

India

FY2016 Ex-Post Evaluation of Japanese ODA Loan Project
“Ajanta Ellora Conservation and Tourism Development Project II”

External Evaluator: Junko Fujiwara, OPMAC Corporation

0. Summary

The project was intended to promote the tourist industry by monument conservation, holistic tourist development and infrastructure development, thereby contributing to the enhancement of regional development.

The relevance of the project is high as project implementation was consistent with the development policy and development needs of India both at the time of appraisal and ex-post evaluation, as well as with the ODA policy of Japan at the time of appraisal. There were major modifications to the outputs of the project, including the abandonment of some components and a reduction of the target area. The actual cost of the project was within the planned cost. The project period, however, went well beyond the plan as consensus building among stakeholders and various approval processes became complicated, requiring more time for progress management and coordination. The efficiency, therefore, is fair.

The preservation and conservation works at the target archaeological monuments were carried out with the advice of the Panel of Experts both within and outside the country. Skills in preservation and conservation were thus improved. The value of the archaeological monuments centered around the Ajanta and Ellora Caves as tourist destinations was confirmed and improved, and the number of tourist visitors at major caves in the project area exceeded the target. The average duration of stay did not reach the target, but this was mainly due to the infrastructure development under the project, which led to an improvement in tourist accessibility and efficiency in travel time. In other words, this does not represent a reduction of tourists or a decline in the tourism industry. Data on tourism revenue was not obtainable. The number of visitors at the Visitor Centers built near the Ajanta Caves and Ellora Caves was rather less than the target. The actual visitors to the centers, on the other hand, rated them highly, and it can be concluded that the value of their existence is high. The area, however, does not function well enough as a comprehensive tourism development facility as was originally expected, and there is room for improvement in terms of the quality of service for visitors and the use of tourism resources. It was confirmed that the combination of archaeological monument protection, comprehensive tourism development and infrastructure development under the project contributed to vitalization of the local economy including enhancement of business opportunities, an increase in employment opportunities, an improvement in convenience for tourists, expansion of tourism related industries, an increase in business travelers, promotion of industrial parks, etc. There was no negative impact on the natural environment by the project, nor were there land acquisition and resettlement. In sum, the

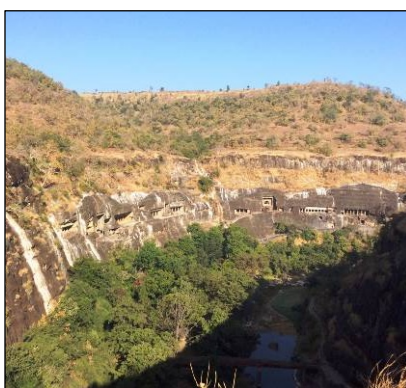
implementation of the project generated positive effects to some extent. The effectiveness and impact of the project are fair.

As to sustainability, there are no issues concerning the operation and maintenance management of the project in terms of the institutional, technical, financial aspects and current status, and the sustainability of the effects of the project is high. In light of the above, the project is evaluated to be satisfactory.

1. Project Description



Project Location



Ajanta Caves



Ellora Caves

1.1 Background

The Ajanta Caves and Ellora Caves, the center of the project target area, are archaeological monuments located in the northern part of Maharashtra State in Western India. The Ajanta Caves have Buddhist murals, sculptures and architecture that date from the 1st century B.C. to the 6th century A.D., while the Ellora Caves have Buddhist, Hindu, Jain sculptures and architecture built between the 5th and 10th centuries A.D. Both caves were inscribed on the UNESCO World Heritage List - a first for India in 1983 - together with the Taj Mahal and Agra Fort¹, and since then, the balanced development between their conservation and promotion as a tourist attraction has been an important issue going beyond state and national boundaries. Japan approved a loan assistance to the “Ajanta Ellora Conservation and Tourism Development Project” (“the first phase of the project” hereafter) in the fiscal year (FY) 1991, and assisted in the conservation of both heritage sites and the surrounding area, in the development of indoor and outdoor facilities for visitor management, in improvement of the adjacent natural environment, in the development of infrastructure, and in comprehensive tourism promotion activities. In Maharashtra State, however, there were many sites besides the Ajanta and Ellora Caves that were left unrepaired as a result of financial constraints. The access roads to these sites were underdeveloped. The capacity of the existing airport and water treatment facility was

¹ There were 35 world heritage sites in India as of May 2017 consisting of 27 cultural, 7 natural, and 1 mixed heritage sites.

limited. There was also a shortage in the workforce that would carry out tourism marketing and promotion activities. To address these issues, the project was approved as the 2nd phase of the above mentioned project.

1.2 Project Outline

The project was intended to promote the tourist industry by the protection and conservation of the Ajanta Caves, Ellora Caves and other archaeological caves and temples in the surrounding area, the improvement of the adjoining natural environment, the development of infrastructure, the management of visitors and comprehensive tourism development such as the construction and operation of the Visitor Centers with accompanying human resource development, thereby contributing to enhancement of regional development.

Loan Approved Amount / Disbursed Amount	7,331 million yen / 6,490 million yen	
Exchange of Notes Date / Loan Agreement Signing Date	March 2003 / March 2003	
Terms and Conditions	Interest Rate:	1.8% (except afforestation and micro credit) 0.75% (afforestation and microcredit)
	Repayment Period:	30 years (within which 10 years for grace period) (except afforestation and microcredit) 40 years (within which 10 years for grace period) (afforestation and microcredit)
	Conditions for Procurement:	General untied
Borrower / Executing Agency	The President of India / Ministry of Tourism	
Project Completion	April 2014	
Main Contractor (Over 1 billion yen)	Larsen & Toubro Ltd. (India), M/S. B. G. Shirke Construction Technology Pvt. Ltd., Pune (India)	
Main Consultant (Over 100 million yen)	Tata Consultancy Services (India) / Oriental Consultants Company Limited (Japan) ²	
Related Studies	“Assistance to the Formulation of the Management Plan for Visitor Centres under the Ajanta Ellora Conservation and Tourism Development Project (II) in India” (2010)	
Related Projects	[ODA loan project] Ajanta–Ellora Conservation and Tourism Development Project (January 1992) [JICA Partnership Program] Project for Supporting OMOTENASHI for Tourism Development in the State of Maharashtra (March 2015 - March 2017)	

² Their official names as of 2017 are Tata Consultancy Services Limited and Oriental Consultants Global Company Limited.

2. Outline of the Evaluation Study

2.1 External Evaluator

Junko Fujiwara, OPMAC Corporation

2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted with the following schedule.

Duration of the Study: September 2016 – October 2017

Duration of the Field Study: November 27, 2016– December 23, 2016, and April 17, 2017 – April 25, 2017

2.3 Constraints during the Evaluation Study

2.3.1 Limitation on the Implementation of the Evaluation

The executing agency of the project was the Ministry of Tourism (MOT), but the project components were implemented by seven different central and state government agencies including the Archaeological Survey of India (ASI) and the Maharashtra Tourism Development Cooperation (MTDC)³. For the ex-post evaluation, due to constraints on the survey implementation period and on budget and human resources, the three above mentioned agencies were mainly contacted for interviews with individuals concerned. The information collected from the remaining five agencies was through a questionnaire survey only. The information collected and the subsequent results of analysis of each implementing agency, therefore, vary in quantity and quality.

2.3.2 Limitation on the Measures of Operation and the Effect Indicators of the Infrastructure Components

The improvement of the airport, forestation, roads and water supply were marked as the development of related infrastructure to achieve the project objectives. In the project appraisal, however, no base figures, and operation and effect indicators, including target figures, were set for each part of the infrastructure. Collection of information on the operation and effect of the above-mentioned infrastructure was carried out through questionnaires. The analysis of the effectiveness of the infrastructure component, as a result, was limited to the confirmation of efficiency and sustainability, except for the airport where such information as the number of passengers and cargo volume was available, and for afforestation where survival rates of planted trees were available.

³ The remaining five implementing agencies were as follows: Airports Authority of India (AAI), Department of Archaeology and Museums of Maharashtra State (DAM), Forest Department of Maharashtra State (FDM), Public Works Department of Maharashtra State (PWD), and Maharashtra Jeevan Pradhikaran (“Water Supply and Sanitation Department of Maharashtra State” in English), Maharashtra State (MJP)

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

3.1 Relevance (Rating: ③⁵)

3.1.1 Consistency with the Development Plan of India

(1) National Development Plans

“The 10th five-year plan” (2002-2007) that was under implementation at the time of the project appraisal (2003) placed tourism as a focus of national activity, and stipulated objectives to improve the competitiveness of India as a tourist destination, to improve and develop tourist attractions that meet the needs of the tourist market, to develop world-class tourist infrastructure, and to make a sustainable and effective marketing plan. “National Tourism Policy” (1982 First edition, 2002 Revised), listed the following as the base policies: 1) Development of laws pertaining to the security of tourists and the development of tourist infrastructure. 2) Building of deeper linkage between cultural heritage and tourism, and 3) Environmental development of adjacent areas of protected cultural heritage. It also laid out the following points in a specific action plan: a) Protection and conservation of the world heritage sites and holistic development of adjacent areas; b) Implementation of strategic promotion of tourism in India; c) Urgent development of highways to the world heritage sites; d) Attraction of commercial facilities to meet the needs of foreign tourists, and; e) Improvement of airport facilities and services.

In the “12th 5-year plan” (April 2012 -March 2017) that was in place at the time of the ex-post evaluation (2016), the tourism sector was expected to advance the plan’s aim to “achieve rapid, comprehensive, and sustainable growth,” and to promote multifaceted growth accompanied by various activities and services, industries, and infrastructure development, which, in turn, would lead to the inclusive growth. The “National Tourism Policy” remains relevant as there has been no revision in its policies or change in its direction.

(2) State Development Plans for Maharashtra

At the time of the project appraisal, Maharashtra State was already actively engaged in tourism development to advance the project activities designated for the “special tourist area” by the central government. As of 1996, the Ajanta and Ellora area was already designated as a special tourist area and was considered to be an important tourism development area publicly endorsed by both the central and state government. The development of related infrastructure was also a priority.

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

⁵ ③: High, ②: Fair, ①: Low

At the time of the ex-post evaluation, tourism was identified as a priority sector in the “Maharashtra State Tourism Policy” (2006 First Edition, 2016 Revised) and seven strategies⁶ had been set out therein.

In the strategies, Aurangabad District, where the Ajanta Caves and Ellora Caves are located, is one of the target districts in the State for the “development and improvement of special tourism districts/zones” and as a “Public Private Partnership Model for growth in the tourism sector.”

In conclusion, implementation of the project is consistent with the national development plan and the Maharashtra State’s tourism sector development plan both at the time of the project appraisal and the ex-post evaluation.

3.1.2 Consistency with the Development Needs of India

(1) Preservation and Conservation of Archaeological Monuments

Some activities were not started during the first phase of the project. These included structural restoration of cave walls, the development of a visitor management facility, repair and restoration of breakages or defects in the body of the cave wall, architectural materials and sculptural decorations, and guarding against pests, etc. At the time of the appraisal therefore, it was considered urgent that repair and protection should take place, and also that the caves should be preserved and the murals protected. It was also necessary to protect and preserve other sites (Pitalkhora Caves, Aurangabad Caves, Daulatabad Fort, Bibi-Ka-Maqbara, Patnadevi Temple, Daityasudana Temple, etc.) that were left unpreserved due to a lack of financial resources. These sites boast the highest values among all the sites in existence in India today, and their protection and conservation needs were verified at the time of the ex-post evaluation.

(2) Comprehensive Tourism Development

In addition to environmental conservation of the area adjacent to the Ajanta Caves and Ellora Caves, and the visitor management that was implemented in the first phase of the project, there was an urgent need at the time of the project appraisal to improve the visitor facilities. Necessary improvements included measures against the intense heat, the development of human resources relevant to tourism, and the enhancement of IT skills to strengthen promotional and marketing activities. It was also recognized that cultural heritage

⁶ The seven strategies were as follows: a) To achieve 10% annual sector growth and make the share of tourism and related activities 15% of the State GDP. b) To create 1 million new employment opportunities by 2025. c) To strengthen organizational efforts and governance. d) To promote the development of special tourism districts. e) To develop a corridor for tourism development. f) To build a public-private partnership for tourism sector growth. g) To advance marketing and tourism promotion.

sites around Mumbai including the Elephanta Island Caves merited protection measures under the project to prevent deterioration of these precious tourism attractions⁷.

As at the time of the ex-post evaluation, MTDC remained actively engaged in various promotional activities including TV promotion, newspaper advertisement, brochure development, and the organization of festivals. The need for the comprehensive tourism development in Maharashtra State remains high, nonetheless, as improvements in quality are constantly expected for effective and efficient use of existing tourist attractions, and for the development of strategic and flexible marketing activities based on the analysis of tourist trends.

(3) Infrastructure Development

The main road which connects the city of Aurangabad, the airport, the Ajanta Caves, the Ellora Caves, and Daulatabad Fort was improved through the first phase of the project. There were, however, still many roads in need of development for better access to tourist sites and the improvement of convenient mobility at the time of appraisal. These included the access road connecting the Ajanta Caves with an important railroad and the access road to the Pitalkhora Caves. On the other hand, the terminal building and the apron of Aurangabad Airport were too small to serve frequent flights. International flights were not available due to the lack of customs, immigration and quarantine facilities.

At the time of ex-post evaluation, there was still room for improvement in terms of transportation access to some heritage tourist sites. It was also expected that Aurangabad Airport would further increase the number of flights and to improve connections⁸. Thus, the need to develop infrastructure in this district remains high.

Based on the above, consistency between the project and the development needs was verified at the time of project appraisal as well as at the ex-post evaluation.

3.1.3 Consistency with Japan's ODA Policy

The focal sectors in the ODA policy toward India, at the time of appraisal, were: poverty alleviation, afforestation, water quality improvement, etc. The Medium-Term Strategy for

⁷ While heritage sites, including caves, are considered as "tourist attractions" and infrastructure, including airports, roads and water sewage systems as "foundation for tourism," the project used the expression, "comprehensive tourism development" to include the efforts to develop facilities to develop publicity for the effective use of tourist attractions, and to support local employment enhancement and local development. In addition to the repair and protection of heritage sites that are managed by the central government such as the Ajanta and Ellora Caves, other monuments in Maharashtra State were also considered as the project target as part of the comprehensive tourism development to use tourist attractions effectively.

⁸ Based on interviews conducted with the stakeholders in the beneficiary survey (described later).

Overseas Economic Cooperation Operation⁹ listed “support for rural development,” “assistance to environmental improvement and pollution prevention,” and “infrastructure development for economic growth” as key areas. The Country Assistance Strategy for India in FY2002 stipulated “environmental conservation” as a key area, and further specified “assisting the preservation of the social environment by protecting archaeological monuments such as caves which are registered as World Heritage Sites and by developing tourism infrastructure,” as well as “assisting indirectly the enhancement of employment opportunities among the local poor by developing environmental infrastructure.”

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

3.2 Efficiency (Rating: ②)

3.2.1 Project Outputs

The project consisted of three main components: protection of archaeological monuments, comprehensive tourism development and infrastructure development. In comparison with the original plan, however, there were major changes in terms of the project outputs. The differences between the original plan and the actual outputs are shown in Table 1 (Details are in “Comparison of the Original and Actual Scope of the Project” at the end of this report). The major outputs of the project components are shown in the map (Figure 1).

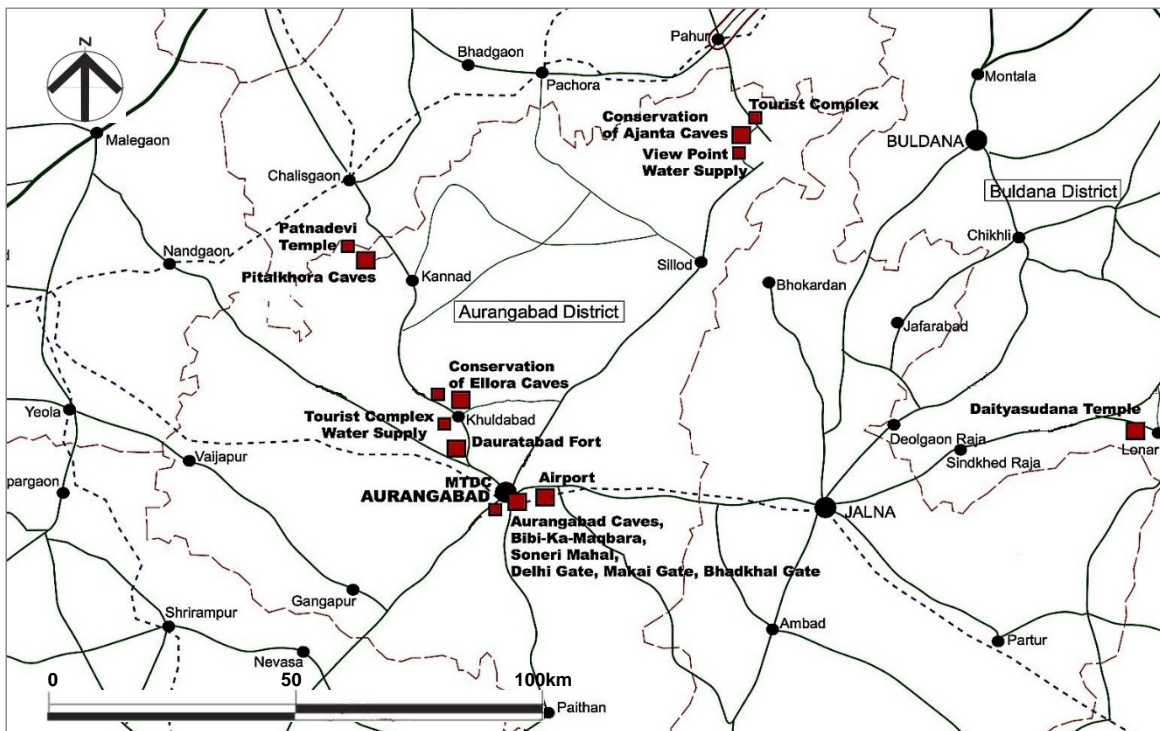
Table 1: The major differences between the original plan and the actual outputs

Components	Original Plan	Actual
1. Monument Conservation	Preservation of caves and temples (Ajanta Caves, Ellora Caves, Pitalkhora Caves, Aurangabad Caves, Bibi-Ka-Maqbara, Daulatabad Fort, and Patnadevi Temple), formulation of a Site Management Plan for each site, elaboration of an annual implementation plan, organization of the Panel of Experts’ meetings, development of the site record archive and documentation system, development of a monitoring system, and development of human resources.	Implemented mostly as planned.
2. Comprehensive Tourism Development	Construction of tourism infrastructure and facilities, enhancement of promotion activities, human resource development, IT utilization, poverty alleviation and regional development through microcredit, Lonar environmental conservation and tourism development, protection and preservation of Daityasudana Temple, preservation of state archaeological monuments, and additional subprojects in the vicinity of caves.	A part of human resource development (construction of a training center and development of training software), the microcredit scheme and a part of Lonar environmental conservation and tourism development, some of the state archaeological monuments, as well as additional subprojects in the vicinity of caves were abandoned. As a result, the project target area was limited to Aurangabad City

⁹ First established and publicized in December 1999. This policy is the second phase that covered the years between FY2002 and FY2005.

Components	Original Plan	Actual
		and its adjacent areas. Construction of tourism infrastructure and facilities, promotion activities, IT utilization and the protection and preservation of Daityasudana Temple were implemented mostly as planned.
3. Infrastructure Development	1) Improvement of Aurangabad Airport (Construction of the terminal building, expansion of the apron, extension of runway)	Components were implemented mostly as planned. As for the construction of the terminal building, there was a major change in the design.
	2) Afforestation (Planting trees in 1,878ha of land in ten sites), installation of fire towers, fire prevention equipment, and tourist facilities (such as nature trails, etc.)	Forestation sites were reduced to seven sites (about 2,000ha). Development of tourist facilities was not implemented. Information gathering, operation and management facilities and others were implemented mostly as planned.
	3) Improvement of roads (twelve sections, total length of 259.72km)	Implementation took place at two sections with a total length of 38.55km. Ten sites with a length of about 200km were excluded.
	4) Water supply at tourist attractions (six sites)	Implementation took place at two sites, which was less than half of the original plan.
4. Consulting Services	Detailed design, preparation of pre-qualification screening documents and evaluation reports, preparation of bidding documents, support of the bidding process, detail design review and evaluation, assistance to the implementation and other related agencies, and construction supervision.	As far as it could be confirmed, there was a major increase of 184 man / month.

Source: Summarized by the Evaluator based on the related materials.



Source: Provided by JICA

Figure 1: Distribution of Actual Major Outputs of the Project

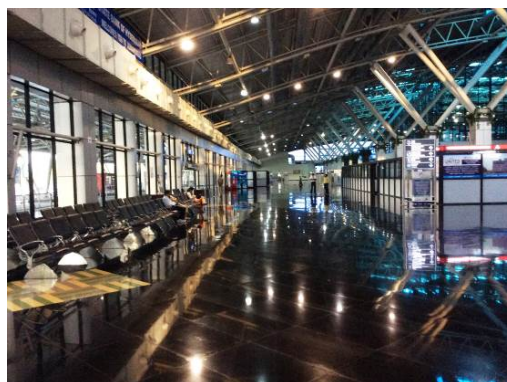
Major changes took place in the comprehensive tourism development component. A part of human resource development (construction of a training center and development of training software), microcredit and a part of Lonar environmental conservation and tourism development, some of the State's cultural sites, as well as additional subprojects around the caves were abandoned. The project target area, as a result, was limited to Aurangabad City and its adjacent areas. In addition, in the infrastructure development component, there were a major change in the design of the terminal building of Aurangabad Airport, a reduction in afforestation sites, a scaling down of road development, and a reduction in the water supply improvement sites.

One of the main factors that caused the reduction in the project outputs was the exclusion of some activities of the component from the project targets due to budget constraints. These were the outputs planned in the project appraisal to be implemented with a local budget. The project allocated a planned budget in advance to each implementing agency responsible for each project component. The central government's implementing agencies (two agencies) received the budget from the Ministry of Finance, while Maharashtra State's implementing agencies (five agencies) received it via the state government. This made it difficult in practice to divert the project budget between components. Each implementing agency carried out the procurement and civil work as well as expenditure progress management to the limit of their allocated budget. Even if an agency expected a budget shortfall for some project components, surplus budget from other components was not reallocated. When the implementing agency could not provide supplementary funds from its own budget, some projects component were abandoned. Due to the major extension of the project period, on the other hand, consulting services increased in quantity. As far as it could be confirmed, there was a major increase of 184 man / month.



Source: Taken by Evaluator (December 2016)

Photo 1: Entrance of Ajanta Visitor Center



Source: Taken by Evaluator (December 2016)

Photo 2: Inside of Aurangabad Airport

The main purpose of the first phase of the project was the restoration and conservation of the Ajanta Caves and Ellora Caves. Tourism development, therefore, was limited to the introduction of an electric bus, development around the heritage sights, and public relations. In contrast, the number of target archaeological monuments for preservation and conservation by the project increased to seven sites in and around Aurangabad City including the Ajanta Caves and Ellora Caves. The contents of the comprehensive tourism development also expanded not only in number, but also geographically to cover the entire Maharashtra State. This included the construction of two visitor centers (hereinafter “VC”), promotion activities, microcredit, human resource development, IT utilization, Lonar environmental conservation and tourism development, Daityasudana Temple, six state cultural sites, protection and repair of nine sites of various scales in Mumbai, Pune District, Nasik District, Buldana District and Jalgaon District. Organization of the project implementation and consulting services, however, was estimated at the same level as during the first phase. This was not a reasonable plan for effective function given the contents of the project plan. Inevitably, the project faced various difficulties in terms of project supervision. These included budget modification, coordination among concerned agencies, and implementation of progress management. The target areas and contents were consequently decreased, which was a reasonable and realistic measure in light of the given implementation structure. The increase of consulting services due to the extension of the project period is also considered to have been necessary.

3.2.2 Project Inputs

3.2.2.1 Project Cost

The actual project cost, 8,172 million yen, was largely below the planned project cost of 15,461 million yen (53%) (Table 2).

Table 2: Planned Budget and Actual Expenditure

Item	Plan						Actual					
	Foreign Currency (Mil JPY)		Local Currency (Mil INR)		Total (Mil JPY)		Foreign Currency (Mil JPY)		Local Currency (Mil INR)		Total (Mil JPY)	
	Total	ODA loan	Total	ODA loan	Total	ODA loan	Total	ODA loan	Total	ODA loan	Total	ODA loan
1. Monument conservation	82	82	335	335	903	901	0	0	342	342	731	731
2. Tourism development	1,250	678	1,015	859	3,738	2,785	126	126	1,355	1,199	3,273	2,859
3. Infrastructure development	231	212	2,102	769	5,380	2,096	0	0	1,361	776	3,224	1,836
4. Consulting services	278	278	55	55	413	413	216	216	121	117	463	456
5. Price escalation	92	46	235	133	667	372	0	0	0	0	0	0
6. Contingency	78	48	173	98	501	289	0	0	0	0	0	0
7. Administration cost	362	-	705	-	2,088	-	N.A.	-	N.A.	-	N.A.	-
8. Land acquisition	-	-	150	-	368	-	-	-	0	-	0	-
9. VAT	161	-	313	-	928	-	0	-	0	-	0	-
10. IDC	475	475	-	-	475	475	475	475	-	-	475	475
11. Service charge	-	-	-	-	-	-	6.5	6.5	-	-	6.5	6.5
Total	3,009	1,819	5,083	2,249	15,461	7,331	824	824	3,179	2,434	8,172	6,490

Source: provided by JICA

Note 1: VAT is the abbreviation of “value added tax.” IDC refers “interest during construction.”

Note 2: the base for cost calculation at the appraisal was made as of September 2002, and the exchange rate for 1 Rupee was 2.45 JPY. The average rate between 2003 and 2014 was 2.14 JPY for 1 Rupee (calculated from the annual average exchange rates in the International Financial Statistics, IMF).

Note 3: Out of the actual expenditure, price escalation, contingency and VAT are included in each project component. No land acquisition occurred. There was no information provided for the administration cost.

In this ex-post evaluation, taking the major reduction of the actual outputs into consideration, the original budget plan was recalculated and revised in order to make the cost comparison¹⁰. The revised planned project cost, as a result of recalculation, is estimated as 8,260 million yen. The actual project cost of 8,172 million yen is well within the revised planned cost (100% against the revised planned cost.) (Table 3).

Looking at the actual cost of individual budget items, the major excesses were seen in the cost of the VC construction (from a planned 1,303 million yen to an actual 2,614 million yen), and the cost of the airport development (from a planned 1,682 million yen to an actual 2,864 million yen). The main causes of the cost overrun for the VC construction were the increased construction cost needed to drill and cut the hard base rock, which had not been foreseen at the time of the feasibility study, as well as the increased cost for the production of replicas of Buddha statues, murals, sculptures, etc. The cost overrun for the airport development, on the other hand, was a result of the review and updating of the planned content and the construction cost taking into consideration price escalation and exchange loss during the implementation period. Both situations are considered to have been inevitable.

¹⁰ The revised planned budget is estimated by deducting the budget amount for the components that were not implemented, administration cost and land acquisition cost from the original budget plan.

Table 3: Revised Plan of the Project Cost

Budget Item	Revised Budget Plan		
	Foreign Currency (Mil JPY)	Local Currency (Mil INR)	Total (Mil JPY)
1. Monument conservation	69	238	653
2. Comprehensive tourism development	1,250	736	3,055
3. Infrastructure development	212	883	2,375
4. Consulting services	278	55	413
5. Price escalation	91	130	408
6. Contingency	77	93	304
7. Administration cost	-	-	-
8. Land acquisition cost	-	-	-
9. Value added tax	158	171	577
10. Interest during construction	475	-	475
Total	2,610	2,306	8,260

Source: provided by JICA, and answers to the questionnaire survey from the executing agencies

Note: the base exchange rate at the time of appraisal (2.45 yen for 1 Rupee) has been applied.

3.2.2.2 Project Period

The planned project period was 64 months¹¹ (5 years and 4 months) from March 2003 to June 2008. The actual period was 134 months (11 years and 2 months) from March 2003 to April 2014, which largely exceeded the plan (209% against the plan).

The reasons that the project period was extended, despite the reduction of the actual outputs, were a) complications among the implementing agencies in the consensus building and approval process, which made coordination difficult; b) more time was needed for progress management and coordination between each construction work due to the large number of construction contracts; c) the necessity to change the design and to revise the cost due to the time lag between the plan and implementation; d) delay in budget allocation by the Maharashtra State Government; e) lengthening of the monument conservation activities, and; f) more time was needed to construct VCs and to create replicas. The lengthening of the site protection activities was due to the fact that the preservation and restoration of the target caves and temples was done to an international standard. This, and the lengthening of the VC development, are considered to have been inevitable.

3.2.3 Results of Calculations for Internal Rates of Return

The internal rate of return was calculated at the time of the appraisal. The Financial Internal Rate of Return (FIRR) of the improvement of the Aurangabad Airport facility, the Economic Internal Rate of Return (EIRR) of the two VCs in Ajanta and Ellora, and the EIRR of the road improvement were calculated as 12.6%, 22.7%, and 17.7% respectively (Table 4).

¹¹ The onset of the project is the month-year of the signing of the loan agreement. On the other hand, project completion was defined as “completion of project components.”

Table 4: Internal Rate of Return at the Time of Appraisal

	Improvement of Aurangabad Airport facilities	Construction of Visitor Centres	Road repair and widening works
Cost	Construction cost, O&M cost, and interest payment	Construction cost and O&M cost	Construction cost, O&M cost and periodic overlay
Benefit	Route & navigation facilitation charge, landing charge, passenger service charge and other charges	Multiplied revenue generated from tourist expenditure on food & beverages, shopping and other expenditures such as guiding fees	Savings in vehicle operating costs, time saving costs and labor charge savings
Project Life	31 years	31 years	31 years
IRR	FIRR: 12.6%	EIRR: 22.7%	EIRR: 17.7%

Source: provided by JICA

In this ex-post evaluation, an attempt was made to collect data to recalculate the actual internal rate of return. Airports Authority of India (AAI), however, did not provide data related to the historical revenue of the airport since the opening. As for the road, only two out of twelve planned road construction sections were implemented, and there was no data provided by Public Works Department of Maharashtra State Government (PWD). Finally, for the VCs, no assumed revenue from the entrance fees and tenant fees had been collected from the opening. Recalculation was therefore impossible.

To summarize, the project cost was within the planned, but the project period was significantly longer than planned. Therefore, the efficiency of the project is fair.

3.3 Effectiveness¹² (Rating: ②)

The purpose of the project, “promotion of the tourism industry” was analyzed by reviewing the achievement rate of each indicator. The result of the beneficiary survey¹³ was also taken into consideration. The results of the analyses are discussed below.

¹² Sub-rating for Effectiveness is to be put with consideration of Impact.

¹³ Detailed interviews and questionnaire surveys were conducted as part of beneficiary survey. The survey period was between November 30 and December 19, 2016. An outline of each survey is as follows:

- i. Detailed interview survey: Conducted with tourism service providers (19 individuals locally employed, five tourist guides, four individuals from the hotel industry, three travel agencies, two taxi operators, and two individuals from local business circles.
- ii. Questionnaire Survey: Conducted with visitors to the Ajanta Caves and Ellora Caves (200 travelers) who included 101 Indians and 99 foreigners; 161 men and 39 women. In terms of age group, individuals in their 30s were the biggest group (72), followed by 40s (63), and 50s (41). A little less than 40% of Indians (38) were the residents of Maharashtra State. Europeans (English, Spanish, Austrian, and French) were the biggest group with 50 visitors among all the foreigners (including 6 non-resident Indians), followed by 34 Asians (Thai, Japanese, and Singaporean). The rest were from the Middle East (UAE and Oman), Africa (Kenya, etc.) North America (Canada and USA), and Oceania (New Zealand). In addition, the visitors to both caves had following characteristics: a) more Indians than foreigners. b) more visitors to Ellora Cave than the Ajanta Caves. c) more men than women. To obtain a certain number of samples for analysis, samples were extracted evenly between different sampling locations, Indian and foreigners, and men and women. The results of the beneficiary survey, therefore, do not give an approximate representation of the population characteristics. Furthermore, the difference in the sample numbers between men and women derived from the fact that the visitors were dominantly men, and that the attempt to interview women resulted in response from the men accompanying them. This made interviewing women difficult.

3.3.1 Quantitative Effects (Operation and Effect Indicators)

(1) Number of visitors to the caves and temples

The number of visitors to the major monuments restored under the project is shown in Table 5. At the time of the ex-post evaluation (2016), the number of visitors to the Ajanta Caves, Ellora Caves, Aurangabad Caves and Bibi-Ka-Maqbara had exceeded the target set for two years after project completion, although numbers for Daulatabad Fort did not reach the target.

Table 5: Numbers of visitors to the Caves and Temples

Unit: 1,000 people / year

Name	Baseline	Target	Actual					
	2001	2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016
	Planned Year	2 Years After Completion	-	Preservation work completion	-	Completion Year	1 Year After Completion	2 Years After Completion
Ajanta Caves	330	506	607	664	572	532	577	577
Ellora Caves	486	745	1,882	2,155	1,890	1,861	1,977	1,770
Daulatabad Fort	492	642	889	931	587	584	585	524
Pitalkhora Caves	10	13	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Aurangabad Caves	13	17	69	78	72	79	90	107
Bibi-Ka-Maqbara	393	513	1,726	1,936	1,303	1,365	1,339	1,305
Daityasudana Temple	1	2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Patnadevi Temple	1	2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Source: provided by Archaeological Survey of India

Note 1: Number of visitors is counted at each site, based on the number of entrance tickets sold at the entrance of each site.

Note 2: Data on the number of visitors at the Pitalkhora Caves, Lonar and Patnadevi Temple was not collected as there was no information on the number of tickets available. It was free of charge to enter these monuments.

Note 3: Number of visitors in the table has been adjusted taking the following conditions into consideration: 1) children under fifteen years old are not counted, and; 2) there is an open day monthly for all visitors free of charge.

Note 4: The whole project was completed in April 2014. Monuments conservation works, however, ended in March 2012.

Looking at trends since 2011, on the other hand, the number of visitors fluctuates almost every year. To understand this, “external factors” to the project must be taken into consideration such as the heat wave and the state election in 2014 and the demonetization of high denomination bank notes in 2016, all of which affected tourist movements. The number of visitors at Daulatabad Fort has not reached the target since FY2013, but it largely exceeded it during the project implementation years of FY2011 and FY2012, just as at the other sites, and then leveled off. It is not therefore considered problematic.

Under these circumstances, the significant achievement of the Ellora Caves and Bibi-Ka-Maqbara¹⁴ was very noticeable. The Ellora Caves, as a World Heritage Site, host the cave temples and monasteries of three religions (Buddhism, Hindu and Jainism) and are valuable religious tourist attractions. It is also true that access to the Ellora Caves was

¹⁴ The tomb of the first wife of the 6th Mughal Emperor built after the Taj Mahal by their son, the 7th Emperor.

significantly improved by the road development project in the first phase. In addition, many people visit the Ellora Caves on the way to the Grishneshwar Temple nearby. Grishneshwar Temple has high religious significance¹⁵. The highest number of visitors at the Ellora Caves is thought to have been influenced by this. The high number of visitors to Bibi-Ka-Maqbara is due to its reputation as a “Mini Taj Mahal” or the “Taj Mahal of the Deccan.” In many cases, people visit Daulatabad Fort and the Aurangabad Caves in conjunction with the Ellora Caves and Biki-Ka-Maqbara nearby, then also Aurangabad City in a one-day tour¹⁶.

At the Ajanta Caves, another World Heritage Site, rare murals were repaired and conserved under the project. As it is a Buddhist site, it has become a major religious tour destination for Buddhists from inside and outside of India. Many residents of Maharashtra State also visit. The reason for the smaller number of visitors in comparison with those at the Ellora Caves was reported to be its distance from Aurangabad City, the tourist hub. It takes only 30 minutes by car to the Ellora Caves, while it takes a few hours to the Ajanta Caves. The additional problem of having to change to a special bus in the parking lot at the foot of the hill is also said to deter individual tourists and tour guides.

(2) Number of visitors at Ajanta Visitor Center and Ellora Visitor Center

For the two VCs constructed in the project, the target number of visitors were set in accordance with the number of visitors to the Ajanta Caves and Ellora Caves themselves. The actual turnout in 2016 remained very low. In Ajanta, only one seventh of those who visited the Caves used the VC, while in Ellora, the figure was only one twentieth.

Table 6: Number of visitors at Ajanta Visitor Center and Ellora Visitor Center

Unit: 1,000 people / year

Name	Baseline	Target	Actual			
	2001	2010	FY2013	FY2014	FY2015	FY2016
	Planned Year	2 Years After Completion	Soft Opening	Project Completion	1 Year After Completion	2 Years After Completion
Ajanta Visitor Center	330	506	108	54	92	68
Ellora Visitor Center	486	745	32	22	21	37

Source: provided by MTDC

Note 1: The figure for FY2013 shows visitors from December 2013 (when the soft opening started) to March 2014 (seven months).

Note 2: The grand opening was April 2014 when all exhibits were complete.

Note 3: The figure for FY2016 shows visitors for ten months from April 2016 to January 2017.

¹⁵ One of the 12 Jyotirlinga manifestations of Lord Siva described in “The Siva Purana” (Sivaist Hindu literature).

¹⁶ According to the interviews with MTDC, tour guides and travel agents, many tourists visit the cave temples around Aurangabad City (Ellora Caves, Bibi-Ka-Maqbara, Daulatabad Fort, Aurangabad Caves) on a day trip. When asked about “other monuments visited during this trip aside from Ajanta and the Ellora Caves” in the ex-post evaluation, Bibi-Ka-Maqbara was mentioned most (74 out of 101 Indians and 80 out of 99 foreigners), followed by Daulatabad Fort (70 Indians and 68 foreigners), and the Aurangabad Caves (40 Indians and 32 foreigners). This result endorsed the interview testimonies above.

The following factors contributed to the low visitor turnout: a) at the time of appraisal, as major restrictions on the entrance to the caves was planned for their protection and preservation, the VCs were conceived as alternative visit sites with replicas of the murals and sculptures. The caves, however, continued to be open to public, and at the timing of ex-post evaluation as well, visitors could observe the real monuments even with some restrictions¹⁷. The need to see the replicas at the VCs, therefore, was relatively low. b) The VCs were placed and constructed not far from the visitors' travel routes, but they were constructed in a unobtrusive location. Recognition among tourists, as a result, was low. c) There was no effective guidance to attract cave visitors to the centers. d) Due to the limited time available in itineraries, there are cases in which the guides do not take the tourists to the centers. e) The educational value of the centers is not shared with the tourists. f) There is no explanations or guidance given by the curators. In the original plan, the main purpose of VC construction was, as mentioned above, to have alternative visit sites in times of major entrance restrictions which hosted replicas of the murals and sculptures not open to the public. Lack of coordination and agreement with ASI in terms of the planning and the design of the VCs, however, seems to be the root cause of the low visitor usage.

The educational value of the exhibitions at the centers is nonetheless high, and MTDC is sending out invitations to educational institutions such as primary schools in and out of Aurangabad District to attract group visits by pupils. Publicity activities also take place as required targeting state government officials to promote visits to the centers. JICA implemented the "Project for Supporting OMOTENASHI for Tourism Development in the State of Maharashtra" in the framework of the JICA Partnership Program between FY2014 and FY2016 to support comprehensive tourism development centered around the VC, and this contributed to improvement of the situation. Parallel to these efforts, MTDC is aiming at selling combination ticket for Ajanta and the Ellora Caves and the centers. At the time of the ex-post evaluation, there has not been much progress, however, due to the necessity for law amendments as well as arguments about whether or not to apply this idea to other sites.

In conclusion, the comprehensive tourism development facilities around Ajanta and the Ellora Caves have not reached the operation level that was originally expected, and therefore the objective has not been achieved.

¹⁷ ASI set the Cave opening hours as 9:00 am - 5:30 pm to protect murals and sculptures in the caves. Use of tripods and flash and other sources of light, video shooting, touching the murals and sculptures, eating, and speaking in the Cave were all prohibited. The number of visitors in one 15-minute visit was limited to 40 people (they also set an interval of 5 minutes before the next group could enter the caves.)

(3) Income from tourism

In this ex-post evaluation, collecting actual data on the expenditure from tourists was difficult, and therefore it was also difficult to analyze this indicator. Regarding the number of hotel guests in Aurangabad District, the source of various data used in the project planning period was not clear, and it was therefore difficult to collect data under the same conditions. The average number of nights, however, in one year starting July 2014 was 1.20 days for Indians and 1.16 days for foreigners, which was below the baseline and target (2016).

Table 7: Expenditure from tourists, number of hotel guest, and average duration of stay

Indicator	Unit	Baseline	Target	Actual		
		2001	2010	FY2014	FY2015	FY2016
		Planned Year	2 Years After Completion	Completion Year	1 Year After Completion	2 Years After Completion
1. Expenditure from tourists						
Indians	Rs. million / year	1,494	2,127	N.A.	N.A.	N.A.
Foreigners		121	171	N.A.	N.A.	N.A.
2. Number of hotel guests	1,000 person / day	57	89	N.A.	N.A.	N.A.
3. Average duration of stay	No of days	3.32	4	N.A.	Indians: 1.20 Foreigners 1.16	N.A.

Source: provided by JICA for baseline and target (original source unknown), and by MTDC for actual number of days tourists stayed (source: "Tourism Survey for the State of Maharashtra")

Note: Among the indicators in the table, the expenditure from tourists was defined as the amount of money spent by Indians and foreigners for their hotel accommodation, food and drinks within their hotels, and entrance fees at the tourist spots. The number of hotel guests described the number of guests at the hotels in Aurangabad District that were registered with the government. The average duration of stay showed the data collected at hotels in Aurangabad District.

The background to the non-achievement of the baseline and target of the average number of overnight stays is the improved efficiency of itinerary achieved by infrastructure development under the project and in the first phase of the project. According to the detailed interviews, reduction in travel time thanks to road improvement made it possible to visit the caves and temples in the suburb of Aurangabad City, including the Ellora Caves, in a day. It also made it possible to visit the Ajanta Caves on a day trip from Aurangabad City¹⁸. Furthermore, the improvement of Aurangabad Airport in addition to roads, made the day trip from Delhi and Mumbai possible.

The trends of tourists to Aurangabad District in recent years is shown in Table 8 as the supplementary data that endorses the contents of the aforementioned detailed interviews.

¹⁸ The results of the questionnaire survey with visitors to the monuments shows that 20 out of 101 Indian tourists were on a day trip, 48 had an itinerary of 2-3 days, and 25 an itinerary of about a week. Among the 81 people who stayed at a hotel, 50 did so in Aurangabad City. Only 11 Indian tourists stayed at hotels near Ajanta and the Ellora Caves. All 99 foreign tourists had accommodation, 86 stayed in Aurangabad City, 8 in Mumbai and 3 near the Caves. This clearly shows the trend that the accommodation facilities in Aurangabad City function as the hub of the Ajanta and Ellora Caves tourism.

Looking at the average duration of stays and day-trips among all tourists in FY2013 and FY2014, Indian visitors on a day trip were six times (2014) and 14 times (2013) more than those who stayed overnight¹⁹. It is therefore not considered to be a problem that the average number of overnight stays fell below the baseline and the target.

Table 8: Trends of tourists to Aurangabad District

Unit: 1,000 people / year

Tourist	FY2013			FY2014 (Completion Year)					
	Overnight stay	Day trip	Total	Overnight stay				Day trip	Total
				Hotel	Stay at friends & relatives place	Stay elsewhere	Total		
Indian	1,512	21,632	23,145	1,914	584	599	3,097	19,563	22,660
Foreigner	170	0	170	137	0	0	137	0	137
Total	1,682	21,632	23,315	2,051	584	599	3,234	19,563	22,797

Source: provided by MTDC ("Tourism Survey for the State of Maharashtra")

Note 1: The state parliament election took place in early 2014, which affected the implementation of the tourism survey. Due to such reasons, the FY2014 data were collected from July 2014 to June 2015.

Note 2: The method of data collection at the time of appraisal is unknown. The survey method which MOT introduced recently to the tourism statistical survey is different from those used in the past. It is therefore considered not appropriate to make a comparison with the target figure in Table 7 in terms of number of hotel guests.

Reference: In addition to tourists, the number of visitors for business purposes and others in Aurangabad District was 14,499 in FY2013 and 24,329 in FY2014. There are five industrial estates operated in the surrounding areas of Aurangabad City, which is one of the reasons that regional industry has been promoted.

On the other hand, in 2015, the number of hotels increased 18 times, the number of rooms seven times, and the occupancy rate 1.6 times against the reference at the project appraisal in 2000 (Table 9). According to MTDC, the hotel occupancy rate of Aurangabad District in recent years (around 80%) has been the highest in Maharashtra State.

According to the detailed interviews with MTDC as well as with tourism service providers (local souvenir shops, tourist guides, travel agents, taxi operators, and local business circles), the number of hotel guests is increasing every year. The increase in numbers of both Indian and foreign tourists to Aurangabad District was noted and it was pointed out that a major increase has been observed in the number of foreigners especially thanks to the infrastructure development including the airport.

¹⁹ This is thought to be the effect of local industry development in the suburb of Aurangabad such as the operation of 5 industrial parks.

Table 9: Number of hotels and guest rooms

Indicator	Unit	Baseline	Actual					
		2000	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016
		Planned Year	-	-	-	Completion Year	1 Year After Completion	2 Years After Completion
No of hotels	No.	10	161	N.A.	228	172	182	N.A.
No of guest rooms	No.	466	3,200	N.A.	4,560	3,396	3,596	N.A.
Hotel occupancy rate	%	50.4	N.A.	N.A.	N.A.	78	79	N.A.

Source: provided by MOT and MTDC (“Tourism Survey for the State of Maharashtra”)

Note 1: In addition to the ten hotels registered with the GOI, there were a reported 50 unregistered hotels as of 2000.

Note 2: The hotel occupancy rate shows to what extent the guest rooms are used. It is calculated by dividing the number of guest rooms actually occupied by the number of guest rooms that are available for sale.

Note 3: The state parliament election took place in early 2014, and this affected the implementation of the tourism survey. Due to such reasons, the FY2014 data were collected from July 2014 to June 2015.

As stated above, the data for expenditure by tourists was not obtainable. Though the average duration of stay did not reached the target set at appraisal, given the fact that there are 4-5 times more one-day visitors than lodgers, the non-achievement of the target does not mean a reduction in tourists or a decline in tourism. The absolute number of hotel guests is also confirmed to be on the increase. Based on this, the tourist industry of Aurangabad centered around the Ajanta and Ellora Caves is considered to be booming.

(4) Operational Status of Infrastructure (reference)

The data for the operational status of Aurangabad Airport and the survival rates of planted trees were confirmed as follows. The data for the operational status of the roads and water supply facilities were not available.

i. Airport Improvement

Aurangabad Airport was fully opened in March 2009. The data shown in Table 10 were collected from AAI. Though there are still not regular international flights, there is a steady number of domestic flights. The number of annual domestic departure and arrival passengers has constantly reached the 100,000 mark since the opening. Between FY2011 and FY2014 the number exceeded 200,000 for both departure and arrival. According to the tourism service providers (tourist guides, hotel industry, travel agents, taxi operators, tourism industry papers, etc.) the impact of infrastructure development, including the airport and roads, is considerable, and the number of both business travelers and tourists is increasing by the year. There are about 2,000 scheduled flights annually. Cargo volume is larger in departing flights than arriving ones, which suggests stable local demand.

Table 10: Operational Status of Aurangabad Airport

Indicator	Unit	Baseline	Actual							
		FY2000	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016
		Planned Year	Full open	-	-	-	-	Completion Year	1 Year After Completion	2 Years After Completion
1. No of passengers on domestic flights										
Total	1,000 person	105	218	267	402	436	444	426	299	261
Arrival		N.A.	108	132	200	218	216	206	142	123
Departure		N.A.	110	132	202	218	228	220	157	138
2. No of passengers on international flights										
Total	1,000 person	N.A.	-	5	3	3	6	2	2	2
Arrival		N.A.	-	3	-	-	-	-	-	-
Departure		N.A.	-	38	3	3	6	2	2	2
3. Number of regular flights										
Total	No of flights	1,460	3,622	3,824	4,792	4,173	3,827	3,851	3,444	2,884
Arrival		N.A.	1,811	1,912	2,396	2,087	1,912	1,925	1,723	1,440
Departure		N.A.	1,811	1,912	2,396	2,086	1,915	1,926	1,721	1,444
4. Number of irregular flights										
Total	No of flights	2	1,244	861	820	740	876	1,064	855	718
Arrival		N.A.	654	455	423	383	452	537	435	357
Departure		N.A.	590	406	397	357	424	527	420	361
5. Cargo load										
Total	metric tons	530	1,328	1,840	1,227	724	889	1,250	1,401	1,157
Arrival		N.A.	499	657	526	310	352	474	392	397
Departure		N.A.	828	1,184	701	414	537	776	1,009	759

Source: AAI

Note 1: The airport was fully opened in March 2009.

Note 2: Data for FY2016 is up to December 2016.

ii. Afforestation

Afforestation activities ended between FY2003 and FY2007. Forest Department of Maharashtra (FDM) provided the survival rates shown in the table below. The survival rates were generally satisfactory with 90-95% in FY2006 and 65-83% in FY2010.

Table 11: Survival Rates of Planted Trees

Unit: %

Indicators	Plantation area (ha)	Actual										
		FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
		-	Completion of plantation work	-	-	-	-	-	-	Completion Year	1 Year After Completion	2 Years After Completion
1. Along viewpoint road and behind caves												
Balapur, Wasi, and Pipaldari	35	90	88	85	82	80	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Lenapur	30	90	88	85	82	79	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2. Near Visitor Centers												
Ajanta	208	95	90	88	85	83	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Thana	286	94	91	88	84	80	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Anad	17	91	83	79	72	68	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
3. Hills visible from Aurangabad – Phulbari												
Chowka & Phulbari	25	90	85	80	79	75	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
4. Areas visible from roads / tourism spots												
Daulatabad and surroundings	1,436	90	82	78	70	65	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Source: FDM

Note: Data after 2011 were not provided by FDM.

3.3.2 Qualitative Effects (Other Effects)

(1) Improvement of monument conservation skills

Through the implementation of the project, many experts from abroad came to provide on-site technical advice and training on conservation, preservation and restoration activities. The site management plan of the Ajanta Caves and Ellora Caves was formulated based on the outputs of the project, and is well reflected and integrated into daily work. The ASI staff publish papers in international academic journals on the conservation of monuments, and these have become internationally well known. ASI representatives say that the knowledge and awareness among ASI staff of international standards of conservation has improved compared to before the project.

It can be concluded, from the above, that the conservation skills which the project has helped develop are improving.

(2) Improvement of the quality of visitor services at the VCs and the utilization of tourism resources

Under the project, VCs were planned and constructed for the benefit of visitors at both caves in the fierce heat of 45 degrees Celsius in summer, as well as to deal with the need for a major restriction of admission to protect the monuments. The canteens and restaurants in the facilities, however, were not operational until the time of the ex-post evaluation due to the delay in the selection of outsourcing contractors. It was expected that the shop spaces of the facilities would be used by local residents who run businesses connected with heritage, but there has been no date set for occupancy. The audio guide installed to enhance the understanding of visitors has never been used because of the need to avoid losses.

According to the interview conducted with MTDC, there had been no cooperation from ASI in the operation of the VCs at the time of ex-post evaluation, and MTDC was therefore making its own efforts. Curators are being recruited to approach visitors directly to enhance their knowledge about the monuments (as opposed to visitors merely observing the exhibition). However, it has proved difficult to find appropriate staff. The organization of events, etc., is being discussed, but this also has not yet been realized.

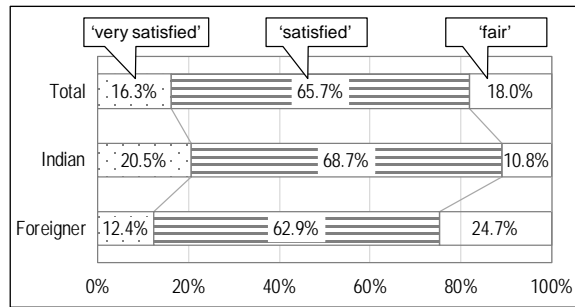


Source: Taken by Evaluator (December 2016)

Photo 3: School pupils visiting Ellora Visitor Center

From the above it can be seen that the VCs are not necessarily used effectively to fulfill the original aim to its maximum degree. There are rooms for improvement in many aspects.

The result of the beneficiary survey, on the other hand, shows a high evaluation of VCs by the visitors (Figure 2). Among the 172 tourists who actually visited the VCs, 28 (16.3%) responded “very satisfied,” and 113 (65.7%) “satisfied,” meaning about 80% found the center satisfactory.



Source: Beneficiary Survey
 Note: Effective numbers of Indians and Foreigners are 83 and 89. 172 in total

Figure 2: Evaluation of Visitor Centers

For Indian tourists in particular, about 20% of the valid respondents (17) reported “very satisfied” and about 70% (57) “satisfied.” It is assumed that the VCs have a high significance for Indians as it gives them an opportunity to learn the history of the monuments.

There is a possibility that the satisfaction rate would improve further if the plans and ideas of MTDC, including oral guiding by curators, the updating and exchange of exhibitions, or organization of events, were actualized in the future.

(3) Enhancement of the value of archaeological monuments centering around the Ajanta and Ellora Caves as tourist destinations

The result of the beneficiary survey demonstrates a relatively high evaluation in comparison with representative archaeological sites in India as well as a high overall evaluation as a tourist destination. The intention of visitors to revisit or to recommend to others is also high. It is considered that the tourism value of monuments centering around the Ajanta and Ellora Caves is high, and that this is an effect of the outputs of the project. The concrete meaning of this is explained below.

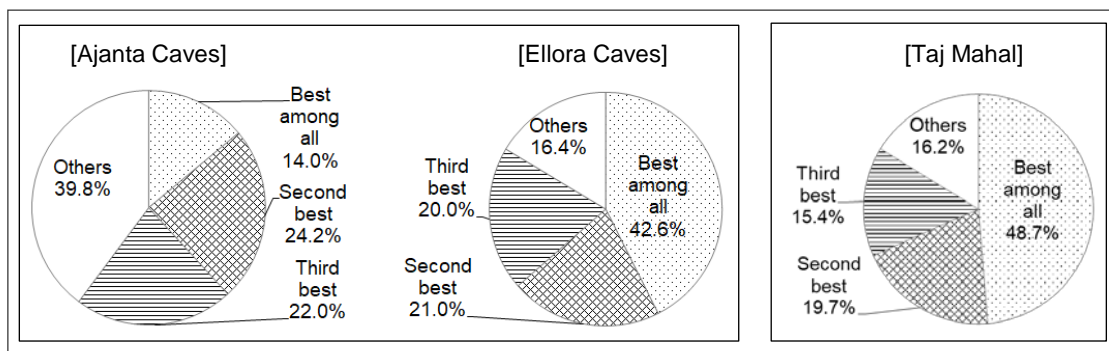
- Relative evaluation in comparison with representative cultural sites in India

Asked about “the best archaeological site,” “the second best site,” and “the third best site” among the 24 World Heritage Sites²⁰ actually visited, the highest percentage of people

²⁰ 24 World Heritage Sites listed as choices were as follows: Ellora Caves (Maharashtra State) , Ajanta Caves (ditto), Chhatrapati Shivaji Terminus (Former Victoria Terminus Station) (ditto), Elephanta Caves (ditto), Taj Mahal (Uttar Pradesh), Agra Fort (ditto), Fatehpur Sikri (ditto), Qutub Minar and its monuments (Delhi), Red Fort Complex (ditto) , Humayun’s Tomb (ditto), Churches and Convents of Goa (Goa), Archaeological sites of Nalanda Mahavihara (Nalanda university) (Bihar), Mahabodhi Temple of Bodh Gaya (ditto), Group of Monuments at Hampi (Karnataka), Group of Monuments at Pattadakal (ditto), six hill forts (Rajasthan), Group of Monuments at Mahabalipuram (Tamil Nadu), Great Living Chola Temples (ditto), Khajuraho Group of Monuments (Madhya Pradesh), Buddhist Monuments of Sanchi (ditto), Rock Shelters of Bhimbetka (ditto), Champaner-Pavagadh Archaeological Park (Gujarat), Rani-ki-Vav (The Queen’s Stepwell) at Patan (ditto), Sun Temple, Konarak (Orissa).

chose the Ajanta Caves, Ellora Caves and the Taj Mahal. The number of people who had visited the Ajanta Caves, Ellora Caves and the Taj Mahal were 186, 195 and 117 respectively (multiple responses) .

Among the 186 visitors to the Ajanta Caves, the percentage of respondents who responded that the “Ajanta Caves were the best site” (14.0%: 26 respondents) was small in comparison of those of the Ellora Caves (42.6%: 83 respondents out of 195 and the Taj Mahal (48.7%: 57 respondents out of 117). However, the Ajanta Caves appeared often in “the second best” and “third best” category (24.2% (45 respondents out of 186) and 22.0% (41 respondents)), meaning that about 60% of visitors evaluated them highly. Of the 195 visitors to the Ellora Caves, on the other hand, the total percentage of people responding “the best,” “the second best,” “the third best” (83.6%: 163 respondents) compares favorably with India’s representative monument, the Taj Mahal (83.8%: 98 respondents out of 117), which demonstrate people’s appreciation of the Ellora Caves (Figure 3).



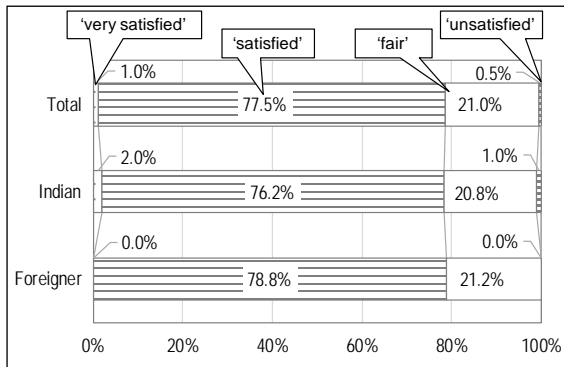
Source: Beneficiary survey

Figure 3: Relative evaluation in comparison with other cultural sites visited in the past

- Overall evaluation as tourist destinations

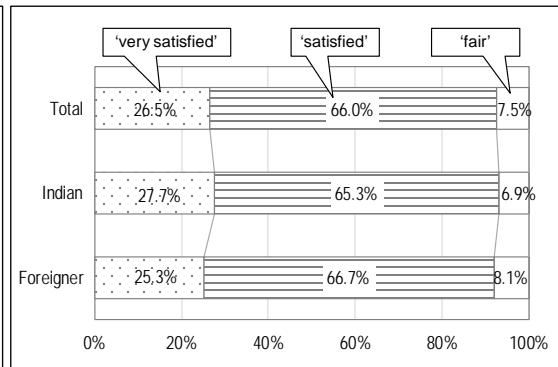
A little less than 80% of the respondents (157 respondents out of 200: 78.5%) said they were “very satisfied” or “satisfied” as their overall evaluation of the Ajanta Caves and Ellora Caves as tourist destinations (Figure 4).

When asked to specify the high points, the highest assessment was given to the monuments themselves, including cave murals, constructions, sculptures, etc. (Figure 5). More than 90% (185 respondents) responded “very satisfied” (53 respondents: 26.5%) or “satisfied” (132 respondents: 66.0%). The Ellora Caves in particular tended to have an even higher satisfaction rate both among Indians (“very satisfied” (20 respondents: 39.2%), “satisfied” (30 respondents: 58.8%) and foreigners (“very satisfied” (17 respondents: 34.0%), “satisfied” (32 respondents: 64.0%).



Source: Beneficiary Survey

Figure 4: Overall evaluation of the Ajanta and Ellora Caves



Source: Beneficiary Survey

Figure 5: Evaluation of murals, architecture and sculptures of the Ajanta and Ellora Caves

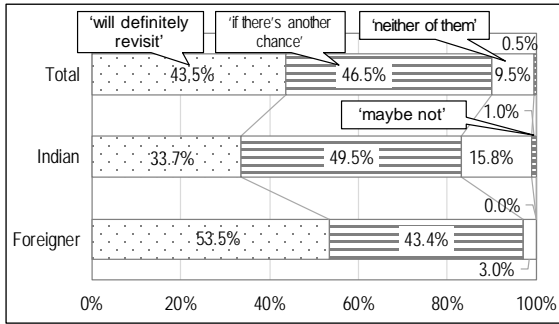
As to the infrastructure, 82 out of 108 valid respondents (79.5%) said they were either “very satisfied” or “satisfied.” A total of 168 respondents (84.0%) said they were “very satisfied” or “satisfied” about the scenery around the Caves.

Among the components of the project, the protection and preservation of the Ajanta and Ellora Caves, the airport facility development and improvement of the surrounding natural environment were also implemented under the first phase. From the results of the questionnaire survey it is impossible to differentiate clearly between the contribution of the first phase and the project. The high evaluation given to both Caves as a tourist attraction shows the contribution of both projects in protecting and repairing the murals and sculptures. The high evaluation of the airport and the surrounding scenery, by 80% of respondents, seems to have contributed to the high overall evaluation of the tourist destinations.

- Desire to revisit or to recommend

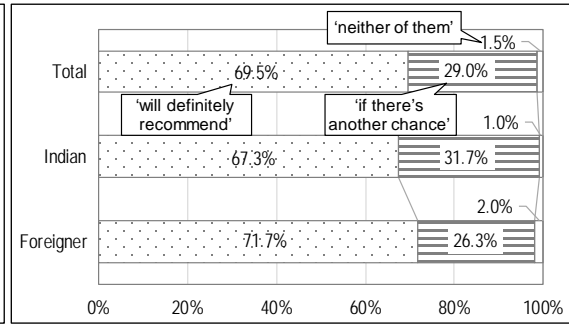
A strong desire to revisit the Ajanta Caves and Ellora Caves was observed with 180 respondents out of 200 (90.0%) responding that they either “will definitely come back” or “will come back if there is an opportunity” (Figure 6). The trend was more evident among foreigners with 53 people (53.5%) responding “will definitely come back.”

A very strong desire to recommend the Caves was also observed with 197 respondents out of 200 (98.5%) saying that they would “definitely recommend the visit to others ” or “will recommend if there is an opportunity” (Figure 7).



Source: Beneficiary Survey

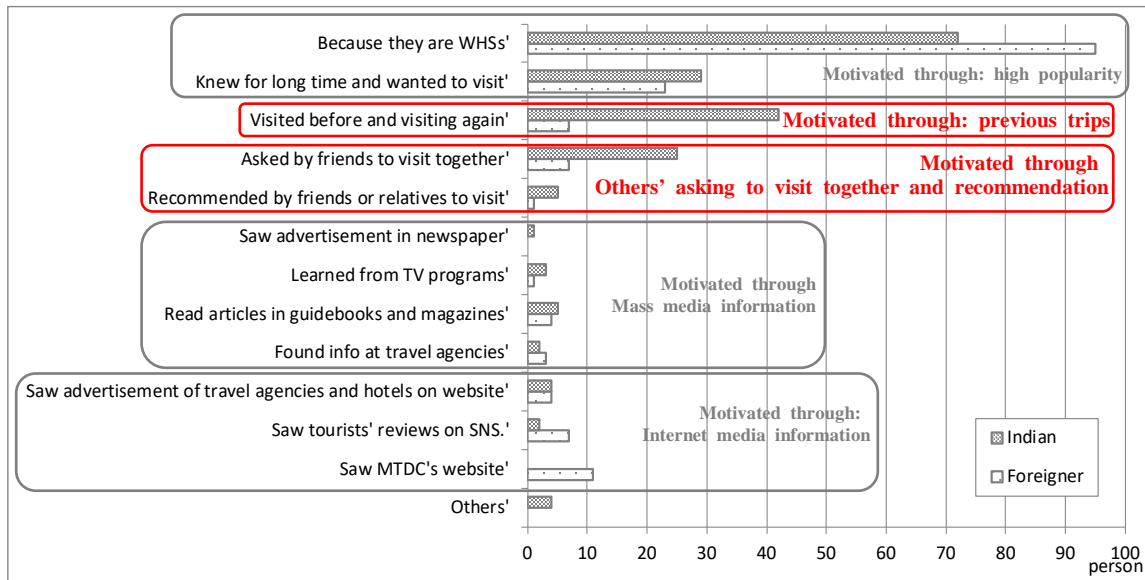
Figure 6: Desire to revisit the Ajanta and Ellora Caves



Source: Beneficiary Survey

Figure 7: Desire to recommend visiting the Ajanta & Ellora Caves

The beneficiary survey identified tourists who were indeed revisiting or those invited by friends and acquaintances, especially among Indians (Figure 8).



Source: Beneficiary Survey

Note: multiple answers from beneficiary survey targets (200 respondents).

Figure 8: Reasons for the visit to the Ajanta Caves and Ellora Caves

As to the reason for the visit of the Ajanta Caves and Ellora Caves, 167 responded “because it is World Heritage” and 52 responded that they “knew about them and wanted to come”. These answers demonstrate that the high reputation of the destination is a motive for visitors. Meanwhile, 49 people (42 Indians and 7 foreigners) said they “have been here before and am visiting again”, 32 people (25 Indians and 7 foreigners) said that they had been “invited by friends or acquaintance”, and 6 people (5 Indians and 1 foreigner) said that they had come when “recommended by someone close”²¹. Past experience is a factor in the

²¹ Many of the Indian repeat customers are from Maharashtra State, with a total of 23 (16 out of 26 residents from

motivation for some, while recommendation and invitation seem to motivate others.

3.4 Impacts

3.4.1 Intended Impacts

Qualitative analysis was conducted to review the contribution of the project to the promotion of regional development, mainly based on the results of the interviews with tourism service providers (local souvenir shops, tourist guides, the hotel industry, local business circles). It was difficult to obtain statistical data of the socioeconomic situation in the Aurangabad district.

It was confirmed that the combination of monument protection, comprehensive tourism development, and infrastructure development under the project had contributed to vitalization of the local economy including the enhancement of business opportunities, an increase of employment opportunities, improvement of convenience for tourists, an expansion of tourism related industry, an increase in business travelers, the promotion of industrial parks, etc.

Particularly notable results were the securing of job opportunities in the hotel industry, an increase in demand and opportunity for tourist guides, an increase in business opportunities for local souvenir shops, an increase in the volume of land and air traffic, an increase in the demand for carriers such as taxis, etc. It is said that the project is contributing to the promotion of industrial parks, the garment industry, the car industry, and the construction industry (Table 12).

Table 12: Results of Beneficiary Survey (Detailed Interviews)

Interviewee	Responses
Local souvenir shops	<ul style="list-style-type: none"> ✓ Demand for local souvenir shops and tourist guides increased, which in turn increased both competition and business opportunities in general. ✓ The increase in demand for local souvenir shops and tourist guides also contributed to the vitalization of the hotel industry and increased local business opportunities.
Hotel Industry	<ul style="list-style-type: none"> ✓ Employment opportunities were secured for both locals and outsiders. ✓ Thanks to the vitalization of the tourism industry, the number of visitors increased. Tourists now have a greater choice. Hotel services and facilities are gradually being improved as the competition becomes intense. ✓ As the airport facilities were improved, the number of tourists and business visitors increased, especially foreigners. If flight connections were improved, the number would increase even more. ✓ Road development expanded to the road between the Ajanta Caves, Ellora Caves and other tourist destinations. This made the smooth driving possible, made the traffic easier and faster, and as a result increased the number of vehicles and the volume of land transport. These are leading to better effectiveness in tourism and business. ✓ Infrastructure development improved business significantly. Local businesses are increasing investment and promoting local employment.

Maharashtra interviewed at the Ajanta Caves and 7 out of 12 residents from Maharashtra interviewed at the Ellora Caves are repeat customers). This suggests that repeat visits by the local residents are contributing to the increase in visitors. Among 7 foreigners, on the other hand, 3 were from Thailand and they form the biggest group.

Interviewee	Responses
Tourist guides	<ul style="list-style-type: none"> ✓ As the number of tourists has increased, there are more job opportunities than before. ✓ One comment was that “I am gaining professional knowledge and language skills through the training on the archeological sites in and around Aurangabad. I want to further improve the quality as a tourist guide and expand the opportunity (hope to learn multiple languages)”.
Local business circle	<ul style="list-style-type: none"> ✓ Because of improvement of airport facilities, both tourists and business customers increased. If flight connections were improved, the number would increase even more. ✓ As the roads were developed, the traffic volume increased. There is more mobility and better time efficiency. This is contributing to the vitalization of five industrial parks, the garment industry and the car industry in the suburbs of Aurangabad. ✓ The construction industry has also benefited from the infrastructure development.
Travel Industry	<ul style="list-style-type: none"> ✓ Road access improved and the number of both business travelers and tourists increased. Road access must be further improved. ✓ Improvement of the airport facilities is boosting the local business development. ✓ Travel by air makes travel time shorter. The use of taxis from the airport is also on increase. ✓ Infrastructure development is slowly encouraging investment by business travelers. Economic development is observed.

Source: Responses from beneficiaries

3.4.2 Other Positive and Negative Impacts

(1) Impacts on the Natural Environment

The project mainly aimed at protecting cultural heritage. It included expansion of the airport and roads, but not on a large scale. As an impact on the natural environment was not foreseen at the time of planning, the project was rated “category B” according to the “JBIC Environmental Guidelines for ODA Loans” (October 1999 version) that was applicable at the time of appraisal²². Indian laws and regulations did not mandate environmental clearance for road and airport development where the total project cost did not exceed one billion rupees. There was no obligation for an environmental impact assessment or forest clearance.

In the detailed design process of project implementation, environmental impacts were predicted, however, and environmental protection measures were put in place to avoid, minimize and mitigate them. These practical measures are shown in the following table.

²² According to the guideline, “Category B” projects are defined as those who do not belong to “Category A” (large, new and rehabilitation projects, projects implemented in, or which may affect a specific area, and projects with certain characteristics (projects expected to have a wide, diverse and irreversible environmental impact, projects affecting a large number of inhabitants, projects consuming a large amount of non-renewable natural resources, projects resulting in the occurrence of a significant change in land use or the environment, projects causing the generation or involving the disposal of a large amount of hazardous and/or toxic wastes)) or those with a less remarkable environmental impact than a Category A project.

Table 13: Anticipated Impacts on the Natural Environment and Environmental Mitigation Measures

No.	Project component		Adverse impact anticipated on the Natural Environment	Environmental Mitigation Measures
1	Afforestation	Tourists facility (Nature Trail)	It was planned that these would be installed in the Gautala Wildlife Sanctuary, and therefore an impact on the environment was anticipated.	From the point of view of environmental protection, the plan was abandoned.
2	Water Supply	Water Supply to Ajanta View Point Facilities	It turned out that developmental activities were prohibited in the forests around the Ajanta Caves, and it was necessary to obtain forest clearance.	Forest clearance was obtained through official procedures, and the facility was put in place as planned.
3	Roads	Development of an approach road to the Satkund-Pitalkhora Caves	As a part of the road passed the wildlife reserves, FDM raised an objection.	The road was constructed avoiding the said area. (the total length became 300m shorter.)

Source: provided by JICA

Environmental monitoring since implementation has not been conducted by the implementing agencies, and there are no environment related reports. No negative impact on the natural environment after the implementation of the project was seen, either in the consultation with each implementing agency or in the results of the beneficiary survey carried out in this ex-post evaluation.

(2) Land Acquisition and Resettlement

There was no resettlement or land acquisition for the implementation of the project.

In summary, the number of tourist visitors to the main caves and temples exceeded the target, and there was an improvement in preservation skills for the target monuments of the project. The value as the tourist destinations of the monuments centered around the Ajanta and Ellora Caves was confirmed and enhanced. The duration of tourist overnight stays did not reach the target, but this was because a shorter period of stay became possible as a result of more efficient itineraries, shorter travel time, improved access to other tourist destination, etc. achieved through infrastructure development under the project. It does not, therefore, mean a reduction in tourists or a decline in the tourism industry. It was not possible to obtain data on the expenditure of tourists. On the other hand, although the VCs constructed near the Ajanta Caves and Ellora Caves were conceived as comprehensive tourism development facilities centered around heritage tourism, the number of visitors remains far below the target. The reviews of visitors to the centers however are nonetheless very good, so it is considered that they have a high significance. It is hoped that their value be reevaluated and measures for improvement be considered and put in place.

As to impact, a contribution to the vitalization of the local economy including tourism related industries was identified. The combination of monument protection, comprehensive tourism development and infrastructure development conducted under the project led to an increase in business opportunities and employment opportunities in the project target area. The convenience of tourists was also improved. Other tourism related industry boomed and the number of business customers increased. Vitalization of industrial parks is also noticeable. No negative impact of the project on the natural environment was identified. There was no land acquisition and resettlement under the project.

The project has achieved its objectives to some extent. Therefore the effectiveness and impact of the project are fair.

3.5 Sustainability (Rating: ③)

3.5.1 Institutional Aspects of Operation and Maintenance

The institutions that are in charge of the O&M of each project component are listed in the table below (Table 14).

Table 14: Project Components and their O&M Institutions

No.	Project Components	O&M Institutions	Remarks
1	Ajanta Caves, Ellora Caves, Pitalkhora Caves, Aurangabad Caves, Bibi-Ka-Maqbara, Daulatabad Fort, Daityasudana Temple and Patnadevi Temple (archaeological monuments managed at national level)	ASI	Central government organization (head office: Delhi)
2	Ajanta Visitor Center and Ellora Visitor Center	MTDC	Maharashtra State Organization (head office in Mumbai)
3	Soneri Mahal, Delhi Gate, Makai Gate, and Bhadkhal Gate (state archaeological monuments managed at state level)	DAM	Maharashtra State Organization (head office: Mumbai)
4	Aurangabad Airport	AAI	Central government organization (head office: Delhi)
5	Afforestation (seven sites: about 2,000ha)	FDM	Maharashtra State Organization (head office: Mumbai)
6	Road improvement (two sections: 38.55km in total)	PWD	Maharashtra State Organization (head office: Mumbai)
7	Water supply facilities improvement (two sites)	MJP	Maharashtra State Organization (head office: Mumbai)

Source: Developed by the Evaluator based on the relevant documents and answers to questionnaires by the executing agencies

Note: MOT, which was the representing executing agency of the project has not played any role in O&M after project completion.

The structure and staffing for the O&M for each project component are shown in Table 15. The local office of each executing agency has the role and responsibilities for the O&M function. There is no institutional problem for O&M with the staff currently available.

Table 15: Organization and Staffing of Operation and Maintenance Institutions

	O&M Institution	Institutional arrangements and staff allocation
1	ASI	Director (Conservation), who works under the Director General at Delhi Head Office, manages monument conservation throughout the nation. The Aurangabad Circle is located in the city, where superintending archaeological engineers are deployed and taking care of archaeological sites managed under national level. Site offices are created for large-scale monuments such as the Ajanta and Ellora Caves, where 50 engineers and technical staff reside for O&M works. The Aurangabad Circle directly manages smaller-scale sites, to which they send their staff on demand.
2	MTDC	VCs are supervised by the Regional Manager of Aurangabad, and there is no permanently assigned staff at the VCs. Staff from MTDC facilities near both VCs go every day to check on O&M issues. There are about 70 staff of the outsourced contractor who do daily O&M activities such as apparatus operation and uncomplicated repair, cleaning, etc.
3	DAM	Deputy Director in based in Aurangabad Office. An assistant director in charge of archaeology and an assistant curator lead the assigned staff members to manage the project target facilities.
4	AAI	An office is placed at Aurangabad Airport. Under the Director are the sections in charge of air traffic control, communication, fire prevention, engineers (civil work and electricity), human resources, finance and commerce. Each section has experts.
5	FDM	Aurangabad District Forest Office is in charge of the O&M of the project component. Under the District Conservator of Forests based in the district office, field level staff are hired, including Range Forest Officers, Foresters, and Forest Polices, to conduct regular patrols of the forest and carry out other operational and maintenance activities.
6	PWD	Aurangabad District Office is in charge of the O&M of the road developed under the project. The O&M is conducted by a chief technician for Aurangabad District, who, in return, manages superintendent engineers and operation engineers.
7	MJP	Aurangabad District Office is in charge of the O&M of the supply facility developed under the project. For the O&M, specialists are assigned at the Aurangabad District Office, who manage site engineers.

Source: Produced by the Evaluator based on the results of questionnaires filled out by each institution and consultations.

3.5.2 Technical Aspects of Operation and Maintenance

The technical strength of the O&M institutions is verified as follows. In all institutions, the quality of O&M skills is secured by staff members with relevant qualifications, expertise and experience. There is, therefore, no problem in this aspect.

Table 16: Skills of each operation and maintenance institution

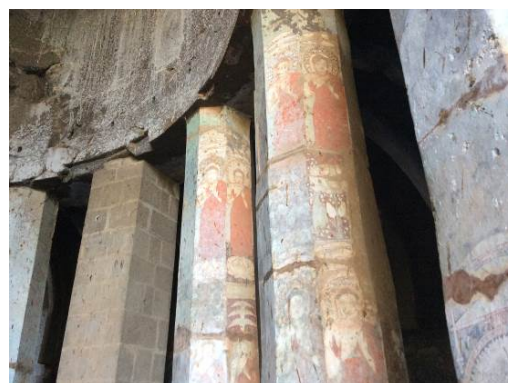
	O&M Institution	Skills
1	ASI	At the Ajanta Caves and Ellora Caves, protection and conservation activities are carried out according to an annual implementation plan which is based on the site management plan. At other monuments, they are carried out in line with the National Policy of Conservation. As a function of the Aurangabad Circle, there is a lab for protection and conservation, which hosts training as required with national-level experts of National Environmental Engineering Research Institute, Indian Institute of Technology, and other institutes as instructors. It has a high reputation abroad, and trainees are sent from Sri Lanka and Middle Eastern countries to learn monument protection and conservation skills. Staff members attend symposiums, international conferences and training in and out of the country. Their academic papers often appear in international journals and enjoy an international reputation. All technical experts and staff go through a performance evaluation annually to review their skills on a regular basis.
2	MTDC	O&M is carried out by signing an annual O&M contract with a provider that satisfies the eligibility requirements and requirements for technical skills.
3	DAM	Technical training, including monument conservation training, is conducted once a year in Delhi or within the State. The training systems and O&M manual are in place, to be implemented or used as needed.
4	AAI	In line with the international standards of the aviation bureau, the technical level is maintained by the staff members with relevant expertise and experience.
5	FDM	Forest management is carried out by technical officers. As the training system and O&M manual are in place to be implemented or used as needed, there are no issues in this aspect.
6	PWD	Quality management of technical skills is carried out by qualified technical offices with expertise and experience.
7	MJP	Based on the manuals and guidelines, quality control is carried out by technical officers who have qualifications in electricity and water supply system O&M. Annual technical skills training is carried out.

Source: Produced by the Evaluator based on the results of questionnaires filled out by each institution and consultations.



Source: Taken by Evaluator (December 2016)

Photo 4: Conservation Work at the Ajanta Caves



Source: Taken by Evaluator (December 2016)

Photo 5: Pitalkhora Caves

3.5.3 Financial Aspects of Operation and Maintenance

(1) Archaeological monuments managed at national level (ASI)

The three-year trend of the O&M budget versus the actual of the target monuments of the project is seen in the table below. ASI reports that there are no financial constraints in the carrying out of the current activities.

Table 17: O&M budget versus actual of the target monuments of the project

Unit: million rupees

	FY2014	FY2015	FY2016
Budget	50.45	38.54	42.55
Actual Expenses	48.92	36.42	5.34

Source: Information provided by ASI

Note: Actual Expenses of FY2016 is up to December 2016.

(2) Two visitor centers (MTDC)

No admission fees have been collected since their opening in September 2013, and no income that was expected originally. The O&M cost amounts to 7.7 million rupees annually for both centers, but budget allocation by Maharashtra State Government is carried out without delay. MTDC manages this fund.

(3) Archaeological monuments managed at Maharashtra State level (DAM)

Even though the practical figure was not obtained, Maharashtra State Archaeological Museum Bureau reported that budget allocation by the state government is carried out without delay. It is verified that there are no financial difficulties.

(4) Aurangabad Airport (AAI)

The actual cost of the O&M for Aurangabad Airport between FY2013 and FY2015 is shown in the table below. AAI reports that the current budget is sufficient.

Table 18: Actual cost of the O&M for Aurangabad Airport

Unit: million rupees

	FY2013	FY2014	FY2015	FY2016
O&M Cost	26	44	46	N/A

Source: Information provided by AAI

Note: The actual cost of FY2016 was not obtained.

(5) Afforestation (FDM)

The actual expenses of the O&M between FY2008 and FY2012 are shown in the table below. In FY2013, there was no separate budget allocation for this component of the project. Instead, the cost was included in the general O&M budget together with that for other forests. No budget shortage is reported.

Table 19: Actual cost of the O&M for planted trees

unit: million rupees

	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016
O&M cost	26	44	46	1.9	1.2	N/A	N/A	N/A	N/A

Source: Information provided by FDM

Note: There was no actual data for years between FY2013 and FY2016

(6) Roads (PWD)

The actual figure was not obtained, but PWD reported that budget allocation by the state government is carried out without delay. No financial issue, therefore, was identified.

(7) Water Supply (MJP)

As to the Ajanta Water Supply Scheme, the information below is verified. The annual cost of the Ellora Water Scheme is 1.8 million rupees. No budget shortage is reported.

Table 20: Actual cost of the O&M for Ajanta Water Supply Scheme

Unit: million rupees

	FY2013	FY2014	FY2015	FY2016
Budget	1.8	1.8	1.8	2.4
Actual expense	1.2	1.44	1.68	2.16

Source: Information provided by MJP

In conclusion, a specific budget for O&M is allocated annually without delay by the central government as well as the Maharashtra State Government. As at ex-post evaluation, there were no financial constraints for O&M.

3.5.4 Current Status of Operation and Maintenance

The current status of the O&M for each project component is verified as below. All components are operated and maintained by staff members who have qualifications, expertise and experience. It can be concluded that there is no specific problem in the status of O&M.

Table 21: Status of Operation and Maintenance

	Project component	Status as of the ex-post evaluation
1	Ajanta Caves, Ellora Caves, Pitalkhora Caves, Aurangabad Caves, Bibi-Ka-Maqbara, Daulatabad Fort, Patnadevi Temple, Daityasudana Temple (Archaeological sites managed at national level)	Works are carried out in line with the annual action plan based on the site management plan at the Ajanta and Ellora Caves. As to other cave temples, monument protection and repair work based on UNESCO guidelines are carried out. At the Ajanta Caves, Ellora Caves, Pitalkhora Caves and Aurangabad Caves, falls of upper conglomerate sometimes happen due to extreme weather, but the measures are put in place as this happens. The equipment and the spare parts for monument conservation can be procured domestically as an annual maintenance contract is in place.
2	Two visitor centers	O&M of the facilities is properly carried out by the outsourced contractor and the facilities are in good condition. There is no change or update on the exhibitions and the contents of the audio sets.
3	Soneri Mahal, Delhi Gate, Makai Gate, Bhadkhal Gate (Archaeological sites managed at Maharashtra State level)	All state monuments are properly operated and maintained by staff who have expertise and experience.
4	Aurangabad Airport	It is properly operated and managed by staff with relevant expertise and experience. The operational status has been generally satisfactory since the full opening in March 2009.

	Project component	Status as of the ex-post evaluation
5	Afforestation (About 2,000 ha in seven locations)	Survival rates of planted trees as at FY2010 was between 65% and 83% and was generally satisfactory. Data was not obtained for the status after FY2011. No withering or dead trees were visually found at the time of site observation in December 2016.
6	Road development (38.55km over 2 sections)	Information was not provided by PWD.
7	Water Supply Facilities (two locations)	The facilities are operated and maintained without any problem of supply by qualified technical officers with expertise and experience. It was difficult to collect data on the current operational state (population served, etc.) as the water supply was at each tourist spot.

Source: Consultation in the field survey, and the responses to the questionnaire by each institution

To summarize, no major problems were observed in the institutional, technical, financial aspects and the current status of the O&M system. Therefore the sustainability of the project effects is high.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The project was intended to promote the tourist industry by monument conservation, holistic tourist development and infrastructure development, thereby contributing to the enhancement of regional development.

The relevance of the project is high as project implementation was consistent with the development policy and development needs of India both at the time of appraisal and ex-post evaluation, as well as with the ODA policy of Japan at the time of appraisal. There were major modifications to the outputs of the project, including the abandonment of some components and a reduction of the target area. The actual cost of the project was within the planned cost. The project period, however, went well beyond the plan as consensus building among stakeholders and various approval processes became complicated, requiring more time for progress management and coordination. The efficiency, therefore, is fair.

The preservation and conservation works at the target archaeological monuments were carried out with the advice of the Panel of Experts both within and outside the country. Skills in preservation and conservation were thus improved. The value of the archaeological monuments centered around the Ajanta and Ellora Caves as tourist destinations was confirmed and improved, and the number of tourist visitors at major caves in the project area exceeded the target. The average duration of stay did not reach the target, but this was mainly due to the infrastructure development under the project, which led to an improvement in tourist accessibility and efficiency in travel time. In other words, this does not represent a reduction of tourists or a decline in the tourism industry. Data on tourism revenue was not obtainable. The number of visitors at the Visitor Centers built near the Ajanta Caves and Ellora Caves was rather less than the target. The actual visitors to the centers, on the other hand, rated them highly, and it can be concluded that the value of their existence is high. The area, however, does not

function well enough as a comprehensive tourism development facility as was originally expected, and there is room for improvement in terms of the quality of service for visitors and the use of tourism resources. It was confirmed that the combination of archaeological monument protection, comprehensive tourism development and infrastructure development under the project contributed to vitalization of the local economy including enhancement of business opportunities, an increase in employment opportunities, an improvement in convenience for tourists, expansion of tourism related industries, an increase in business travelers, promotion of industrial parks, etc. There was no negative impact on the natural environment by the project, nor were there land acquisition and resettlement. In sum, the implementation of the project generated positive effects to some extent. The effectiveness and impact of the project are fair.

As to sustainability, there are no issues concerning the operation and maintenance management of the project in terms of the institutional, technical, financial aspects and current status of the operation and management, and the sustainability of the effects of the project is high. In light of the above, the project is evaluated to be satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

(1) Actions for strengthening operation of the Visitor Centers

The Visitor Centers are operating under different conditions from those that were originally presupposed in the original design. For example, they were conceived as alternative destinations for visitors to the caves when there was restricted admission. However, in fact, such restricted admission has not taken place. The centers are not located on a point to the caves. Taking these changes into consideration, it is desirable that drastic revisions be taken urgently in terms of operation policy and future direction by revising the significance of the centers, and considering changes in their roles and functions, etc.

The results of the beneficiary survey revealed that visitors to the VCs highly appreciated them. Their most important role seems to be in providing visitors with an opportunity to learn about the history of the monuments. In future, practical use of the VC facilities should be promoted with clear direction to expand the educational effect. This should include group visits of school pupils as MTDC is already making efforts to focus on educational values instead of assuming that all the Caves visitors would visit the VCs. It is strongly desired that the ideas currently being discussed be turned into actual plans and that they should be realized without fail. Ideas include the hiring of curators, the updating and changing of exhibitions, the organizing of events, etc.

As at the time of the ex-post evaluation, MTDC remained actively engaged in various promotional activities including TV promotion, newspaper advertisement, brochure

development, and organization of festivals. The need for the comprehensive tourism development in Maharashtra State remains high as improvements in quality are constantly expected in terms of effective and efficient use of existing tourist attractions, and the development of strategic and flexible marketing activities based on the analysis of tourist trends. In the efforts of strengthening operation of the VCs, it is recommended that the marketing strategy be strengthened and publicity enhanced based on the trend analysis of current visitors to the Ajanta Caves and Ellora Caves.

4.2.2 Recommendations to JICA

None.

4.3 Lessons Learned

(1) Project implementation arrangements among several relevant agencies

The project was a comprehensive tourism development project and it was implemented by seven agencies (both from central government and Maharashtra State). They were under the management of MOT as the executing agency taking full responsibility for the entire implementation. A project steering committee was established to make decisions regarding important points of discussion, annual implementation plans, etc., and to monitor work progress. It was to take measures as necessary to promote the smooth implementation of the project.

However, the above mentioned implementation system did not function effectively, and information sharing and coordination between organizations including MOT and the executing agencies were insufficient. A budget for each project component was allocated to the relevant implementing agency, but the allocation mechanism was complicated as two national-level agencies received budgets from the Ministry of Finance while five agencies from the Maharashtra State Government received budgets via the state government. As each agency was highly independent, it was difficult in practice to divert project budgets between project components. Despite the fact that certain components had a surplus in budget, the funds could not be diverted to other components. In consequence, there were instances where some activities of priority project components had to be abandoned.

As seen in this project, in a country where the state government and central government ministries have equal status, and the independence of each agency is highly protected, a project that involves agencies at different levels such as central government agencies and state government agencies needs an executing agency with a strong authority to manage and coordinate the project as a whole. For example, the Ministry of Finance, with budget management authority, could be assigned as an executing agency. A project management unit (PMU) composed of representatives of each implementing agency could be established

to manage the overall project while a Project Implementation Unit (PIU) created in each implementing agency would have monitoring meetings among PIUs or between PMU and PIUs. In other words, it is recommended that such measures be taken to build a stronger system of project management as well as budget management. To support the functions of PMU and PIU in this regard, sufficient consulting services should be put in place as required.

<End>

Comparison of the Original and Actual Scope of the Project

Item	Plan	Actual
1. Project Outputs	(1) Monument conservation	
	1) Conservation of caves and temples (Ajanta Caves, Ellora Caves, Pitalkhora Caves, Aurangabad Caves, Bibi-Ka-Maqbara, Daulatabad Fort, and Patnadevi Temple)	Almost as planned
	2) Development of the Site Management Plan for each archaeological monument	Developed for the Ajanta Caves and Ellora Caves only
	3) Development of the Annual Implementation Plan for each archaeological monument	As planned
	4) Organization of the Panel of the Experts meetings (six times in total)	As planned
	5) Site record and archive management system, improvement of monitoring system and human resource development	As planned
	(2) Comprehensive tourism development	
	1) Tourist complexes (Ajanta Visitor Center and Ellora Visitor Center)	As planned
	2) Public awareness activities (TV and press, public relations, interpretation films, leaflets, posters and brochures)	As planned
	3) Human resource development (training of tourism staff, training for middle cadre staff of MTDC, training for supervisors and frontline staff, development of training centers and software)	Training centers and software were not development. Others were implemented as planned.
	4) Computerization of tourist information (computerization in MTDC headquarters at Mumbai, regional offices, and tourist centers, hardware at tourist destinations and software development)	As planned.
	5) Poverty reduction and regional development through microcredit	Not implemented.
	6) Loner conservation and development (pathways for circulation, fencing work, establishment of site museums and information centers, ticketing booths, and parking facilities, restoration and conservation of Daityasudana Temple, buffer plantations)	Restoration and conservation of Daityasudana Temple and buffer plantations were implemented.
	7) State archaeological monuments around Aurangabad City (Soneri Mahal, Delhi Gate, Makai Gate, Bhadkhal Gate, Bani Begun Garden and Anwa Temples)	Conservation works for Bani Begun Garden and Anwa Temples was not implemented. Others were implemented as planned.
	8) Additional subprojects in vicinity of caves (Elephanta Caves, river front development of Nasik Ghat, development of Malshej Ghat, Tikona Fort, Tunga Fort, Visapur Fort, Lohgahd Fort, Shivneri Fort and Rustic Valley)	Not implemented.
	(3) Infrastructure development	
	1) Improvement of Aurangabad Airport New construction of passenger terminal building (domestic: 11,000m ² , and international: 7,300m ²), new apron facilities (new apron 500 feet X 400 feet and new taxiway), extension of runway by 1,500 feet	Almost as planned
	2) Afforestation i. Plantation works at ten sites for 1,878ha in total (Along the Ajanta viewpoint road and behind the caves (99ha in total), near the Ajanta Visitor Center (339ha in total), hills visible from Aurangabad (859ha in total), areas visible from	i. Plantation works at seven sites for 2,000ha in total

Item	Plan	Actual
	<p>roads / tourism spots and along roads (Daulatabad and surrounding areas, approach to the Pitalkhora Caves: 581ha in total))</p> <p>ii. Information and maintenance (erection of fire towers, fire line cutting, firefighting equipment, promenade walks, and display cards on trees)</p> <p>iii. Tourist facility at Gavatala (drinking water, camping & accommodation facilities, establishment of protection & signage structures, establishment of nature trails and watch towers, and establishment of nature interpretation centers)</p> <p>iv. Others (AV equipment, etc.)</p>	<p>ii. Information and maintenance: as planned</p> <p>iii. Tourist facility at Gavatala: not implemented.</p> <p>iv. Others: AV equipment, computer and purchase</p>
	<p>3) Improvement of roads</p> <p>i. Roads to the Pitalkhora Caves (two sections for 13km in total)</p> <p>ii. Roads (Ajanta – Pitalkhora Corridor: southern route) (five sections for 91.5km in total)</p> <p>iii. Approach roads from other entry points (two sections for 81.8km in total)</p> <p>iv. Approach road to tourism resources (1.82km)</p> <p>v. Approach road to Lonar Crater (43.2km)</p> <p>vi. Construction of new Aurangabad city ring road (27.8km)</p>	<p>i. Road to the Pitalkhora Caves (one section for 9.7km)</p> <p>ii. Not implemented.</p> <p>iii. Approach road from other entry point (one section for 28.85km)</p> <p>iv. Not implemented.</p> <p>v. Not implemented.</p> <p>vi. Not implemented.</p>
	<p>4) Water supply at tourist attractions Construction of water supply facilities at Ellora Caves, Ajanta viewpoints, Mahadeva Temple at Anwa, Shiva Temple at Ambhai, Antur Fort and Parion Ka Talao</p>	<p>Water supply facilities at Ellora Caves (store volume: 20,000 liters) and Ajanta viewpoints (store volume: 30,000 liters and water treatment) were constructed as planned. Those at Mahadeva Temple, Shiva Temple, Antur Fort and Parion Ka Talao were not implemented.</p>
	(4) Consulting Services	
	<p>i. Detail design</p> <p>ii. Preparation of pre-qualification documents</p> <p>iii. Preparation of tender documents and assistance in bidding.</p> <p>iv. Review and evaluation of detailed design</p> <p>v. Assistance to the executing agencies</p> <p>vi. Construction supervision</p> <p>Foreign consultants: six personnel (57M/M), Local consultants: 17 personnel (355M/M), 23 personnel in total (412M/M)</p>	<p>Services were extended as planned. Work volume, as much as which could be confirmed, was increased as below: Foreign consultants: 57M/M, and Local consultants: 542M/M</p>
2. Project Period	March 2003 to June 2008 (64 months)	March 2003 to April 2014 (134 months)
3. Project Cost		
Amount paid in Foreign Currency	3,009 million yen	824 million yen
Amount paid in Local Currency	12,452 million yen (5,083 million rupees)	7,398 million yen (3,180 million rupees)
Total	15,461 million yen	8,222 million yen
ODA Loan Portion	7,331 million yen	6,490 million yen
Exchange Rate	1 Rupee = 2.45 yen	1 Rupee = 2.14 yen (average during the project period)
4. Final Disbursement	April 2014	