so the changes have proved to be appropriate.

Table 13 Comparison of Original Cost and Actual Project Cost

(Unit: million JPY)

Category	Original cost			Actual cost		
	Foreign currency portion	Local currency portion	Total	Foreign currency portion	Local currency portion	Total
[Item financed by ODA loan]						
Civil works	15,642	0	15,642	4,976	11,371	16,347
Price escalation	596	0	596	250	571	821
Physical contingencies	812	0	812	0	0	0
Consulting services	118	12	130	0	11	11
Land acquisition / compensation	0	0	0	0	0	0
Interest during construction	546	0	546	546	0	546
Subtotal	17,714	12	17,726	5,772	11,953	17,725
[Items not covered by ODA loan]						
Civil works	0	8,418	8,418	538	1,230	1,768
Civil work for auxiliary facilities (financed by AfDB)	0	1,379	1,379	0	979	979
Price escalation	0	513	513	78	179	257
Physical contingencies	0	451	451	0	0	0
Land acquisition / compensation	0	903	903	0	30	30
Administration cost	0	561	561	0	293	293
Taxes and duties (VAT and tariffs)	0	146	146	0	3,891	3,891
Subtotal	0	12,371	12,371	616	6,602	7,218
Total project cost	17,714	12,383	30,097	6,388	18,555	24,943

Note: Exchange rates: 1DH=12.2 JPY at the time of project appraisal (Oct. 2003), and 1DH=12.3 JPY for actual cost (on average)

Source: ADM data

#### (Reference information)

This project divided the entire Marrakech-Agadir section into four segments, each of which was financed by different financing organizations. The project effect does not emerge by completing only one of these subprojects. In other words, the project effect emerges only when all the subprojects between Marrakech and Agadir have been completed and ADM has commenced the services of the entire route. Therefore, it is not realistic to set indicators to measure the project effect for the segment financed by the ODA loan, but it is appropriate to confirm the emergence of the project effect in terms of indicators to see the operation and effect of the entire motorway route.

According to ADM, the project cost of the entire motorway route was originally 9,109 million MAD and actually 7,965 million MAD. Of these costs, as Table 14 indicates, 6,833 million MAD were financed by major financing organizations. These organizations conducted completion surveys, but had not completed any survey equivalent to the ex-post evaluation at the present moment.

Incidentally, the project was expected to produce a greater economic effect by expanding the motorway network in Morocco up to Agadir. Thus, confirmation of the economic effect of the entire motorway network, rather than that of the Marrakech-Agadir section, was considered to be important, and ADM planned on carrying confirmation of the effect. But as ADM had not assessed the effect yet, this ex-post evaluation was unable to confirm any economic effect of the project that successfully linked the Marrakech-Agadir section to the national motorway network in Morocco.

Table 14 Loan Amounts of Individual Financing Organizations for the Segments

Segment	Length	Financing organization	Loan amount (million MAD)
Segment 1: Marrakech-Chichaoua	84km	Islamic Development Bank (IDB) and the Arab Fund for Economic and Social Development (AFESD)	1,783
Segment 2: Chichaoua-Argana	92km	African Development Bank, AFESD and the Kuwait Fund for Arab Economic Development (KFAED)	3,161
Segment 3: Argana-Ameskroud	46km (Two lanes each way)	JICA	1,612
Segment 4: Ameskroud-Agadir	12km	AFESD	277

Source: ADM data

### 3.4.2.2 Project Period

The project period was scheduled to be 45 months starting in March 2006 and ending in November 2009, but the actual period was 49 months (109% compared to the planned period) starting in March 2006 and ending in March 2010, slightly longer than planned.

According to a report submitted by ADM, the difference between the planned period and actual period was chiefly attributable to the following reasons.

- Extension of civil work due to upward water movements
- Interruption of civil work due to the implementation of a work to stabilize embankments at places where embankments were unstable

The subprojects other than that financed by the ODA loan were carried out in mutual collaboration of the financing organizations concerned, completed in March 2010, and put into service in June 2010.

### 3.4.3 Results of Calculations of Internal Rates of Return (Reference only)

The internal rate of return (IRR) was recalculated in accordance with the conditions applied when it was initially calculated at the time of project appraisal. Both the economic internal rate of return (EIRR) and financial internal rate of return (FIRR) outnumbered those calculated at the time of project appraisal, because the traffic volume in the previous one year of the ex-post evaluation increased more than expected, though the project started about six months later than scheduled.

#### Economic Internal Rate of Return (EIRR)

	At the time of project appraisal (2005)	At the time of ex-post evaluation (2013)
EIRR	11.5%	13.8%

Conditions:

- Cost: Project cost (excluding tax), operation and maintenance expense
- Benefit: Reduction of vehicle operating cost, reduction of travel time, and reduction of traffic accidents
- Project Life: 35 years

### Financial Internal Rate of Return (FIRR)

	At the time of project appraisal (2005)	At the time of ex-post evaluation (2013)
FIRR	3.9%	4.4%

Conditions:

- Cost: Project cost, operation and maintenance expense
- Benefit: Income from toll fees
- Project Life: 35 years

In line with this, although the project cost was within the plan, the project period slightly exceeded the plan. Therefore, efficiency of the project is fair.

### 3.5 Sustainability (Rating: ③)

#### 3.5.1 Institutional Aspects of Operation and Maintenance

The Operation and maintenance (O&M) after the completion of the project is appropriately implemented as planned on the initiative of ADM.

While the motorway network of which ADM is in charge of the O&M has been expanding, its workforce remains more or less the same as shown in Table 15. This is because ADM aims to improve the work efficiency and reduce the labor cost by outsourcing on-site maintenance, inspection, construction work and other works to outside private companies as much as possible, and establishing a system whereby ADM officials focus on the quality control of works commissioned out to outside parties.

Table 15 Workforce of ADM

(Unit: person)

Category	2007	2008	2009	2010	2011	2012
Total No. of officers	597	568	590	569	564	548
Of whom Managing officers	137	149	171	172	169	161

Source: ADM data

For the O&M of the motorway route constructed under the project, ADM established administration centers in Marrakech and Agadir, and the center in Agadir is in charge of the segment financed by the ODA loan.

Table 16 shows the workforce composition of the two centers, where personnel with skills and experience in the O&M are stationed. The Marrakech center is headed by an engineer, who is a specialist of civil engineering and has worked for ADM for 20 years. The motorway administration centers are staffed by engineers who are regular staff members of ADM and equipped with video systems processing and analyzing data from surveillance cameras installed along the motorway. Incidentally, regular staff members of ADM are all managing officers or system engineers, the remaining staff members are outsourcing workers or temporary staff members. Thus, ADM hires a larger number of temporary patrolmen and toll-keepers on days when traffic is expected to be heavy on the motorway (when, for example, the dates

that events are held on new soccer ground in Agadir).

ADM also outsources services such as routine patrolling for road maintenance, repair work and emergency call center, but has guidelines and manuals for all the motorway sections under its management and thus has established an integrated management system. It decides outsourcing contractors not under negotiated contracts but by bidding, and normally concludes outsourcing contracts for a contract term of three years.

Table 16 Workforce Composition at the Marrakech and Agadir Administration Centers

(Unit: person)

Section	Marrakech	Agadir
Head of the center	1	1
Chief in charge of maintenance	1	1
Chief in charge of toll collection	1	1
Clerical workers	3	2
Engineers	10	9
Messenger	1	1
Outsourcing and temporary workers	48 toll collectors; 12 central toll collectors; 4 workers responsible for toll collection; 4 telephone receptionists; 17 patrolmen; and 3 group leaders	47 toll collectors and workers in charge of customer services; 30 wireless radio operators, assistants and tunnel inspectors; 38 workmen and group leaders; and 3 engineers
Total	135 persons	134 persons

Source: ADM data

### 3.5.2 Technical Aspects of Operation and Maintenance

The Marrakech and Agadir administration centers undertake: (1) site patrolling and accident response; (2) 24-hour information gathering with surveillance cameras and exchanges of information with the Royal Moroccan Gendarmerie and fire departments; (3) repair work of auxiliary facilities including road surfaces and road signs; and (4) toll collection. These tasks are carried out in accordance with guidelines and manuals common to all the administration centers located on the entire motorway network administered by ADM. The guidelines and manuals, when updated, are shared by all the administration centers across the country.

The administration centers are also equipped with surveillance cameras and vehicles for road surface surveys. Data on road infrastructure collected with these tools are analyzed by a motorway road asset operation and maintenance system at the ADM headquarters. The system is also used as a support tool to determine policies for civil work taking budgets into consideration. Apart from these, ADM is working to provide more quality services by introducing an electric toll collection system, a call center “5050” for motorway users and a driving assisting system that provides drivers with traffic information in a text format.

While ADM outsources all the site patrolling, toll collection, road surface repair, and repair of auxiliary facilities regardless of the size of repair work, it strictly stipulates uniform guidelines and manuals, requiring administrators at all the administration centers to comply with them and maintain the quality of tasks outsourced. Moreover, there are quite a few contractors that are capable of undertaking large civil



work in Morocco, and thus there is no particular technical problem. ADM is reportedly committed to not just the technical quality control but also labor conditions and other aspects when necessary, so that no technical problems arise on site.

In line with these, no particular technical problem has been observed in relation to the operation and maintenance.

### 3.5.3 Financial Aspects of Operation and Maintenance

Table 17 lists motorway tolls on the route constructed under the project. The toll fees on the segment financed by the ODA loan are 17 MAD for light vehicles and 29 MAD for heavy vehicles. Table 18, on the other hand, lists the income from toll fees on the entire motorway route under the project. The table suggests that the income have been increasing in proportion to an increase in the number of cars using the motorway.

Table 17 Toll Fees on the Motorway Route as of February 2014

(Unit: MAD)

Segment on the motorway	Light vehicle: Class 1	Heavy vehicle: Classes 2 & 3
Marrakech - Chichaoua	35	57
Chichaoua - Imintanoute	11	19
Imintanoute - Argana	19	32
Argana - Ameskrout	17	29
Ameskrout - Agadir	4	7

Source: ADM toll fee table

Note: Class 1: passenger cars, Class 2: 8t or lighter busses and trucks  
Class 3: 8t or heavier busses and trucks

Table 18 Toll Income by Segment

(Unit: million MAD)

Segment	Vehicle type	2009	2010	2011	2012	2013
Marrakech - Chichaoua	Light vehicle	21.216	28.093	39.906	37.559	34.726
	Heavy vehicle	9.292	15.806	22.392	15.945	12.957
	Total	30.508	43.899	62.298	53.504	47.683
Chichaoua - Agadir	Light vehicle		27.940	58.282	65.814	74.137
	Heavy vehicle		11.976	24.978	28.206	31.773
	Total		39.916	83.260	94.020	105.910
Marrakech - Agadir Total	Light vehicle	21.216	56.033	98.188	103.373	108.863
	Heavy vehicle	9.292	27.782	47.370	44.151	44.730
	Total	30.508	83.815	145.558	147.524	153.593

Source: ADM data

Table 19 shows the financial standing of ADM, according to which toll sales were increasing over the years, particularly from 1,762 million MAD to 1,936 million MAD, or some 10%, from 2011 to 2012. This was attributable to the opening of new motorway sections and an increase in the traffic volume. The

motorway tolls are determined by the governmental policy and thus ADM has no authority to raise tolls, but no particular problem was seen in the current toll level.

Table 20 shows the financial standing of ADM, indicating that the operating income has been in surplus since 2012, but that ADM recorded a net deficit of 437 million MAD in FY2013, though the margin of the net deficit decreased from the previous fiscal year. ADM was reportedly obliged to post the deficit in 2013 because it overestimated revenue and underestimated expenditures at the time of budget formulation, and needed to earmark an additional budget but was unable to do so within the accounting period in 2013. According to ADM, for example, the relatively large deficits in 2010 and 2011 were attributable to a decrease in toll income due to a delay in the completion of the Marrakech-Fez motorway construction; and a delay in posting revenues arising from additional investment because an increase in expenditures of a large-scale operation and maintenance plan (eight-year plan) for existing motorways was not reflected in the budget plan.

Table 21 shows increases in capital of ADM invested by the government. The increased capital is invested in not just new projects but also the operation and maintenance, repayments of loans and other purposes. ADM states that its income sources include revenue, capital increase, corporate bonds (governmental compensation) and project-based borrowings, and spends these funds, except project-based borrowings, on road construction, the operation and maintenance and repayments of loans without specifying purposes of the spending in advance. ADM claims itself as an organization to undertake projects in compliance with policy and implementation plans of the Government of Morocco. In addition, the Government of Morocco approved that ADM raises necessary operating funds by capital increases. Thus, it is considered that no financial problem will arise in connection with the operation and maintenance. Even so, ADM seems to be required to operate projects efficiently so as to restrain spending in future.

Table 19 Operating Income and Expenditure of ADM

(Unit: million MAD)

Category	2009	2010	2011	2012	2013
Income					
- Toll income	1,310	1,525	1,762	1,936	2,051
- Other operating income	93	143	136	109	85
Total	1,403	1,668	1,898	2,045	2,136
Expenditure					
- Consumable goods	82	103	129	130	157
- Tax	1.7	2	2	1	2
- Labor cost	133.5	141	151.1	159	169
- Other operating cost	0.8	10	0.9	1	1
- Other external cost	379	373	718	322	217
- Allowance for operation	710	852	978	1,027	1,164
Total	1,307	1,481	1,979	1,640	1,710

Source: ADM data

Table 20 Financial Standing of ADM

(Unit: million MAD)

Category	2009	2010	2011	2012	2013
1) Income	1,404	1,668	1,898	2,045	2,155
2) Expenditure	1,307	1,481	1,979	1,640	1,710
3) Operating income (1-2)	97	187	-81	405	445
4) Financial balance	-403	-1,263	-1,503	-639	-875
5) Current profit (3+4)	-306	-1,076	-1,584	-234	-430
6) Non-operating profit	3	28	192	66	4
7) Pretax profit (5+6)	-303	-1,048	-1,392	-168	-426
8) Profit tax	7	8	10	11	11
9) Net profit (7-8)	<b>-310</b>	<b>-1,056</b>	<b>-1,402</b>	<b>-179</b>	<b>-437</b>

Source: ADM data

Table 21 Capital of ADM and Capital Increase Financed by the Government

(Unit: MAD)

Category	2009	2010	2011	2012	2013
Capital	8,866	10,016	11,156	12,295	13,435
Capital increase	1,150	1,150	1,140	1,140	1,140

Source: ADM data

In line with these, no major financial problems has been observed in the operation and maintenance of the motorway road facilities.

### 3.5.4 Current Status of Operation and Maintenance

In this field survey, the study team confirmed the road surface and facilities on the entire motorway route between Marrakech and Agadir with officers of the ADM headquarters. It paid particular attention to the state of maintenance of auxiliary structures in the segment financed by the ODA loan, and found that these structures were appropriately maintained and that no places needed any repair work. Other than these, the study team found that ADM was working to install rock fall protection nets and pockets on the mountainous zones with steep hills on the segment financed by the ODA loan<sup>13</sup>.

The administration centers in Marrakech and Agadir were working on the operation and maintenance work in accordance with a maintenance plan for electric equipment, tollgate facilities, road sign equipment and road facilities. These on-site works are carried out not just on the motorway route under the project but on the entire motorway network by all the administration centers across the country in compliance with uniformed guidelines and manuals. Moreover, because the road surface of motorways is designed to last for 8-10 years, ADM prepares regular maintenance programs over several years for the entire route between Marrakech and Agadir in accordance with regular road surface surveys. ADM commissions out repair works on asphalt pavements that need to be repaired to outside contractors.

<sup>13</sup> Repair work was in progress in a segment next to the segment financed by the ODA loan because there was damage to joints of asphalt pavement (as of February 2014). The segment has many steep slopes as the segment financed by the ODA loan, which also needs regular surveillance.

In line with these, no major problems have been observed in the institutional, technical and financial aspects of the operation and maintenance system. Therefore, sustainability of the project effect is high.

## **4. Conclusion, Lessons Learned and Recommendations**

### **4.1 Conclusion**

The objective of this project was to respond to the increasing demand for transportation by constructing a motorway linking Marrakech and Agadir, which are centers of economic activities and tourism in Morocco, thereby contributing to the promotion of trade both domestically and with Europe, etc., and to the revitalization of Morocco's economy by promoting tourism. With respect to this objective, the Government of Morocco regarded transportation and trade, and tourism as key sectors to boost the domestic economic growth both at the times of project appraisal and the ex-post evaluation of the project, and thus has been systematically committed to development of infrastructures including motorways. Japan has also focused on assistance to promotion of sustainable economic growth through development of economic and social infrastructures. Therefore, this project has been highly relevant to the country's development plan and development needs, as well as Japan's ODA policy. Therefore its relevance is high.

The implementation of the project more or less achieved the expected targets of effectiveness: the annual average daily traffic increased as planned in all the sections including the Argana-Ameskroud section subject to the project. In addition, the section concerned plays a crucial role while the domestic logistics network has been expanding. As for the tourism sector, the project helped shorten the traveling time in the section, giving positive impacts on enhancing the attraction to not just foreign tourists but also tourists within the country. In line with these, this project has largely achieved its objectives. Therefore, its effectiveness and impact is high.

The project cost was within the original cost, but the project was period slightly extended, so the efficiency of the project proved to be fair. About the perspective of sustainability, ADM, the executing agency of the project, has established an appropriate operation and maintenance system, so it is concluded that the motorway and auxiliary facilities are operated and maintained basically in a sound manner. Therefore sustainability of the project effect is high.

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

### **4.2 Recommendations**

#### **4.2.1 Recommendations to the Executing Agency**

- The segment financed by the ODA loan is in a mountainous area with continuous steep slopes, so ADM takes measures rock fall prevention measures. ADM is still required to continue regular monitoring and rock fall prevention measures.

#### **4.2.2 Recommendations to JICA**

None.

### **4.3 Lessons Learned**

- Setting of indicators in the case where Japanese ODA loan is provided to part of a project for development of large infrastructure

This project aimed to develop a motorway between Marrakech and Agadir (234km) by dividing the entire route into four subprojects, each of which was financed and constructed by Japan, the African Development Bank and Arab donors (the Kuwait Fund for Arab Economic Development (KFAED), Arab Fund for Economic and Social Development (AFESD) and Islamic Development Bank (IDB)). When Japan offers an ODA loan to part of a project for development of large infrastructure as in this project, it will be desirable in principle for all donors involved to set out shared targets (standard and target values) to confirm the entire project effect, and make arrangements to enable them to see the entire project effect through joint monitoring and other activities. In reality, however, Japan has no particular framework or other setting for cooperative assistance with any donors other than OECD/DAC member countries and thus has difficulty in setting common indicators for the entire project. Even in such a case, it is important to use standard and target values of the entire project of the executing agency as supplementary indicators, and monitor and evaluate the projects in accordance with these supplementary indicators.

## Comparison of the Original and Actual Scopes of the Project

Item	Original	Actual
1. Project outputs	<p>1. Civil work, procurement of equipment, etc.</p> <p>(1) Construction of motorway Argana-Ameskroud Section (46km), 2 lanes each way (total of 4 lanes)</p> <p>(2) Construction of service areas: 1 service area each way</p> <p>(3) Construction of bridges: 2 places</p> <p>(4) Passages  a) Superior passage: 6  b) Inferior passage: 4  c) Passage for vehicle: 2  d) Passage for pedestrian: 1</p> <p>2. Consulting services for the segment financed by the ODA loan</p>	<p>1. Civil work, procurement of equipment, etc.</p> <p>(1) Construction of motorway Argana-Ameskroud Section (46km), 2 lanes each way (total of 4 lanes)</p> <p>(2) Construction of service areas: Not implemented</p> <p>(3) Construction of bridges: 3 places</p> <p>(4) Passages  a) Superior passage: 5  b) Inferior passage: 5  c) Passage for vehicle: 9  d) Passage for pedestrian: 5</p> <p>2. Consulting services for the segment financed by the ODA loan</p>
2. Project period	March 2006 – November 2009 (45 months)	March 2006 – March 2010 (49 months)
3. Project cost		
Amount paid in foreign currency	17,714 million yen	6,388 million yen
Amount paid in local currency	12,383 million yen	18,555 million yen
	(1,015 million DH)	(1,509 million DH)
Total	30,097 million yen	24,943 million yen
Japanese ODA loan portion	17,726 million yen	17,725 million yen
Exchange rate	1 DH = 12.2 yen (As of October 2003)	1 DH = 12.3 yen (Average between March 2006 – July 2011)

## 0. Summary

The objective of this Project was to increase the number of tourists and foreign currency revenue by developing tourism infrastructure in the capital city of Amman and tourist attractions in the surrounding area, thereby contributing to the promotion of the tourism industry. This objective was relevant to development policy of both Japan and the Hashemite Kingdom of Jordan (hereinafter called Jordan) as well as to the development needs of Jordan both at the time of the Project appraisal and the ex-post evaluation, therefore its relevance is high.

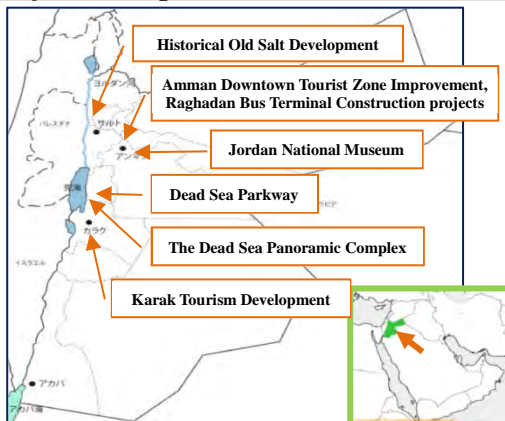
However, at the time of ex-post evaluation, three years after the completion of the Project, two of the seven sub-projects are not fully operational yet. In addition, due to unforeseen events such as the political instability of the region since the Arab Spring, the latest statistics show that numbers of tourists have not reached initial targets. While expanding educational opportunities through museums and intensifying nature conservation activities around the Dead Sea have had positive impacts, the anticipated level of impact on increasing the length of tourists' stays has yet to materialize. In light of the above, the effectiveness and impact of the Project are low.

Although the Project cost was within the plan, the Project period significantly exceeded the initial plan, therefore the efficiency of the Project is fair.

Each agency in charge of a sub-project is continuing to maintain and improve systems for operation and maintenance. In addition, most target facilities are buildings cared for on a daily basis by the agencies in charge and have not given rise to any particular technical concerns. Most of the required budget for maintenance has been secured. In light of the above, the sustainability can be evaluated as high.

In light of the above, the Project is evaluated to be unsatisfactory.

## 1. Project Description



Project Locations



The Dead Sea Panoramic Complex

## **1.1 Background**

Jordan does not have much natural resources compared to its neighbors, and as of the Project appraisal, there were hardly any industries in new fields other than the fertilizer manufacturing industry that relies on rock phosphate for raw material. The economy of Jordan was structurally vulnerable because aid from other countries, money transfers from Jordanian workers working outside Jordan, and tourism revenue from foreign tourists were used to compensate for the country's perpetual trade deficit. Jordan relies on those money transfers because it did not have many domestic industries that can provide jobs; despite the relatively high quality of the workforce in Middle Eastern countries, Jordan's unemployment rate remained high. Thus, tourism industry promotion was ranked as a critical policy issue for bolstering the economy under the weight of the trade deficit.

Jordan is blessed with an abundance of tourism resources. The country owns a wealth of cultural heritage from Roman times, the Christian crusaders, Muslims and the time of the Ottoman Empire, and is home to the Dead Sea and other natural scenery. However, its famous and historical sites and other tourist attractions lacked tourist information services and tourist trails, resource centers and other facilities for welcoming tourists, and thus were not capitalizing fully on their ability to draw tourists. In order to make the abundant tourism resources of Jordan more accessible and attractive to outsiders, it was critical to establish the facilities and infrastructure tourism requires.

In light of these circumstances, the Project was implemented to augment the appeal of the tourism resources in Jordanian tourism hub Amman and the areas surrounding it as well as to increase the number of tourists and foreign currency revenue.

## **1.2 Project Outline**

The objective of the Project is to increase the number of visitors and foreign currency revenue by developing tourism infrastructure in the capital city of Amman and tourist attractions in the surrounding area, thereby contributing to the promotion of the tourism industry.



Loan Approved Amount/ Disbursed Amount	7,199 million yen/ 7,165 million yen
Exchange of Notes Date/ Loan Agreement Signing Date	January 1999/ December 1999
Terms and Conditions	(Main cost) Interest Rate: 2.2%; Repayment Period: 25 years (Grace period: 7 years) (general untied) (Consulting service) Interest Rate: 0.75%; Repayment Period: 40 years (Grace period: 10 years ) (bilateral tied)
Borrower/ Executing Agency	The Government of the Hashemite Kingdom of Jordan/ Ministry of Tourism and Antiquities (MOTA)
Final Disbursement Date	May 2011
Main Contractors	<ul style="list-style-type: none"> <li>• Societta' Italiana Per Condotte D'acqua S.P.A (Italy)</li> <li>• Synergy Construction Pte Ltd (Singapore) • Jurong Consultants Pte Ltd (Singapore) (JV)</li> </ul>
Main Consultant	Oriental Consultants (Japan)
Feasibility Studies, etc.	<ul style="list-style-type: none"> <li>• Special Assistance for Project Formation (SAPROF) for the Tourism Sector Development Project (1996–1997)</li> <li>• Special Assistance for Project Implementation (SAPI) for the Tourism Sector Development Project (2008–2009)</li> </ul>
Related Projects	<ul style="list-style-type: none"> <li>• JICA Development Study: Study on Tourism Development in the Hashemite Kingdom of Jordan (1994–1996)</li> <li>• Tourism Promotion through Museum Activities (2004–2007)</li> <li>• Sustainable Community Tourism Development Project in As Salt City (2012–2015) Paid Technical Assistance – Pro related to ODA loan (total budget of 290 million yen)</li> <li>• Dispatch of experts (Raghadan Bus Terminal, July–August 2013)</li> </ul>

## **2. Outline of the Evaluation Study**

### **2.1 External Evaluator**

Jun TOTSUKAWA, Sano Planning Co., Ltd.

### **2.2 Duration of Evaluation Study**

The External Evaluator performed an evaluation study as follows in the course of this ex-post evaluation:

Duration of the Study: October 2013– December 2014

Duration of the Field Study: December 2–19, 2013, March 15–25, 2014

### **2.3 Constraints during the Evaluation Study**

The Project was intended to have the quantitative effects of increasing the number of foreign tourists, foreign currency revenue and employment opportunities. However, as no existing data accurately captured the number of foreign tourists who visited sub-project target areas (Amman, Dead Sea, Karak, Salt), data from museums and other institutions that accurately record the number of visitors was used to evaluate the quantitative effect of increasing the number of foreign tourists (except at the Jordan National Museum and The Dead Sea Panoramic Complex). Similarly, there was no data for foreign currency revenue at the sub-project level, thus data for all of Jordan was used as a reference point. In addition, there was no data on employment opportunities that covered sub-project target areas, thus the number of workers hired to operate target facilities were confirmed and interviews were conducted around the facilities to confirm the materialization of Project effects.

## **3. Results of the Evaluation (Overall Rating: D<sup>1</sup>)**

### **3.1 Relevance (Rating: ③<sup>2</sup>)**

#### **3.1.1 Relevance to the Development Plan of Jordan**

At the time of the Project appraisal, the Government of Jordan's main development policy, the Five-Year Plan for Economic and Social Development (1993–1997), ranked tourism industry promotion alongside promotion of the mining, agricultural and export industries as the most critical issues for the economic development of Jordan.

At the time of the ex-post evaluation, Jordan had moved from five-year plans for economic and social development to an Executive Development Program (2011–2013). This program emphasizes tourism industry promotion as one of the seven structural elements of a Quantitative Macroeconomic Framework. This program highlights the fact that the tourism industry is a particularly important sector for the economic development of Jordan and is vital for obtaining foreign currency.

In addition, Jordan devised a National Tourism Strategy in 2004, and under the current National Tourism Strategy (2011–2015) policy is steadily progressing alongside other efforts to promote the

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<sup>1</sup> A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

<sup>2</sup> ③: High, ②: Fair, ①: Low

tourism industry. This strategy includes an explanation of the need to continue developing tourism infrastructure to make full use of potential tourist attractions and tourism resources and also increase the length of tourists' stays by appealing to them from the routes and stops they currently frequent on their way to only a few tourist attractions.

In light of the above, the tourism industry promotion supported by the Project was not only relevant to the development policies of Jordan at the time of the Project appraisal but also remains an important undertaking that is one of the important policies at the time of ex-post evaluation.

### 3.1.2 Relevance to the Development Needs of Jordan

At the time of the Project appraisal, Jordan had fewer natural resources than its neighbors with limited arable land. Thus, it is forced to depend on imports for crops such as wheat, and a great deal of other supplies its population needs to live. For this reason, Jordan runs a perpetual trade deficit. Jordan considered it important to promote the tourism industry because tourism revenue generated by foreign tourists is just as critical for bolstering the deficit as aid from other countries and money transfers from Jordanian workers working outside Jordan.

Jordan is blessed with tourism resources such as cultural heritage, the Dead Sea and other unique natural landscapes. However, its tourist attractions lacked the tourist trails, lookouts, resource centers, tourist information centers and other facilities needed to make the existing tourist resources of Jordan more accessible and attractive to foreign tourists. To increase foreign currency revenue, which is critical for Jordan's economic stability, in response to an increase in the number of foreign tourists, Jordan urgently needed to develop its tourism infrastructure to capitalize on tourism resources that had the potential to draw tourists.

The importance of Jordan's tourism industry at the time of the ex-post evaluation had grown even more than during the Project appraisal. The tourism industry was one of the nation's most important industries, accounting for 11.2% of the GDP in 2012. The Government of Jordan has put forth the goal to increase tourism revenue from its 2012 level of 1.7 billion Jordanian dinars (JD) (about 2.38 billion US dollars) to 4.2 billion JD (about 5.9 billion US dollars) by 2015.

Jordan has continued to develop its tourism infrastructure in recent years in pursuit of this goal, but further development is required to appeal to the global tourism market.

At the time of the ex-post evaluation, there is still momentum behind continuing the tourism infrastructure development implemented during the Project, therefore, the Project's relevance to the development needs of Jordan is still high.

### 3.1.3 Relevance to Japan’s ODA Policy

In Japan’s ODA Policy for Jordan (1996), the three areas of “providing basic human needs”, “promoting industry” and “environment protection” were ranked as priority areas for the aid.

On promoting industry, the policy stresses “infrastructure development for tourism and intermediary trade” and pledges “support for the development of infrastructure in the tourism industry, a promising industry for Jordan given its wealth of historical buildings and tourism resources; valuable sources of foreign currency revenue, given Jordan’s central tactical location . . . and other areas of industry.”

In light of the above, this project has been highly relevant with the country’s development plan, development needs, as well as Japan’s ODA policy, therefore its relevance is high.

## 3.2 Effectiveness<sup>3</sup> (Rating: ①)

### 3.2.1 Quantitative Effects (Operation and Effect Indicators)

As Table 1 shows, the Project comprises seven sub-projects.

Table 1: Sub-Project Names and Main Details

	Sub-project name	Main project details	Completion month
1	Amman Downtown Tourist Zone	<ul style="list-style-type: none"> <li>• Improve tourist streets and trails in the downtown area</li> <li>• Build the Visitor Center in the downtown area</li> </ul>	May 2006
2	Raghadan Bus Terminal Construction	<ul style="list-style-type: none"> <li>• Build a bus terminal in Amman City</li> </ul>	May 2006
3	Construction of the Jordan National Museum	<ul style="list-style-type: none"> <li>• Build a museum in the Ras Al-Aim District of Amman City</li> </ul>	July 2011
4	The Dead Sea Panoramic Complex Construction	<ul style="list-style-type: none"> <li>• Build a panoramic lookout and museum, etc.</li> </ul>	April 2004
5	Dead Sea Parkway Construction	<ul style="list-style-type: none"> <li>• Build a parkway that connects existing roads to the shores of the Dead Sea</li> </ul>	November 2005
6	Karak Tourism Development	<ul style="list-style-type: none"> <li>• Renovate the Karak Archaeological Museum</li> <li>• Build tourist streets and observation points</li> </ul>	May 2004
7	Historical Old Salt Development	<ul style="list-style-type: none"> <li>• Renovate the building for museum</li> <li>• Improve tourist streets and trails, plazas and observation points</li> </ul>	June 2011

At the time of the Project appraisal, the Project was envisioned to have the effects of increasing 1) the number of foreign tourists, 2) foreign currency revenue and 3) employment opportunities. As to 1) the number of foreign tourists, in the SAPROF Report, target numbers of foreign tourists were set for each sub-project tourist attraction (specifically, for Amman, Dead Sea, Karak and Salt).<sup>4</sup> However, at the time of the ex-post evaluation, it is clear that no existing data is able to confirm the

<sup>3</sup> Sub-rating for Effectiveness is to be put with consideration of Impact.

<sup>4</sup> The Amman Downtown Tourist Zone sub-project set foreign tourist target for 2012 was 512,499 tourists. Targets were set for the other sub-projects as well: 595,135 tourists for the Jordan National Museum, 438,139 for The Dead Sea Panoramic Complex, 355,503 for the Dead Sea Parkway, 375,332 for Karak Tourism Development and 395,501 for Salt City Tourism Development.

actual figures for these indicators. Similarly, no data exists for foreign currency revenue and employment opportunities created by each tourist attraction. Given these circumstances, in the ex-post evaluation the External Evaluator confirmed obtainable, alternative indicators: the number of domestic and foreign visitors and admission fee revenue at tourist facilities established under the Project as well as employment opportunities created by each facility. While tourist streets and trails, and the Visitor Center in Amman were built and/or improved under the Project, the latter does not keep a record of the number of visitors. Thus, the External Evaluator decided to use, as an alternative indicator, the number of visitors to the Roman Theatre, an attraction visited by an estimated approximately 70 percent of tourists who visit tourist attractions in downtown Amman (based on information from the Jordan Society of Tourist and Travel Agent). The External Evaluator also estimated the number of foreign tourists who visited each tourist attraction, again based on information from the same association, in an attempt to compare it with the targets set at the time of the Project appraisal.<sup>5</sup> It is not possible to evaluate the degree to which the Project contributed to the movement of the number of foreign tourists and foreign currency revenue throughout Jordan. Thus, the information in the ex-post evaluation is treated as indicators for reference. The following is analysis of trends in the number of domestic and foreign tourists and admission fee revenue and the current status of employment opportunities created since the completion of each sub-project, as well as the background and factors that contributed to each.

#### (1) Amman Downtown Tourist Zone

##### (a) Achievement of Quantitative Effects

Tables 2 and 3 show the number of tourists and tourism revenue generated by the Roman Theatre in Amman. As explained previously, no existing data covers the number of foreign tourists and tourism revenue for entire area of this sub-project. Thus, the External Evaluator verified the achievement of quantitative effects based on trends in the number of visitors and admission fees generated by the Roman Theatre, a major tourist attraction in the sub-project area visited by an estimated 70 percent of tourists who visit Amman (based on interviews with the Jordan Society of Tourist and Travel Agent).

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<sup>5</sup> Details on the method used to compare alternative indicators with targets is included as an observation item in (8) Materialization of Quantitative Effects later in this section.

Table 2: Number of Tourists by Year (Unit: persons)

Year	Jordanian	Foreign	Total
2000	N/A	N/A	39,550
2001	N/A	N/A	49,290
2002	N/A	N/A	47,290
2003	N/A	N/A	37,350
2004	N/A	N/A	80,200
2005	N/A	N/A	112,295
2006	N/A	N/A	91,300
2007	N/A	N/A	113,650
2008	N/A	N/A	165,550
2009	49,515	100,510	150,025
2010	46,850	115,600	162,450
2011	51,110	68,250	119,360
2012	64,145	60,050	124,195
2013	62,765	57,700	120,465

Source: MOTA

Note 1: The number of visitors to the Roman Theatre

Note 2: The number of visitors through October 2013

Table 3: Tourism Revenue by Year (Unit: JD)

Year	Tourism revenue
2000	15,947
2001	18,981
2002	11,330
2003	10,648
2004	29,953
2005	84,162
2006	57,513
2007	57,705
2008	156,870
2009	132,003
2010	121,040
2011	75,916
2012	70,273
2013	63,758

Source: MOTA

Note 1: Revenue from Roman Theatre admission fees

Note 2: Revenue through October 2013

The extent to which employment opportunities increased is unclear because such data does not exist.

**(b) Background and Contributing Factors**

The number of tourists and tourism revenue generated by the Roman Theatre in Amman has decreased each year since its peak in 2008. Table 4 shows that the number of tourists visiting Jordan increased steadily until 2008, then stagnated in 2009 as a result of the worldwide economic collapse. The number bounced back in 2010 but has fallen slightly or plateaued in each of the last three years due to the political upheaval in the surrounding area caused by the Arab Spring.

As Table 4 shows, these trends affect not only this sub-project but also tourism in all of Jordan and the rest of the Arab region. According to the executing agency, many tourists purchase package tours that combine Jordan and Syria, thus political upheaval in Syria probably has a significant effect on tourism to Jordan.

【Reference】

Table 4: Number of Foreign Tourists

(Unit: 1,000 persons)

Year	Jordan	Egypt	Syria	Lebanon
2007	3,431	10,610	4,158	1,107
2008	3,729	12,996	5,430	1,330
2009	3,789	11,914	6,092	1,844
2010	4,207	14,051	8,546	2,168
2011	3,960	9,497	5,070	1,655
2012	4,162	11,196	N/A	1,366

Source: World Bank

(2) Raghadan Bus Terminal Construction

(a) Achievement of Quantitative Effects

The bus terminal did not operate between the completion of the facility in 2006 and the time of the ex-post evaluation, thus the initially expected Project effects have not yet materialized.

Meaningful confirmation of an increase in employment opportunities can only happen once the bus terminal begins operating. At the time of the ex-post evaluation, the Amman Terminal Management Unit tasked with operating and managing the Raghadan Bus Terminal had employed 28 people whose work involved the terminal; this can be regarded as the creation of some employment opportunities.

(b) Background and Contributing Factors

One reason for the delay in opening the bus terminal is the fact that it took time to coordinate with the Transport Master Mobility Plan developed by Amman City in 2008. Within the plan, the city proposed a Bus Rapid Transit Development Plan to run buses within city limits,<sup>6</sup> but time is required to consider how to select routes and divide the functions of the Raghadan Bus Terminal and existing bus terminals. Consequently, the launch of the Raghadan Bus Terminal has been delayed.

The most recent development concerning the Raghadan Bus Terminal is the city's November 2013 draft of a new operation plan to use the terminal, meaning that preparation for the full use of the terminal has begun. Terminal space will be used by tour buses and rental car companies, and as of the end of March 2014, Amman City, which is in charge of managing the terminal, is at the final tenant selection stage. The city has also drafted an Execution Plan to explain the plan for operating the terminal in further detail. The city is currently awaiting final approval of the Execution Plan as of March 2014.<sup>7</sup>

<sup>6</sup> Plans for a 32-km transportation network of bus-only lanes

<sup>7</sup> According to information from Jordanian authorities as of September 2014, the following progresses have been made:

1) Amman city signed the agreement with The Jordan Express Tourist Transportation Company, JETT, to use the

### (3) Construction of the Jordan National Museum

#### (a) Achievement of Quantitative Effects

The entire museum is not yet open as of the end of March 2014. The ground floor opened in January 2013, thus the museum is still in a state of soft opening.

Table 5 shows the number of visitors since the soft opening. The current number is considerably smaller than the target set for the Amman Downtown Tourist Zone sub-project (the number of visitors to the Roman Theatre, which is close to the Jordan National Museum). The number is small even when taking into account the soft opening and the fact that the museum is only open three days per week<sup>8</sup>. Preparation for the grand opening and rigorous PR activities to the outside world is required hereafter.

Table 5: Number of Visitors to the Jordan National Museum in 2013 (Unit: persons)

Jordanian tourists	Foreign tourists	Total
3,463	3,372	6,835

Source: The Jordan National Museum

The Jordan National Museum currently employs 48 people; this can be regarded as the creation of some new employment opportunities.

#### (b) Background and Contributing Factors

One reason for the delay of the grand opening is the time required to complete necessary processes for establishment of the Jordan National Museum as an independent corporation. The museum also had to obtain the approval of the Civil Service Bureau to hire employees and is allotted a certain number of new employees each year. Thus, the time required to secure the necessary number of employees is another reason for the delayed opening.

An additional reason for the delay is the amount of time required for each final decision made by the museum's board of trustees, who have the final decision-making authority at the Jordan National Museum.

Preparation is complete for all museum exhibits except the space for the Modern Jordan exhibit. Now the museum is in the situation that it can hold the grand opening very soon if the royal family donates exhibit items for the Modern Jordan exhibit.<sup>9</sup>

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terminal as a route to touristic areas such as Petra, Aqaba, Jerash, etc.

2) The agreement on operation of Rental Cars offices was made with the owners of the Car Rental Association.

3) Tentative operation of the top opened bus in coordination with the owners of the transport companies started.

<sup>8</sup> According to information from Jordanian authorities as of September 2014, the museum now opens 5 days a week.

<sup>9</sup> It was reported at the end of April 2014 that, as a project directly under the king, the grand opening will be held in September with the king and princess in attendance. It has also been reported that the Secretary General of the Ministry of Planning and Cooperation has been named as the person responsible for the opening of the museum in order to clarify who is responsible.



#### (4) The Dead Sea Panoramic Complex Construction

##### (a) Achievement of Quantitative Effects

Tables 6 and 7 show the number of tourists and tourist revenue generated by The Dead Sea Panoramic Complex. The number of tourist visits to the Complex increased each year after it opened in December 2006; however, the number of visitors has been slightly lower since 2011 till now.

The Dead Sea Panoramic Complex was built as new tourist facilities under the Project, thus, the figures shown on the both tables are direct effects of the Project.

Table 6: Number of Tourists (Unit: persons)

Year	Jordanians	Foreigners	Total
2006	160	35	195
2007	6,426	8,874	15,300
2008	9,912	13,688	23,600
2009	15,733	21,727	37,460
2010	17,325	23,925	41,250
2011	16,884	23,316	40,200
2012	17,496	18,954	36,450
2013	16,416	17,784	34,200

Source: Royal Society for Conservation of Nature

Note 1: Figures as of November 2013

Note 2: An additional 6,000 students and local residents visit the lookout each year.

Table 7: Tourism Revenue (Unit: JD)

Year	Admission fees	Restaurants	Rental spaces	Total
2006	1,122	5,000	0	6,122
2007	12,369	29,785	0	42,154
2008	33,550	34,305	0	67,855
2009	60,351	55,147	0	115,498
2010	70,883	64,605	1,583	137,071
2011	53,343	60,981	6,190	120,514
2012	59,976	58,802	6,166	124,944
2013	59,000	60,000	9,000	128,000

Source: Royal Society for Conservation of Nature

Note: Figures as of November 2013

The museum at the Complex created three new employment opportunities while the restaurant created 15 and the shop inside the facility created two. These are all opportunities for local residents, and tenants of the restaurant and shop promise to employ only local residents when they enter lease

agreements with the Royal Society for Conservation of Nature (hereinafter called RSCN), which is in charge of operating the facilities.

#### (b) Background and Contributing Factors

The number of visitors to The Dead Sea Panoramic Complex has been affected by the stagnation and decrease in the overall number of tourists visiting Jordan. However, the Complex has high potential to attract tourists – it has already become as a popular spot for tourists visiting the Dead Sea, and the restaurant tenant is Evason, the global luxury resort chain. In addition, a major Jordanian cosmetics company is renting space inside the facility. If the external environment surrounding tourism in Jordan improves, the number of visitors to the Complex has ample potential to return to its previous heights.

#### (5) Dead Sea Parkway Construction

As this sub-project is a road construction project, it is not possible to measure and confirm its direct effects on the number of tourists, tourism revenue and employment opportunities.<sup>10</sup> However, a field study confirmed that this parkway construction established tourist routes to the Dead Sea hotel area and The Dead Sea Panoramic Complex as well as the additional tourist attractions of Madaba and Hamamat Ma'in. Thus, this sub-project has helped attract tourists to both the target area and neighboring areas.

#### (6) Karak Tourism Development

##### (a) Achievement of Quantitative Effects

Tables 8 and 9 show the number of tourists and tourism revenue. As explained previously, no existing data covers the number of foreign tourists and tourism revenue for entire area of this sub-project. Thus, the External Evaluator verified the achievement of quantitative effects based on trends in the number of visitors and admission fees generated by Karak Castle, a major tourist attraction in the sub-project area visited by an estimated 90 percent of tourists who visit the target area (based on interviews with the Jordan Society of Tourist and Travel Agent).

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<sup>10</sup> Traffic surveys on target roads have yet to be implemented.

Table 8: Number of Visitors to Karak Castle (Unit: persons)

Year	Jordanians	Foreigners	Total
2005	10,000	100,550	110,550
2006	12,150	75,450	87,600
2007	14,200	107,400	121,600
2008	11,500	153,100	164,600
2009	18,500	148,100	166,600
2010	13,950	171,900	185,850
2011	14,950	82,550	97,500
2012	8,580	53,200	61,780
2013	5,350	21,550	26,900

Source: MOTA

Note 1: Figures as of November 2013

Note 2: The Karak Castle Museum was closed from 2001 to 2004 due to construction under the Project.

Note 3: The verifiable number of visitors to the museum before it closed: 37,442 in 1994, 57,470 in 1995 and 72,600 in 1996 (note that these are the numbers of foreign tourists).

Table 9: Tourism Revenue (Unit: JD)

Year	Admission fees	Rental space
2005	101,532	-
2006	77,272	-
2007	109,530	-
2008	154,825	-
2009	150,875	-
2010	173,993	-
2011	84,793	3,500
2012	57,695	7,000
2013	22,352	7,000

Source: MOTA and the Karak Development Committee

Note 1: Figures as of November 2013

Note 2: Rental space refers to the restaurant at the Upper Observation Point.

Under this sub-project, the Karak Castle Museum was renovated, paths on castle grounds were improved, and two observation points (upper and lower) overlooking Karak were built. It is worth noting that the work on Karak Castle was improvement and renovation while the work on the observation points was new construction.

The Upper Observation Point had long been used as a lookout after its completion in 2004, but the facility has been used to its fullest since a restaurant started to operate in 2011. The scenery and atmosphere of that restaurant has made the Upper Observation Point a popular spot in the area. The facilities have undergone improvement over the last two to three years, and the Karak Development Committee (hereinafter called KDC) that manages the lookout has indicated that it added lighting.

The Lower Observation Point has essentially been left alone for quite some time, and the facility has suffered damage due to vandalism by drunken people and illegal occupancy by homeless people and others. The 2013 budget of the Ministry of Tourism and Antiquities (hereinafter called MOTA) included the renovation of Lower Observation Point facilities, and the placement of security guards by the Karak Castle Plaza Committee (hereinafter called KCPC) that inherited responsibility for facility maintenance from Karak City. As of the end of March 2014, the facility has been completely renovated and its interior is expected to be used for business purposes (cafes, etc.). Bidding is scheduled to occur in the first half of 2014.

The implementation of the Project has probably created employment opportunities at hotels, souvenir shops and restaurants around Karak Castle. Interviews and the External Evaluator's actual count show that there are two hotels, three souvenir shops and seven restaurants in the area immediately surrounding the castle. The Project has likely contributed to increasing or maintaining employment opportunities in that area.

(b) Background and Contributing Factors

Compared to other sub-projects, the number of tourists for this sub-project is expected to drop even more significantly. Many project personnel have expressed that this is because 1) it is difficult for large tour buses to travel the narrow access roads to Karak Castle and because 2) there is insufficient communication between Karak City and MOTA on one side and the companies that lead tours on the other (not enough sales promotion has been done).

(7) Historical Old Salt Development

(a) Achievement of Quantitative Effects

The table below shows that the number of tourists and tourism revenue generated by the Salt Museum is not very large and not growing. Although the museum welcomed visitors since 2009 actually, the number of visitors has remained small over the past five years.<sup>11</sup>

Table 10: Number of Museum Visitors (Unit: persons)

Year	Jordanians	Foreigners	Total
2009	N/A	N/A	4,224
2010	N/A	N/A	4,935
2011	N/A	N/A	3,948
2012	N/A	N/A	3,277
2013	N/A	N/A	4,355

Source: MOTA (Balqa Office)

There is currently no admission fee at this target facility, thus there are no figures to be interpreted as revenue. There is a cafe inside the museum, but it is being leased to an NGO and thus the museum is not collecting any rent. Admission to the museum is free in order to entice local residents and both domestic and foreign tourists to visit the museum; MOTA wants people to know the history of Salt. MOTA has indicated its intent to begin charging for admission in the future with 2015 as the target.

As for increasing employment opportunities, one store and two cafes have opened in the area to coincide with the opening of the museum. There are also plans to open a craft shop on the first floor of the museum around August 2014. The museum itself employs 13 people.

(b) Background and Contributing Factors

Salt is not yet well known as a tourist attraction, and it is not included on the tour routes taken by companies that lead tours. This is probably the main reason so few tourists visit Salt.

Currently a technical cooperation project to promote the development of tourism in Salt is being

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<sup>11</sup> The project concerning the Salt Museum was officially completed in 2011.

implemented by the Japan International Cooperation Agency (hereinafter called “JICA”). Various events are being held to spread the Eco-Museum Concept, in which entire communities within Salt are treated as museums.<sup>12</sup> Certainly now is the time to begin full-scale promotion to the outside world.

#### (8) Observations on the Materialization of Quantitative Effects

The materialization of quantitative effects for each sub-project was explained previously. This section presents observations on that materialization in terms of 1) changes in the number of tourists after completion, and 2) the relationship between target figures at the time of the Project appraisal and actual figures.

##### (a) Changes in the Number of Tourists since Facility Completions

The table below shows changes in the number of tourists visiting the facilities of each sub-project from the time each was completed until the ex-post evaluation (using the most recent, verifiable data).

Table 11: Number of Visitors for Each Sub-Project

Sub-project	Trend analysis
Amman Downtown Tourist Zone	Decreasing • Compared to 2008, the completion year, the number of tourists had decreased about 30% by 2013.
Raghadan Bus Terminal Construction	Not yet operating
Construction of the Jordan National Museum	Partial operation only • Data only exists for one year, 2013.
The Dead Sea Panoramic Complex Construction	Gradual decrease/stagnating • As this is new construction, an increase in the years following completion is expected. • The number of visitors has generally increased since the opening in November 2006, but it has gradually decreased since the peak in 2010. • The number of tourists is decreasing less compared to other sub-projects.
Dead Sea Parkway Construction	—
Karak Tourism Development	Decreasing • The number of tourists has decreased significantly in the last three years.
Historical Old Salt Development	Stagnating • The number of tourists is nearly the same each year. • Despite the fact that the Salt Museum is fully operational, the absolute value of visitors is extremely small (about 17 visitors per day in 2013).

As of March 2014, two of the seven sub-projects were not fully operational. The number of users of the Dead Sea Parkway sub-project cannot be quantified. The number of tourists visiting the

<sup>12</sup> One example is the Salt Festival held in October 2013 – seven old folk houses were opened to the public, coffee was served to tourists, and residents actively involved themselves in the festival. Nearly 4,000 people visited Salt for the festival.

Under the Project, construction of a trail (a walking route winding past the town’s traditional buildings and other sites) for enjoying the atmosphere of the former capital in Salt and other attractions designed to reinvigorate tourism in Salt have begun.

remaining four sub-projects in recent years has decreased or stagnated compared to when the sub-projects were completed.

Below are some of the main reasons for this decrease and stagnation.

(i) Decrease of tourist visits throughout the region due to the Arab Spring

As explained previously, each sub-project has suffered the effects of the decrease and stagnation in the number of tourists influenced by the political upheaval in the region due to the Arab Spring that started at the end of 2010.

(ii) Lack of promotion as a tourist attraction

MOTA and the Jordan Tourism Board are in charge of promoting tourist attractions to the outside world, but the board's homepage does not include The Dead Sea Panoramic Complex, Salt City or the Jordan National Museum. This is a prime example of why it is difficult to say that information about sub-project target facilities has been actively disseminated to the outside world.<sup>13</sup>

The city governments of Karak and Salt have undertaken limited spontaneous promotional activities telling the Jordan Society of Tourist and Travel Agent and the companies that lead tours to sell their own cities as tourist attractions. Furthermore, both cities think MOTA and the Jordan Society of Tourist and Travel Agent should play a central role in promoting tourism, but at the same time, the central government expects cities to make independent efforts to promote tourism, vice versa. This situation is one reason that promotion activities have not been implemented effectively, and both MOTA and personnel from the governments of each city upheld this view in interviews during the ex-post evaluation. This lack of leadership and common understanding between relevant personnel in tourism promotion is likely one reason for the current decrease and stagnation in the number of tourists.<sup>14</sup>

(iii) Lack of roads, parking areas and other supporting tourism infrastructure

Parking space for large buses at tourist attractions, roads wide enough to allow large buses to pass through smoothly and other infrastructure is a critical prerequisite for ensuring that tours go smoothly. The cities of Karak and Salt do not meet these infrastructure prerequisites, and interviews with project personnel in both cities and companies that lead tours revealed that this is one reason why companies that lead tours are hesitant to visit these cities.

Specifically, the road to Karak Castle is narrow and difficult for large buses to drive on, thus tour companies have tended to avoid going there, particularly in recent years.<sup>15</sup>

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<sup>13</sup> Information about Salt City is now up on the Jordan Tourism Board's homepage. However, it does not touch upon the Salt Historical Museum.

<sup>14</sup> Salt City, MOTA and Salt Development Corporation, an NGO, formed the Salt Eco-Museum Steering Committee in February 2014 in response to these reflections. They hope relevant personnel will now work together to promote tourism.

<sup>15</sup> An interview with KCPC revealed that a proposal to have tourists transfer from large buses to minibuses at the entrance to the town to combat these traffic problems is currently being considered.

## (b) Comparison with Project Targets

At the time of the Project appraisal, a target number of foreign tourists was set for each tourist attraction under each sub-project, but recently none of these targets are being met.<sup>16</sup> In 2012, the number of tourists visiting sites in the Amman Downtown Tourist Zone sub-project was around 35% of the target; in the same year it was 8% for The Dead Sea Panoramic Complex, 20% for the Karak sub-project, and 10% for the Salt sub-project.<sup>17</sup>

The three factors explained previously are a major reason that targets are currently not being met, but in addition there are probably problems with the targets themselves. The following is an explanation of these issues, which are also included in the Lessons Learned section of the ex-post evaluation study.

- The approach for calculating target numbers of tourists during the Project was to use the Model for Projecting the Number of Tourists. This model is one of the leading projection models used to project numbers of tourists and is considered relevant to be used for the Project.<sup>18</sup>
- The model uses the appeal of tourist attractions and distance to tourist attractions (the distance from the King's Highway running through Jordan was used for this Project) as variables. Thus, the manner in which the appeal of tourist attractions is quantified is of particular importance. For the Project, the appeal of each sub-project was assigned a point value on a scale, with 10 points given to the ruins of Petra, Jordan's leading tourist attraction. The following is each sub-project with an appeal score in parentheses: Amman Downtown Tourist Zone (8), Jordan National Museum (9), The Dead Sea Panoramic Complex (8), Dead Sea Parkway (7), Karak (7) and Salt (7).
- The SAPROF study group calculated appeal scores based on questionnaire surveys, etc. that very likely contributed to the inflation of the appeal scores. Thus, the initial projections of the number of tourists visiting each sub-project are probably too high.
- This is probably one reason for the significant disparity between target values and actual values.

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<sup>16</sup> Targets were set in the Special Assistance for Project Formation (SAPROF) for the Tourism Sector Development Project (1997).

<sup>17</sup> Based on information in an interview with the Jordan Society of Tourist and Travel Agency, the 70 percent of tourists that visited target sites in the Amman Downtown Tourist Zone Improvement sub-project was calculated assuming they visited the Roman Theatre. Similarly, it was assumed that the 90 percent of tourists that visited target sites in the Karak sub-project visited Karak Castle. The MOTA Balaq Office estimated 30,000 to 40,000 tourists visit Salt to walk around, thus comparisons were made to 40,000 people. The percentages are comparisons to 2012 targets. Note that the percentages include both Jordanian and foreign tourists.

<sup>18</sup> A wide variety of research on models for projecting the number of tourists (including the Commissioner's Award-winning "Construction of a Model for Projecting the Number of Nights Spent in Japan by Foreign Tourists in Light of the Effects of Regional Alliances" by Tetsuo Shimizu of the University of Tokyo Institute of Industrial Science in the Japan Tourism Agency's "Study on Analytical Methods in Tourism Using Tourism Statistics," and "System for Projecting Tourist Traffic Demand Given the Appeal of Tourist Attractions and Touring Behavior" by Shoshi Mizokami in a 2000 collection of papers by the Japan Society of Civil Engineers) has been done and has been used in tourist projections in each municipality.

The number of tourists visiting each sub-project from the Project is decreasing or stagnating in terms of year-to-year changes since each sub-projects was completed and also in terms of comparisons to target values. Thus, the expected effects have not materialized. In addition, the fact that the Jordan National Museum and Raghadan Bus Terminal, which account for nearly 20 percent of expenditures required for the Project, are not yet fully operational illustrates how extremely limited the effects produced by implementing the Project are.<sup>19</sup> In light of the above, the effectiveness of the Project is low.

#### Reference:

As explained previously, information such as revenue from admission fees is available for each sub-project, but it is not possible to determine tourism revenue including extended economic effects produced by the implementation of the Project because there is no data on tourism revenue itself (data on tourism revenue for each area is not publicized). Thus, it is not possible to evaluate the extent to which foreign currency revenue increased or decreased as a result of the Project. However, the table below can serve as a reference for how foreign exchange reserves and tourism revenue across all of Jordan have changed.

Table 12: Jordan Foreign Exchange Reserves and Tourism Revenue (Unit: million USD)

Year	2008	2009	2010	2011	2012	2013
Foreign exchange reserves <sup>1</sup>	8,558	11,459	12,831	11,242	7,852	11,794
Tourism revenue <sup>2</sup>	N/A	919	1,805	1,510	1,742	N/A

Source1:IMF, 2:Central Bank of Jordan

### 3.2.2 Qualitative Effects

Events analogous to qualitative effects are analyzed in Section 3.3 Impact.

## 3.3 Impact

### 3.3.1 Intended Impacts

#### (1) Education and Enlightenment Activities

Target facilities from the Project produced impacts in school education and enlightenment activities targeted at local residents.

Table 13 shows that the four museums have been hosts of school trips, and the Salt Museum and The Dead Sea Panoramic Complex Museum have been particularly proactive about welcoming school trips since their openings. Most school trips aimed to promote understanding of the area's history and cultural legacy, but at The Dead Sea Panoramic Complex, much time was also dedicated

<sup>19</sup> Actual expenditures for each sub-project on the Jordan side are unclear, thus the percentage of Project cost from Project plans was used.



to explaining to students the importance of protecting the nature and wildlife of the Dead Sea.

Table 13 shows the number of trips and seminars the museums have hosted.

Table 13: School Trips and Seminars for Each Museum

Jordan National Museum <sup>1</sup>			The Dead Sea Panoramic Complex Museum <sup>2</sup>			Karak Castle Museum <sup>3</sup>			Salt Museum <sup>4</sup>		
Year	School Trips	Seminars	Year	School Trips	Seminars	Year	School Trips	Seminars	Year	School Trips	Seminars
2011	0	47	2007	4	2	2012	750	0	2010	12	3
2012	0	8	2008	6	2	2013	0	0	2011	11	3
2013	38	32	2009	16	3				2012	1	6
			2010	23	8				2013	18	8
			2011	27	11						
			2012	25	8						
			2013	23	4						

Source: 1 Jordan National Museum, 2 RSCN, 3 MOTA (Karak), 4 MOTA (Balqa)

Note 1: 1,559 students visited the Jordan National Museum. Seminars include domestic business seminars given by Jordan National Museum personnel.

Note 2: Each school trip to The Dead Sea Panoramic Complex Museum included 50–100 people.

Note 3: Each school trip to the Karak Castle Museum included 50–100 people.

Note 4: Each school trip included 50–100 people.

A survey was conducted in Salt after the Salt Festival was held in October 2013, and 80 percent of respondents felt more interested in the area's history after the event and indicated that they wanted to participate in events related to the Eco-Museum Concept.

## (2) Tourism Industry Promotion

The Project was expected to have the impact of contributing to the promotion of the tourism industry at target sites. Specifically, increasing and diversifying the attractiveness of tourism resources was expected to produce effects such as economic effects due to the increase in the length of tourists' stays in Jordan and an increase in lodging facilities as an extended effect of Project implementation.<sup>20</sup>

Table 14 shows that the length of tourists' stays in Jordan has tended to decrease in recent years. There are likely many reasons for this decrease, but Project personnel indicated that a significant factor is the development of the transportation network that made it more efficient for tourists to travel around to visit ruins and tourist attractions.

<sup>20</sup> Increasing the attractiveness of tourism resources, diversifying domestic tour routes and other efforts are emerged as an increase in the length of tourists' stays. Thus, the change in the length of tourists' stays was assigned as an impact for this ex-post evaluation.

Table 14: Length of Tourists' Stays

(Unit: Days)

Project timing/year	Before Project implementation	After Project implementation	
	1994	2008	2012
Amman	2.8	2.6	2.2
National average	4.5	3.9	2.8

Source: MOTA

Table 15 shows that the number of lodging facilities throughout Jordan is increasing slightly. However, since the number of lodging facilities for each area is unclear, it is not possible to determine changes occurring in target areas.

Table 15: Number of Lodging Facilities in Jordan

Year	2010	2011	2012
Hotels	209	209	212
Guest rooms	17,114	17,107	17,449
Beds	31,990	31,987	32,427

Source: Jordan Department of Statistics

Note: These figures represent hotels in Jordan ranked as Classified Hotels

### 3.3.2 Other Impacts

#### (1) Impacts on the Natural Environment

One positive impact is the intensification of nature conservation activities associated with the operation of The Dead Sea Panoramic Complex. RSCN manages The Dead Sea Panoramic Complex, and it has named the entire area including the Complex a conservation zone and employs one ranger to prevent illegal hunting and destruction of the environment. Exposing an average of around 50 people who hunt illegally each year helps promote the protection of the unique nature and wildlife of the Dead Sea.

No negative impacts have been observed since the time the facilities were built.<sup>21</sup>

#### (2) Land Acquisition and Resettlement

No particular land acquisition or resettlement problems arose.

The stores that vacated for the construction of the museum in Salt have returned to the first floor of the completed museum building (to be precise, the first floor of the building that houses the museum) based on an agreement reached before construction began.

<sup>21</sup> The Project was classified Category B according to OECF Guidelines for Environmental Considerations (1995). Environmental analysis performed as part of SAPROF during the planning stage of the Project did not turn up any impacts to the environment that necessitate an Environmental Impact Assessment (EIA). Although the Jordan side established a law obligating the implementation of EIA in 1995, EIA was not implemented for the sub-projects of the Project because there were no detailed regulations for construction.

### (3) Other Positive/Negative Impacts

None in particular.

In the three years that have passed since the Project was completed, two of the seven sub-projects are still not fully operational, and target numbers of tourists have not been achieved, even when accounting for the unforeseen problem of political upheaval in the area. Although the positive impacts of increased educational opportunities through museums and intensified nature conservation activities around the Dead Sea have been observed, expected impacts on the length of tourists' stays cannot be confirmed.

In light of the above, this project has achieved its objectives at a limited level, therefore its effectiveness and impact are low.

### 3.4 Efficiency (Rating: ②)

#### 3.4.1 Project Outputs

Table 16 is a comparison between the planned and actual outputs of the Project. There were slight changes to some items since the time of the Project appraisal, but they are considered relevant because they were made to help secure the safety or increase the attractiveness of a facility.

Table 16: Planned and Actual Outputs

Amman Downtown Tourist Zone			Raghadan Bus Terminal Construction		
Facilities	Facility size and details	Deviation from plans	Facilities	Facility size and details	Deviation from plans
Improve tourist streets	Length: 1,700 m Width: 3-4 m	None	Site area	34,448 m <sup>2</sup>	None
Improve tourist trails	Length: 2,500 m Width: 2-3 m	None	Terminal building	8,230 m <sup>2</sup>	None
Downtown Visitor Center	46.5 m <sup>2</sup>	None	Tower	2,297 m <sup>2</sup>	None
Construction of the Jordan National Museum			The Dead Sea Panoramic Complex Construction		
Facilities	Facility size and details	Deviation from plans	Facilities	Facility size and details	Deviation from plans
Site area	14,200 m <sup>2</sup>	14,334 m <sup>2</sup>	Museum area	2,506 m <sup>2</sup>	None
Museum	9,230 m <sup>2</sup>	9,930 m <sup>2</sup>	Parking area	253 m <sup>2</sup>	None
Visitor services	1,150 m <sup>2</sup>	None	Central garden	675 m <sup>2</sup>	None
Exhibition gallery	3,200 m <sup>2</sup>	None	Entrance plaza	452 m <sup>2</sup>	None
Collection management	2,320 m <sup>2</sup>	None	Courtyard	106 m <sup>2</sup>	None
Investigative research	570 m <sup>2</sup>	None	Observation terrace	1,249 m <sup>2</sup>	None
			Access roads	7,494 m <sup>2</sup>	None

Administration	260 m <sup>2</sup>	None	Landscaping	47,289 m <sup>2</sup>	None
Auxiliary (machine room, etc.)	1,730 m <sup>2</sup>	None	Border fence and gate	-	Additional 11,750 m
Additional exhibition facility Hands on History (Kids Kingdom)	-	Additional 700 m <sup>2</sup>			
<b>Dead Sea Parkway Construction</b>			<b>Karak Tourism Development</b>		
<b>Facilities</b>	<b>Facility size and details</b>	<b>Deviation from plans</b>	<b>Facilities</b>	<b>Facility size and details</b>	<b>Deviation from plans</b>
Roads	3.7m (two-lane)	None	Karak Castle		
Road length (new construction)	9.4km	None	Museum (includes repairs to existing facilities)	485 m <sup>2</sup>	None
Road length (repair)	2.2km	None	Paths on castle grounds	Length: 1.35 km Width: 1.8-2.4 m	None
Bridges	(1) 90 m (2) 120 m	None	Tourist trails (repair)	8,900 m <sup>2</sup>	None
Intersections	Two	None	Visitor Center	240 m <sup>2</sup>	None
Roadside facilities (observation points)	2,500 m <sup>2</sup> (two points)	None	Upper Observation Point: • Site area • Building	• 3,672 m <sup>2</sup> • 207 m <sup>2</sup>	None
Other	Road signage, guardrails, etc.	None	Lower Observation Point: • Site area • Building	• 2,418 m <sup>2</sup> • 97 m <sup>2</sup>	None
<b>Historical Old Salt Development</b>					
<b>Facilities</b>	<b>Facility size and details</b>	<b>Deviation from plans</b>			
Museum (repair) Includes Visitor Center	1,242 m <sup>2</sup>	None			
Tourist streets and trails (repairs)	7 km (total of 15 tourist trails)	Nine tourist trails added			
Plazas	3,850 m <sup>2</sup> (four plazas)	None			
Observation points	1,200 m <sup>2</sup> (four points)	Construction suspended for one point (Al-Qalaa)			

Source: Materials from JICA Project appraisal

### 3.4.2 Project Inputs

#### 3.4.2.1 Project Cost

Table 17 shows the planned and actual project costs for the Project. Actual Project costs were lower than planned.

Table 17: Planned and Actual Project Costs

	Main cost		Total project cost
	Japan side	Jordan side	
Planned	7,199 million yen	3,006 million yen	10,205 million yen
Actual	7,165 million yen	2,389 million yen	9,554 million yen (93.6% of the planned amount)

Source: Materials from JICA project appraisal and the Ministry of Planning and International Cooperation

#### 3.4.2.2 Project Period

Table 18 shows the difference between the planned and actual Project period. The Project lasted significantly longer than planned.

Table 18: Planned and Actual Project Period

Planned	Actual
December 1999–May 2006 (78 months)	December 1999–July 2011 (140 months) (180% of the planned period)

Source: JICA internal materials

The following are the main reasons why the Project period was extended.

##### (1) Procurement process delays

- The start of bidding for selecting construction companies was delayed. Pre-qualifications were announced publicly, but none of the bidders satisfied the conditions, thus they were announced publicly a second time for many sub-projects.

##### (2) Construction company changes

- The construction company tasked with the Amman Downtown Tourist Zone sub-project was in a worsening financial situation, thus it became necessary to replace them, and replacing them required time (Amman City Tourism Zone).

##### (3) Unexpected additions to construction

- More construction work than expected was required due to the discovery of buried objects that could not be detected during the design phase (Raghadan Bus Terminal, The Dead Sea Panoramic Complex).
- Retaining walls needed to be added to support weak soil in sloped areas (Dead Sea Parkway).

- An additional fence was required to protect the nature conservation zone (The Dead Sea Panoramic Complex).
- Employers requested design changes and additions (additional construction work for the Hands on History facility at the Jordan National Museum, changes to the tiles used at The Dead Sea Panoramic Complex,<sup>22</sup> addition of target tourist trails in the Historical Old Salt Development)

(4) Displacing existing facilities and tenants and acquiring land

- Time was required to coordinate space to be used at the recipient terminal in the course of transferring the functions of existing bus terminals (Raghadan Bus Terminal).
- Time was required for existing tenants to move out from the museum building (Historical Old Salt Development)

### 3.4.3 Economic Internal Rate of Return (reference values)

At the time of the Project review, the Economic Internal Rate of Return (EIRR) was estimated to be 24.47%. At the time of the ex-post evaluation, it was unclear what Project costs the Jordan side incurred each year and for each Project unit. Thus it was difficult to calculate the internal rate of return.

Although the Project cost was within the plan, the Project period was exceeded, therefore efficiency of the Project is fair.

## 3.5 Sustainability (Rating: ③)

### 3.5.1 Institutional Aspects of Operation and Maintenance

#### (1) Amman Downtown Tourist Zone Improvement

Amman City is responsible for operating and maintaining tourist streets and trails. The Construction Division of the Amman City Operation and Maintenance Bureau has been assigned that task. The Public Works Section of the division is in charge of sub-project target facilities. There are a total of 50 employees, including 10 civil engineers, in the section, thus there is a sufficient system in place for maintaining target facilities. MOTA is responsible for operating and maintaining the Visitor Center. Three MOTA employees and one employee from the Tourist Police Department alternate with each other to operate the Visitor Center, thus there is a sufficient system in place for operating the Visitor Center. MOTA performs the operation and maintenance, including securing its budget, of the Visitor Center as one of the visitor centers at 13 centers in Jordan.

#### (2) Raghadan Bus Terminal

Bus terminal operation and maintenance have been entrusted to Amman City, and the city

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<sup>22</sup> The tile to be used on the floor was changed from stone to ceramic tile. Ceramic is considered appropriate because it is easier to maintain and keep clean in places with heavy foot traffic.

established the Amman Terminal Management Unit to be the organization to oversee the work. The unit currently comprises 120 employees, and they are involved in operating the three bus terminals currently operating in Amman and preparing to operate the Raghadan Bus Terminal. Of the group, 28 employees have been assigned the Raghadan Bus Terminal, and a chief administrator, supervisor and operation manager have been appointed as directors. The unit includes a Maintenance Division with 10 employees who handle electrical, mechanical and construction maintenance at the four terminal facilities within city limits. Raghadan Bus Terminal is not yet operating, but an operation and maintenance system has been prepared.

### (3) Jordan National Museum

Jordan National Museum was established as an independent corporation, and the Financial Management and Administrative Division, Technical Division and Business Development and Communication Division operate under the supervision of the museum director. In the first three months of 2014, the museum newly employed three accountants, two IT experts, one assistant curator and one general affairs worker. The museum is strengthening its workforce for the grand opening (there are 48 employees as of March 2014). The museum also entered an agreement to outsource cleaning, machine maintenance and other general maintenance management work starting in March 2014.

In light of the above, the museum has generally established an operation and maintenance system.

### (4) The Dead Sea Panoramic Complex Construction

MOTA owns the Complex and the museum within the Complex as initially planned, but has entrusted operation to RSCN with its abundant experience with nature conservation activities. RSCN has established a management organization for the Complex that includes a director, a three-person maintenance section, a three-person curator section, cleaning and security. RSCN headquarters in Amman is responsible for accounting and human resources work. Thus, there is a sufficient system for operation and maintenance.

### (5) Dead Sea Parkway Construction

The Maintenance Division within the Ministry of Public Works and Housing is in charge of maintaining this parkway. The division comprises three sections: the Road Maintenance Information Section, the Tender and Supervision Section, and the Roadside Greenery Section. The Tender and Supervision Section uses a system by which private contractors are selected to perform actual maintenance work on the parkway. Thus, a stable system for implementing maintenance work has been established.

### (6) Karak Tourism Development

The following organizations are currently operating facilities in Karak:

- Karak Castle Museum: MOTA (15 employees)
- Visitor Center: MOTA
- Tourist streets: Karak City
- Upper Observation Point: KDC
- Lower Observation Point: KCPC

The Karak Castle Museum is operated by a director, two curators and personnel for accounting, reception, ticket sales, maintenance, cleaning and security. This organizational setup is sufficient for operating this museum in terms of its facility's scale. Two MOTA employees are in charge of the Visitor Center, which is enough to fulfill the facility's simple functions (distributing pamphlets, serving as a rest area, etc.). The Maintenance Section and Business Section of the Public Works Division of the Karak City government are in charge of maintaining tourist roads. The Maintenance Section is in charge of daily maintenance and minor repairs, and the Business Section is tasked with implementing major repairs. The Division comprises 30 employees and is properly staffed for this maintenance works. KDC has operated the Upper Observation Point since 2011 in accordance with a management outsourcing agreement with Karak City. KDC is an NGO that comprises nine employees, and it has permanently stationed a manager at this facility. This facility does not require special daily maintenance, and out-sourced contractors make any repairs when the facility requires. Given the current state of maintenance, this system is sufficiently functioning. Operation of the Lower Observation Point is outsourced in the same way as the Upper Observation Point. KCPC has been in charge of operation and maintenance since 2012. KCPC is a semi-private organization that mainly maintains historical buildings adjacent to Karak Castle and assists in the sales of handicrafts made by local residents. It comprises seven employees and has assigned one security guard to the observation point. This system is sufficient for maintaining the target facility.

#### (7) Historical Old Salt Development

The following organizations are currently operating facilities in Salt:

- Salt Museum: MOTA (13 employees)
- Visitor Center: MOTA
- Tourist streets, plazas and observation points: Salt City

The Balqa Office of MOTA, which is in charge of Salt City area, operates and maintains the Salt Museum. MOTA has assigned a director, curators and assistant curators (total of two employees) and personnel in charge of information, exhibit management and maintenance, reception, cleaning and security. The Visitor Center is located within the museum and is operated and maintained by the aforementioned employees. The number of employees is generally sufficient given the size of the museum and Visitor Center. It is worth noting that the JICA technical cooperation project currently being implemented is firmly requesting that MOTA increase the number of museum employees or



hire even more qualified employees. If either of these things happens, the organizational system will become even stronger. The Engineering and Services Division within the Salt City government is in charge of maintaining tourist streets, plazas and observation points. The division comprises 30 employees, thus the system is sufficient for maintaining the facilities.

### 3.5.2 Technical Aspects of Operation and Maintenance

#### (1) Amman Downtown Tourist Zone

##### (a) Amman City:

As the target facilities are tourist streets and trails, no particularly advanced maintenance techniques are required. Maintenance of these facilities is some of the most frequent work undertaken by the Construction Division of the Amman City Operation and Maintenance Bureau, and there are no significant challenges with its sustainability in technical terms.

##### (b) MOTA :

MOTA operates 13 visitor centers throughout Jordan, thus no significant challenges in terms of operation and maintenance have been observed.

#### (2) Raghadan Bus Terminal Construction

The technicians in the Maintenance Division of the Amman Terminal Management Unit handle terminal facility maintenance, thus there are no particular technical concerns. Although the other three bus terminals in city limits are not as large as Raghadan Bus Terminal, technicians have accumulated experiences operating them, and relevant personnel continue to accumulate knowledge about bus terminal operation and management through JICA training in Japan and EU Project training. Thus, it can be judged that a certain level of capacity to operate and maintain Raghadan Bus Terminal exists.

#### (3) Construction of the Jordan National Museum

A Maintenance Division exists within the organization of the Jordan National Museum, and the division is staffed with employees who gained a wealth of experience elsewhere. In addition, the museum has already entered an agreement to outsource inspections and maintenance of air conditioning, boilers and other museum facilities, as explained previously. The museum employs four curators, and each of them has experience working at other museums and has published articles outside of Jordan. Thus, the museum basically has sufficient technical skills to run the organizational aspects of operations. The museum has drafted plans to employ multiple people in the first half of 2014 in order to intensify its PR work and tourist marketing to the outside world. The museum has generally maintained a level of sustainability in terms of technical aspects.

#### (4) The Dead Sea Panoramic Complex Construction

Maintenance managers have been assigned to the Complex and its museum, thus there are no particular technical problems. In addition, a curator and an education officer to assist the curator have been assigned to the museum. Also, RSCN has a wealth of experience operating similar facilities, thus sufficient sustainability has been secured in terms of operations.

#### (5) Dead Sea Parkway Construction

The Maintenance Division within the Ministry of Public Works and Housing performs regular maintenance according to the ministry's maintenance manual. Thus, there are no major technical concerns.

During the ex-post evaluation field survey, the External Evaluator noted gabions<sup>23</sup> in locations at high risk of falling rocks and landslides; the parkway is being properly maintained to prevent falling rocks. In practical terms as well, appropriate techniques are being learned and used.

#### (6) Karak Tourism Development

Maintenance personnel in charge of general, daily management have assigned to operate and maintain the Karak Castle Museum. The museum also has a full-time curator who manages exhibits and other museum functions. Compared to other museums, managing this museum does not require special technical skills, thus it is sustainable in technical terms.

The Visitor Center exists primarily to provide space for tourists, thus there are no technical concerns with its operation and maintenance.

The work of maintaining tourist streets requires more frequent attention than most work done by the Karak City Public Works Division, but there are no major challenges with the technical sustainability of the work.

Both the Upper and Lower Observation Points feature common buildings, thus there are no major technical issues in maintaining those facilities. Tenants generally operate restaurants and cafes, thus there are no difficult technical issues. Rather the main issue is constantly looking after tenants, and the fact that a manager has been assigned to the Upper Observation Point shows that this issue has been addressed.

#### (7) Historical Old Salt Development

There are no major technical problems with the operation and maintenance of the Salt Museum or Visitor Center. The minimum number of workers with the required technical skills has been hired, and they are currently capable of operating the facilities. In addition, technical assistance is currently being implemented in areas including museum operation under a JICA technical cooperation project, thus an increase in the number of employees with more advanced technical skills for reinvigorating

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<sup>23</sup> Weaved, cylindrical baskets made of steel wire, etc. and filled with stones.

the museum is expected.<sup>24</sup>

On the other hand, since these are historical buildings, some parts of the maintenance of these facilities require greater care and technical skill than that for normal buildings. Full-time maintenance personnel are not able to perform all repairs, thus some maintenance work is necessary to be outsourced.

Tourist streets, plazas and observation points are general facility infrastructure, thus there are no major technical challenges with the maintenance of those facilities.

### 3.5.3 Financial Aspects of Operation and Maintenance

#### (1) Amman Downtown Tourist Zone Improvement

##### (a) Amman City:

Table 19 shows the actual expenditures made in the maintenance of tourist streets and trails by the Construction Division of the Amman City Operation and Maintenance Bureau as a whole. The table shows that a budget is consistently secured each year. There are probably no significant financial problems with maintenance of target facilities.<sup>25</sup>

Table 19: Spending by the Construction Division of the Amman City Operation and Maintenance Bureau (Unit: JD)

Year	Expenditure
2005	415,898
2006	320,776
2007	896,486
2008	626,021
2009	691,071
2010	700,000
2011	519,575
2012	540,284
2013	568,138

Source: Materials from the Construction Division of the Amman City Operation and Maintenance Bureau

Note: Figures as of November 2013

<sup>24</sup> The following activities are being implemented under the technical cooperation project currently underway:

- Promotion of local resident participation. Specifically, holding the Salt Festival.
- Educating residents and students about preserving history and culture.
- Effectively explaining and displaying museum exhibit items
- Creating a database of historical old folk houses within city limits
- Implementing tourism marketing (devising tourism promotion plans for the future)

<sup>25</sup> The Construction Division for 2013 was 1.2 million JD. In addition, 1.0 million JD has been secured for the 2014 budget (according to materials from the Construction Division of the Amman City Operation and Maintenance Bureau)

(b) MOTA:

Visitor center facility maintenance is covered by the maintenance budget for all 13 visitor centers in Jordan. Given that MOTA has never had to shut down or suspend activities at a center due to the budget, there is a relatively low chance of financial problems having a significant effect on operating and maintaining this facility. Table 20 shows that the budget is decreasing from year to year, but this has not caused any interruption in required maintenance as it is due to the three-year period from 2009 to 2011 being planned as a period for relatively large-scale repairs, and to the gradual decrease in required repair work since then.

Table 20: Visitor Center Maintenance Budget and Actual Expenditures (Unit: JD)

Year	Budget (JD)	Expenditures
2009	300,000	198,737
2010	300,000	299,620
2011	300,000	126,618
2012	200,000	49,495
2013	100,000	66,515

Source: MOTA

(2) Raghadan Bus Terminal Construction

Table 21 shows actual expenditures for 2012. These are the total expenditures of the Amman Terminal Management Unit, not only those for the Raghadan Bus Terminal. The unit has shown the intention to allocate the required budget for Raghadan Bus Terminal in the course of launching it.

Table 21: Amman City Bus Terminal Expenditures (Unit: JD)

Year	Personnel	Operation	Maintenance	Total
2012	653,400	12,000	6,240	671,640

Source: Amman City

(3) Construction of the Jordan National Museum

Table 22 shows expenditures for the operation and maintenance of the Jordan National Museum. The museum's budget is allocated directly from the Ministry of Finance. The ministry increased the museum's budget to coincide with its soft opening in 2013, and approved a further increase to 1 million JD for 2014. Given that the museum estimated a required budget of 980,000 JD for the upcoming grand opening, the budget required to continue to operate the museum has been secured.

Table 22: Jordan National Museum Expenditures

(Unit: JD)

Year	Budget	Expenditures				
		Personnel	Operation	Maintenance	Insurance, tax, other	Total
2008	400,000	320,000	50,000	0	20,000	390,000
2009	600,000	402,000	68,000	0	40,000	510,000
2010	590,000	382,000	147,000	0	70,000	599,000
2011	999,000	395,000	205,000	0	65,000	665,000
2012	569,500	352,500	53,600	4,500	14,400	425,000
2013	820,000	428,700	166,300	10,000	10,000	615,000
2014	1,000,000	-	-	-	-	-

Source: Jordan National Museum

Note: As the museum was under construction and within the defect liability period until 2011, no repairs were necessary and thus there was no budget for maintenance.

#### (4) The Dead Sea Panoramic Complex Construction

Tables 23 and 24 show income and expenditures for the operation and maintenance of the Complex and museum. The facility began to turn into the black from admission fees as well as rent income from restaurants and shops in 2009, and is profitable as a business.

Table 23: The Dead Sea Panoramic Complex Income

(Unit: JD)

Year	Admission fees	Restaurant	Rental space	Total
2006	1,122	5,000	0	6,122
2007	12,369	29,785	0	42,154
2008	33,550	34,305	0	67,855
2009	60,351	55,147	0	115,498
2010	70,883	64,605	1,583	137,071
2011	53,343	60,981	6,190	120,514
2012	59,976	58,802	6,166	124,944
2013	59,000	60,000	9,000	128,000

Source: RSCN

Note: Figures as of November 2013

Table 24: The Dead Sea Panoramic Complex Expenditures (Unit: JD)

Year	Personnel	Operation	Maintenance	Total
2006	26,121	25,374	11,627	63,122
2007	81,233	22,041	20,668	123,942
2008	90,010	35,051	27,089	152,150
2009	63,167	31,629	19,716	114,512
2010	60,723	51,898	19,837	132,458
2011	65,736	30,615	19,353	115,704
2012	61,256	34,549	19,511	115,316
2013	50,000	30,000	20,000	100,000

Source: RSCN

Note: Figures as of November 2013

#### (5) Dead Sea Parkway Construction

Table 25 shows the budget allotted to the Maintenance Division within the Ministry of Public Works and Housing. Private contractors selected through tenders for each defined zone perform road maintenance, and the parkway is a part of the areas assigned to private contractors (expenditures for the parkway proportional to its length are about 20,000 JD). As all of the parkway is within these defined zones, a maintenance budget has been secured.

Table 25: Budget of Housing Maintenance Division, Ministry of Public Works (Unit: 1,000 JD)

Year	Budget
2009	45,043
2010	13,500
2011	11,208
2012	11,700
2013	33,250

Source: Ministry of Public Works and Housing

#### (6) Karak Tourism Development

The Karak Castle Museum and Visitor Center are operated and maintained by MOTA's budget. Details about their operation expenses are unclear, but according to the MOTA Karak Office, which is the executing agency, they have always maintained the workforce required to operate the facilities. The External Evaluator also visually checked and found no major damage to facilities or neglected areas that required repair. Thus, the facilities are facing no major financial concerns.

Table 26: Karak Castle Museum Expenditures

(Unit: JD)

Year	Personnel	Operation	Maintenance	Total
2011	78,720	N/A	2,600	81,320
2012	83,500	N/A	3,400	86,900
2013	85,000	N/A	3,800	88,800

Source: MOTA Karak Office

Note: Operation expenses are managed by MOTA Headquarters.

Maintenance of tourist streets is covered by the Karak City Public Works Division budget, which allocates 40,000 JD to maintain streets within city limits. This is double the 20,000 JD budgeted for 2011 and serves as a proof that the city places importance on maintaining streets. There are no major financial problems.

Almost the entire KDC budget for operating and maintaining the Upper Observation Point is provided through donations. The amount fluctuates from year to year, but KDC has secured between 50,000 and 300,000 JD each year. An observation point is not a facility that generates huge maintenance expenses each year, thus there generally appears to be a sufficient budget for operation and maintenance. The table below shows actual income and expenditures for KDC overall for the 2013 fiscal year.

Table 27: KDC Overall Income and Expenditures for 2013

(Unit: JD)

Income				Expenses			
Donations	Dividends and interest	Other	Total	Personnel and operation	Observation point	Project expenditures	Total
201,073	8,910	3,175	213,158	43,716	9,176	29,345	82,237

Source: KDC

KCPC's budget for operating and maintaining the Lower Observation Point is around 22,000 JD and is provided by rental income from buildings managed by KCPC. It is a smaller budget than KDC's, but as a semi-private organization, KCPC's personnel expenses are paid by the company that actually employs the employees (MOTA and private companies), thus the budget can generally be used to cover the expenses for most activities and for maintenance. As with the Upper Observation Point, the Lower Observation Point does not generate huge maintenance expenses each year, thus there are no major financial concerns.

#### (7) Historical Old Salt Development

Table 28 shows that the Salt Museum and Visitor Center are operated and maintained by MOTA's budget. Generally, a consistent budget has been secured, thus there are currently no major budgetary restrictions against operating and maintaining the facilities. It is worth noting that the budget

increased in 2013 due to the purchase of office furniture and other supplies in the course of beginning the technical cooperation project that is currently being implemented. Approximately 130,000 JD has been secured for the 2014 budget, thus the level of the entire budget has been raised.

Table 28: Salt Museum Expenditures (Unit: JD)

Year	Budget	Expenditures			
		Personnel	Operation	Maintenance	Total
2009	60,000	40,000	20,000	0	60,000
2010	60,000	40,000	20,000	0	60,000
2011	90,000	62,000	20,000	6,680	88,680
2012	80,000	62,000	20,000	3,000	85,000
2013	162,000	62,000	20,000	43,000	125,000

Source: MOTA Balqa Office

Table 29 shows the actual expenditures allocated to the maintenance of target tourist streets, plazas and observation points by the Salt City Engineering and Services Division, which is in charge of the maintenance. Expenditures increase whenever major repairs are required, thus fluctuation from year to year is observed. However, the tourist streets and observation points improved under this sub-project are critical facilities for promoting tourism in Salt in the future, and the city has announced that the maintenance of these facilities is a high priority.

In 2013 the As Salt Development Projects Unit (ASCD)<sup>26</sup>, a special unit tasked with promoting tourism and preserving scenery in Salt, started to provide a budget for maintaining tourism infrastructure within city limits. This indicates a major financial contribution to the maintenance of target facilities of the Project (ASCD spent 120,635 JD in 2013 in addition to the City's expenditures shown on the table below).

In light of the above, the required maintenance budget is secured.

<sup>26</sup> A special unit established for the purpose of proposing Salt as a world heritage. ASCD comprises 11 employees. Its budget for activities comes from the World Bank's Cultural Heritage, Tourism and Urban Development Project, the royal family, donations, etc.



Table 29: Salt City Engineering and Services Division Expenditures (Unit: JD)

Year	Expenditures
2006	24,501
2007	55,362
2008	27,806
2009	43,279
2010	92,438
2011	14,341
2012	16,054
2013	22,945

Source: Salt City Engineering and Services Division

Note: Figures as of the end of November 2013

### 3.5.4 Current Status of Operation and Maintenance

#### (1) Amman Downtown Tourist Zone

Target facilities are being properly operated and maintained. The facilities have not required particularly major repairs to this point.

#### (2) Raghadan Bus Terminal

Bus terminal operation has not yet begun, but terminal facilities are being properly maintained.

#### (3) Jordan National Museum

The Jordan National Museum has completed its soft opening but has not yet reached the grand opening of the entire facility. However, the facilities themselves are being properly maintained. Cracks in external walls necessitated repairs in 2012, but since the defect liability period was still effective, the construction company completed repairs.

#### (4) The Dead Sea Panoramic Complex

Facilities are operating effectively, and no major maintenance problems have been observed. Some external wall tiles came off, but since the defect liability period was still effective, the construction company completed repairs.

#### (5) Dead Sea Parkway

Facilities are operating effectively, and no major maintenance problems have been observed.

#### (6) Karak Tourism Development

The museum and tourist streets have been properly maintained thus far.<sup>27</sup> As explained previously,

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<sup>27</sup> As of March 2014, cracks in the museum's external walls have been discovered, and repair work has been planned. The scale of the repair work has not been determined yet.

the Lower Observation Point facilities suffered damage during the time maintenance efforts were essentially abandoned, but in 2013 it was repaired with a budget of around 22,000 JD (around 3.2 million yen) from MOTA.

In addition, as an organization in charge of management of the Upper Observation Point, KDC has added various facilities and equipment. One example is the walls and roof were added to the stone-steps open space on the observation point property, which created an improved, concert hall-like facility. Now it is possible to add Liquid Crystal Display screens and lighting so the space can be used as a theater. KDC has also added vegetation to the property, and that space can be turned into a cafe in the summertime. They continue to take the initiative to make these kinds of improvements to the Upper Observation Point. There have been no repairs to damage to the facilities thus far.

#### (7) Historical Old Salt Development

Facilities are operating effectively, and no major maintenance problems have been observed. A new trail tour (walking tour around town) route will be added under the JICA technical cooperation project. This tour route is expected to lead to increased use of target tourist trails.

In light of the above, no major problems have been observed in the institutional, technical and financial aspects of the operation and maintenance system, therefore the sustainability of the project effect is high.

## **4. Conclusion, Lessons Learned and Recommendations**

### **4.1 Conclusion**

The objective of this Project was to increase the number of tourists and foreign currency revenue by developing tourism infrastructure in the capital city of Amman and tourist attractions in the surrounding area, thereby contributing to the promotion of the tourism industry. This objective was relevant to development policy of both Japan and the Hashemite Kingdom of Jordan (hereinafter called Jordan) as well as to the development needs of Jordan both at the time of the Project appraisal and the ex-post evaluation, therefore its relevance is high.

However, at the time of ex-post evaluation, three years after the completion of the Project, two of the seven sub-projects are not fully operational yet. In addition, due to unforeseen events such as the political instability of the region since the Arab Spring, the latest statistics show that numbers of tourists have not reached initial targets. While expanding educational opportunities through museums and intensifying nature conservation activities around the Dead Sea have had positive impacts, the anticipated level of impact on increasing the length of tourists' stays has yet to materialize. In light of the above, the effectiveness and impact of the Project are low.

Although the Project cost was within the plan, the Project period significantly exceeded the initial plan, therefore the efficiency of the Project is fair.

Each agency in charge of a sub-project is continuing to maintain and improve systems for operation and maintenance. In addition, most target facilities are buildings cared for on a daily basis by the agencies in charge and have not given rise to any particular technical concerns. Most of the required budget for maintenance has been secured. In light of the above, the sustainability can be evaluated as high.

In light of the above, the Project is evaluated to be unsatisfactory.

### **4.2 Recommendations**

#### **4.1.1 Recommendations to the Executing Agency**

- The facilities at Raghadan Bus Terminal and the Jordan National Museum are not being used to their fullest and need to become fully operational as soon as possible. The External Evaluator confirmed that an implementation plan for the Raghadan Bus Terminal is currently being drafted, but earnest efforts are necessary in the near future for tasks such as bidding for tenants for shops and other facilities. The Bus Terminal Management Unit needs to consistently implement these plans in the near future.

The Jordan National Museum needs to have its grand opening once a theme has been determined for the Modern Jordan space (exhibit theme details are still under consideration as of March 2014) and the required exhibit items procured as soon as possible. While this is happening, PR activities must be implemented proactively to increase the currently low number of visitors to the museum even when accounting for the fact that the entire facility is not yet open.

- The facilities of the Lower Observation Point in Karak need to continue to be used more effectively. KCPC, the organization responsible for operating the Lower Observation Point, pledged to progress on to the bidding stage, and KCPC needs to consistently press forward with the bidding work and use the facilities more effectively<sup>28</sup>.
- Promotion activities to the outside world from the target areas in all sub-projects, including Karak and Salt in particular, need to be made more active. MOTA, city governments and prominent NGOs in each area need to collaborate with the Jordan Tourism Board to implement effective, efficient promotion activities.
- City governments need to begin working on building parking areas, securing space for roads of appropriate widths and dealing with one-way traffic restrictions as prerequisite conditions in order to attract tourists to their cities. Among particularly urgent requirements is the consideration of concurrent use of large buses and minibuses.

#### 4.2.2 Recommendations to JICA

None.

#### 4.3 Lessons Learned

- Effectiveness of Project Management Unit implementing systems
 

The Government of Jordan established a Project Management Unit to be in charge of overall project implementation. This Project comprised multiple sub-projects, thus it was highly effective in terms of project implementation to have a single liaison for various negotiation and coordination and to have a system with clearly defined responsibilities. Conversely, with this type of temporary organizational system, information about project history and data run the risk of disappearing once the Project is over. Thus, when using such a temporary organization to implement a project, it is important for borrowers and executing agencies to rigorously manage and organize information. Specifically, when such an organization is established, the Japan side and the counterpart's government need to come to an agreement on designating a person in charge of information management and ensuring that updated information and history can be displayed internally and externally at any time, including after project completion.
- Setting target numbers of tourists
 

Target numbers of tourists as quantitative effects of the Project were set rather high, and accordingly affected the rating of the "Effectiveness" of the evaluation. There were no major

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<sup>28</sup> According to information from Jordanian authorities as of September 2014, the operation and maintenance of the point is under tendering process.

problems with the basic approach to setting targets or the process used to calculate them. However, one of the variables on which the calculations were based, the appeal of each tourist attraction, was set high and resulted in targets that were rather high. Appeal was determined based on questionnaire surveys, but a more multifaceted analysis and investigation of appeal, such as incorporating more analytical information and the unique opinions of the study team during the planning stage, were probably required.

It is highly likely that target numbers of tourists will be continuously used as representative indicators showing quantitative effects for tourism sector projects. Given that many factors can influence the projection of the number of tourists, it is important to set targets carefully and from a variety of viewpoints after considering a wide range of risks. It is also important to set targets after confirming whether underlying information is all obtainable or not.

- Importance of tourism promotion

One factor that affected the materialization of Project effects was the lack of effective tourism promotion activities. Conclusive effects of a tourism infrastructure development project can be expected only after a series of processes including tourism promotion activities complete. Thus, effective tourism promotions are extremely important. During the Project appraisal, it is important to confirm whether effective promotion activities had been implemented by the counterpart organizations or not. If there were no detailed plan or past promotional activities, development of promotional plan is necessary, which contributes to ensuring effectiveness of the Project.

### Comparison of the Original and Actual Scope of the Project

Item	Original	Actual
1. Project Outputs	See Table 16	See Table 16
2 Project Period	December 1999–May 2006 (78 months)	December 1999–July 2011 (140 months)
3. Project Cost		
Amount paid in Foreign currency	4,824 million yen	Unknown
Amount paid in Local currency	5,381 million yen (Local currency) 31 million JD	Unknown (Local currency) Unknown
Total	10,205 million yen	9,554 million yen
Japanese ODA loan portion	7,199 million yen	7,165 million yen
Exchange rate	1 JD = 170.85 yen (in November 1997)	1 JD = 146.12 JPY (Average from December 1999 ~ July 2011)