

9 PLAN EVALUATION

9.1 SOCIO-ECONOMIC EVALUATION

The socio-economic impacts of the National Plan proposed in this report are assessed partly based on the results of the economic and social impact analyses (see Appendixes for the economic and social impact analyses).

i) Economic growth and promoting culture and tradition

The National Plan is expected to improve the quality of the country's tourism which will increase visitor arrivals and visitor nights, thereby benefiting the society by increasing tourism earnings, increasing production of tourism related industries, increasing employment opportunities, and promoting culture and tradition (Figure 9.1.1).

ii) Improving profitability of the tourism industry

The improved quality of Tunisian tourism and reduced seasonality of tourism businesses to be brought by implementing the National Plan will enhance profitability of the tourism industry, particularly that of hotels (Figure 9.1.2).

- The improved quality will lead to the increase in higher-paying visitors, thereby increasing the revenue per tourist.
- Reduced seasonality will increase revenues during middle and low seasons.

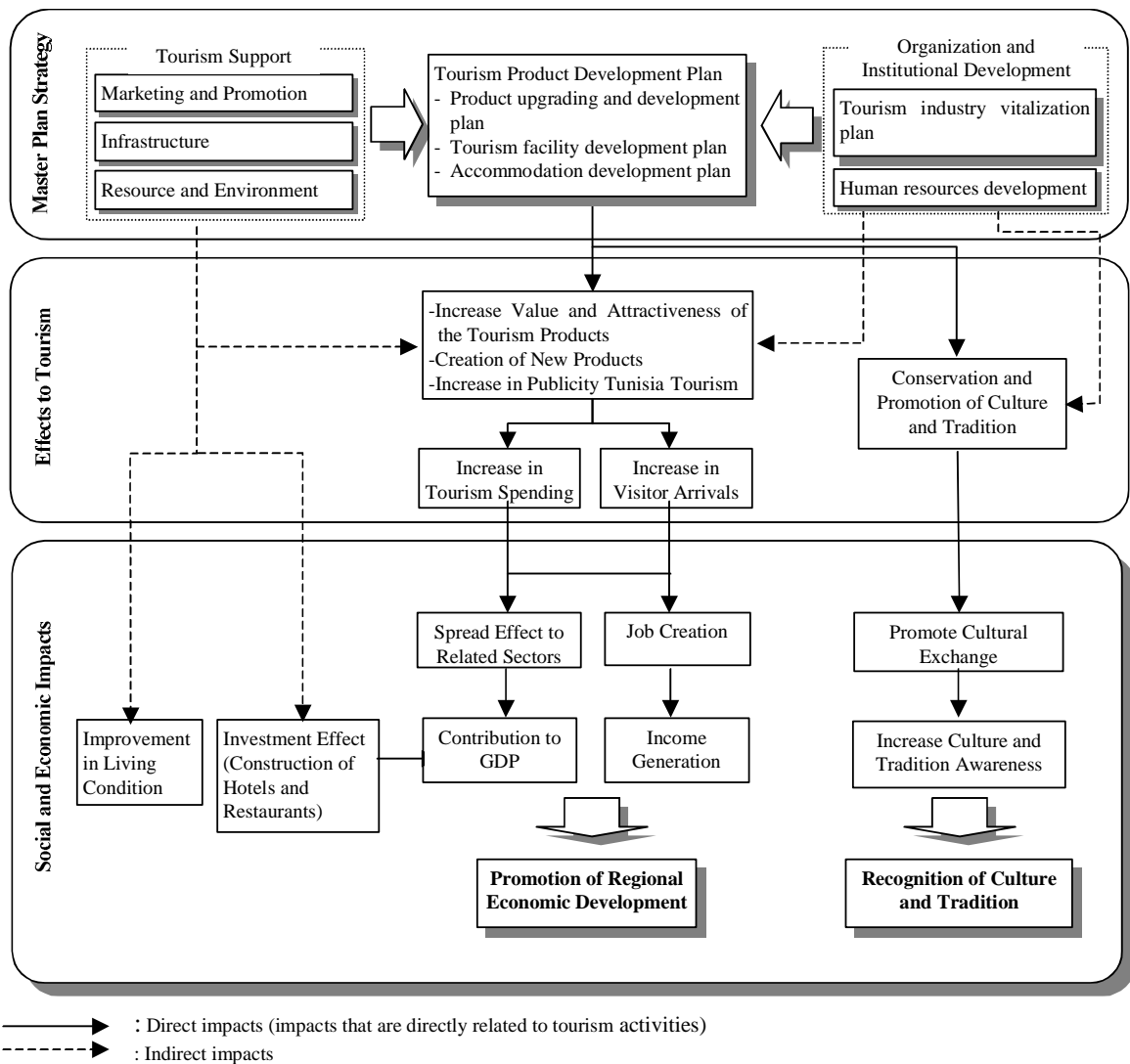
iii) Regional development

By further promoting cultural and Saharan tourism, benefits are expected to be brought to inland areas, thereby contributing to more equitable geographic distribution of income.

iv) Cultural exchange

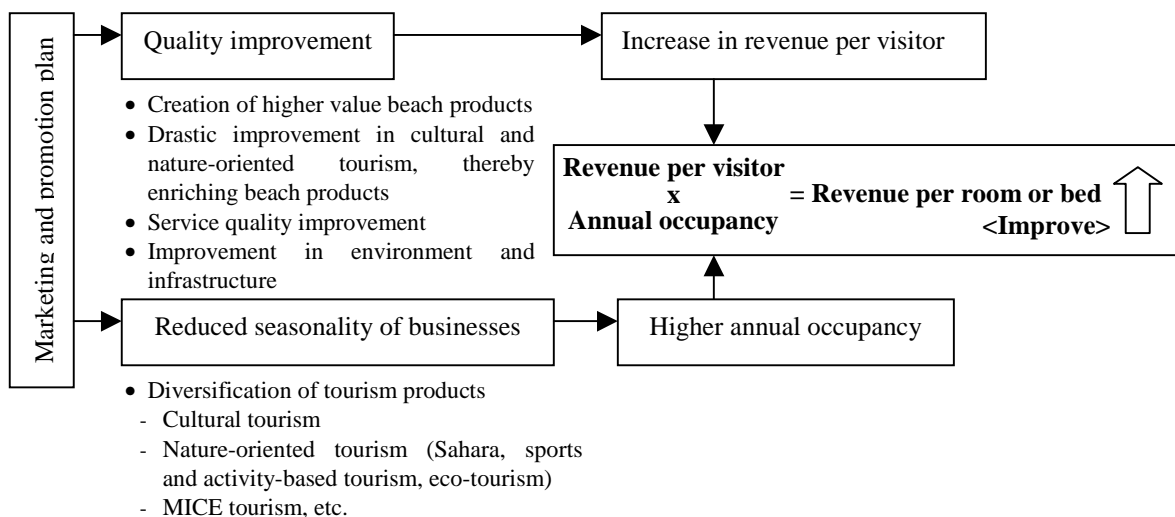
Other positive impacts including cultural exchange between local people and tourists are also expected to be further promoted by implementing the plan.

Figure 9.1.1 Economic and Social Impacts of the National Plan



Source: JICA Study Team

Figure 9.1.2 Improving Profitability of the Hotel Industry



Source: JICA Study Team

9.1.1 Expected Economic Impacts of National Plan Implementation

(1) Increase in Tourism Earnings

One major effect of implementing the proposed National Plan is the increase in tourism earnings that will result from the following:

- Increment in foreign visitor arrivals between with and without the implementation of the National Plan (the difference between Scenario A and Scenario B)
- Increment in tourism earnings per visitor between with and without the implementation of the National Plan, resulting from the overall quality improvement of Tunisian tourism.

Regarding the second point, Tunisia's tourism earnings per visitor are currently substantially lower than those for other Mediterranean countries, even so excluding the visitors from the Maghreb countries (see Section 2.3). The proposed National Plan will significantly improve the quality of Tunisian tourism, through drastic improvements in cultural, Sahara and nature-based products, efforts to create higher value beach products, globalizing the hotel industry, human resources development, and improvement in environment and infrastructure. These improvements, if successfully implemented, will undoubtedly bring drastic upward change in the image of the country's tourism, thereby leading to a gradually higher level of spending per tourist.

It is reasonably expected that with the implementation of the National Plan, tourism earnings per visitor (excluding the visitors from the Maghreb countries) would increase at least to the current level for Morocco over a 15-year period (2002-2016), though possibly not so much as those for Turkey, Greece or Egypt. In view of these, it is projected that for Scenario A, the *real* value of tourism earnings per visitor arrival will rise at an average rate of 1.5% per year in 2002-2016, while no *real* increase is assumed for Scenario B.¹

Tables 9.1.1 and 9.1.2 show the projection of tourism earnings for Scenario A and Scenario B respectively. The increment to be achieved under Scenario A (relative to that for Scenario B) results from the combined effect of the higher growth in tourist arrivals and the expected gradual increase in tourism earnings per visitor.

It should be noted that the projection is conducted in real terms and that all the projected tourism earnings are measured at 1999 prices.

Note also that the average tourism earnings per visitor arrival will rise even for Scenario B due to the shift of composition of visitors toward a higher proportion of Europeans and tourists from other regions who tend to spend substantially higher than those from the Maghreb countries.

¹ All the projected figures in this section are in real terms, and inflation is not considered. Therefore, the rate of increase in the projected figures can be compared, on the equal basis, with the real growth of GDP.

Table 9.1.1 Projection of Tourism Earnings: Scenario A

Year	Foreign visitor arrivals by source region (thousand arrivals)				Tourism earnings per visitor arrival (TD per visitor arrival)				Tourism earnings by source region** (million TD: at 1999 prices)			
	Europe	Maghreb	Others	Total	Europe	Maghreb	Others	Average*	Europe	Maghreb	Others	Total
1999	3,461	1,263	108	4,832	497	135	597	404	1,720	170	65	1,954
2000	3,686	1,263	111	5,060	497	135	597	409	1,832	170	66	2,068
2001	3,926	1,263	114	5,303	497	135	597	413	1,951	170	68	2,189
2002	4,132	1,294	121	5,548	504	137	606	421	2,084	177	73	2,334
2003	4,349	1,327	129	5,804	512	139	615	429	2,226	184	79	2,490
2004	4,577	1,360	137	6,074	520	141	624	437	2,378	191	85	2,655
2005	4,817	1,394	145	6,357	527	143	633	446	2,541	199	92	2,832
2006	5,070	1,429	154	6,653	535	145	643	454	2,714	207	99	3,021
2007	5,306	1,471	166	6,943	543	147	652	462	2,883	217	108	3,208
2008	5,552	1,516	178	7,246	552	149	662	470	3,062	226	118	3,406
2009	5,810	1,561	191	7,562	560	152	672	478	3,252	237	128	3,617
2010	6,080	1,608	205	7,892	568	154	682	487	3,454	248	140	3,842
2011	6,362	1,656	220	8,238	577	156	692	495	3,669	259	152	4,080
2012	6,635	1,714	236	8,585	585	159	703	503	3,884	272	166	4,322
2013	6,920	1,774	253	8,947	594	161	713	512	4,112	286	180	4,578
2014	7,217	1,836	272	9,325	603	163	724	520	4,352	300	197	4,849
2015	7,527	1,900	291	9,719	612	166	735	529	4,607	315	214	5,137
2016	7,850	1,967	313	10,130	621	168	746	537	4,877	331	233	5,442

Note: * Average tourism earnings were calculated from total tourism earnings and total number of foreign visitor arrivals.

** The projected tourism earnings are the amount in real terms measured at 1999 prices.

Source: JICA Study Team

Table 9.1.2 Projection of Tourism Earnings: Scenario B

Year	Foreign visitor arrivals by source region (thousand arrivals)			Tourism earnings per visitor arrival (TD per visitor arrival)			Tourism earnings by source region** (million TD: at 1999 prices)			
	Europe	Maghreb	Others	Europe	Maghreb	Average*	Europe	Maghreb	Others	Total
1999	3,461	1,263	108	497	135	404	1,720	170	65	1,954
2000	3,686	1,263	111	497	135	409	1,832	170	66	2,068
2001	3,926	1,263	114	497	135	413	1,951	170	68	2,189
2002	4,087	1,282	119	497	135	414	2,031	173	71	2,275
2003	4,255	1,301	125	497	135	416	2,115	175	75	2,364
2004	4,430	1,320	131	497	135	418	2,202	178	78	2,457
2005	4,613	1,340	137	497	135	419	2,292	180	81	2,554
2006	4,802	1,360	143	497	135	421	2,386	183	85	2,655
2007	4,964	1,381	150	497	135	422	2,467	186	90	2,742
2008	5,132	1,401	158	497	135	423	2,550	189	94	2,833
2009	5,305	1,422	167	497	135	425	2,636	192	99	2,927
2010	5,483	1,444	176	497	135	426	2,725	194	105	3,024
2011	5,668	1,465	185	497	135	427	2,817	197	110	3,124
2012	5,840	1,487	195	497	135	428	2,902	200	116	3,219
2013	6,017	1,510	205	497	135	429	2,990	203	122	3,316
2014	6,200	1,532	216	497	135	430	3,081	206	129	3,416
2015	6,388	1,555	227	497	135	431	3,174	209	136	3,519
2016	6,581	1,579	239	497	135	432	3,270	213	143	3,626

Note: * Average tourism earnings were calculated from total tourism earnings and total number of foreign visitor arrivals.

** The projected tourism earnings are the amount in real terms measured at 1999 prices.

Source: JICA Study Team

For Scenario A, the amount of annual tourism earnings is projected to increase from TD1,954 million in 1999 to TD3,021 million in 2006, TD4,080 million in 2011, and to TD5,442 million in 2016, all measured at constant prices. These projections represent an average annual growth rate of 6.7% per year in 2001-06, and 6.3% per year in 2001-16.

Note the following points regarding the projection (for Scenario A) in the 10th National Plan period:

- The projected growth in the 10th Plan period is higher than that in recent years. The “nominal” value of tourism earnings increased at an average annual rate of 8.2% per year in 1994-99 and 9.8% per year in 1993-99 (Note: the average rate of increase varies somewhat depending on the periods taken for the calculation, but is about 10% per year in recent years). During this period, general price level rose as well; for example, consumer price index rose at an average rate of 3.9% per year in 1994-99 and 4.0% per year in 1993-99. Taking this into account, the “real” value of tourism earnings increased at a rate averaging about 6% per year (= 10% - 4%), which is lower than the projected rate of increase.²
- The projected real increase in tourism earnings results from the growth of visitors and the increase in tourism earnings per visitor (with the latter coming from the increase in spending of each tourist and the shift in the composition of tourists toward non-Maghrebeans). The increase in spending of each tourist should come from a wide range of efforts for quality improvement as proposed in the study.
- One main theme running through this study is the need for enhancing quality, whether for beach resorts, cultural sites, Sahara, or MICE, which should be seriously pursued at all levels of the concerned bodies public or private, thereby raising the “unit price” of tourism services as projected.³

(2) Cost-Benefit Analysis

If implemented as set forth in this National Plan, the various components plans would bring about significant benefits to the Tunisian people in terms of their economic well-being, of their social development, and in terms of its environmental sustainability. The tourism industry would play a central role,

² The increase of this extent in recent years is reflected fairly well in the statistics of GDP by sector. As shown in A2.1.3 (Volume III), the total value added for hotels, cafes and restaurants (in real terms) increased at an average growth rate of 5.0% per year in 1994-99, approximately equal to the rate of real GDP growth in the same period (5.2% per year). Consequently, the share of hotels, cafes and restaurants in GDP was more or less unchanged over this period. Note that the difference in growth rate between tourism earnings and the value added may be partly due to the inclusion of non-tourism activities in the value added, e.g., cafes and restaurants not quite relevant to tourism, and the difference in the period taken.

³ The Study Team believes that the need for better quality of Tunisian tourism should be strongly emphasized not only in the plan of ONTT and MTLA, but also in the national economic planning. For example, forecasting tourism earnings based mainly on the physically oriented indicators (e.g., visitor arrivals, visitor nights) would not be appropriate for the development of Tunisian tourism in the years to come. Doing so might incorrectly orient the industry to focusing largely on capacity expansion without paying much attention to quality. This would lessen the sector’s competitiveness in the international marketplace, which is apparently undesirable for the economy in the long run.

providing additional lodging capacity as well as other services to meet the needs of tourists.

In order to quantitatively assess the economic impact of implementing the National Plan, cost-benefit analysis was conducted. Although this analysis would involve a great deal of uncertainty attributed mainly to a lack of quantitative relationship between the National Plan implementation and the increment in foreign visitor arrivals (i.e., the difference between Scenario A and Scenario B),⁴ it is worthwhile to attempt this assessment, which can at least provide a crude magnitude of the plan's impact in quantitative terms.

The cost-benefit analysis was conducted under the following assumptions:

(Assumptions)

- Incremental tourism earnings are assumed to be the economic benefit or incremental value added, i.e., the difference in tourism earnings between Scenario A and Scenario B.
- For the public sector projects and programs, the cost for all the components plans was included, along with operating and maintenance costs that are assumed to equal 8% of the initial costs.
- Private investment that will additionally be required with the implementation of the National Plan needs to be considered. In this analysis, the amount of hotel investment (which should be by far the largest among all the tourism-related investments) was included, taking the difference in the amount of investment between Scenario A and Scenario B. Hotel operating cost associated with this incremental investment was also included, which is estimated at TD 5.67 thousand per bed a year, based on the hotel financial and operating statistics and assuming that the operating cost will increase by 10% from the recent level in order to provide better quality services.
- In view of the need for various other types of private investment for meeting the incremental growth of tourists (e.g., restaurants, other types of entertainment to be privately undertaken, agriculture, food processing, transportation, etc.), 70% of tourism earnings were taken as the economic benefit in order to avoid underestimating costs or overestimating benefits.
- This factor of 70% was assumed, considering the following: (i) hotels earned revenues amounting to about 64% of the total tourism earnings (according to the 1996 statistics), and this percentage of the incremental tourism earnings can be included in the benefit; (ii) the contribution of the estimated public expenditure on hotel revenues should be included in this 64%; (iii) the contribution of the public expenditure on other sectors (i.e., the extent to which the rest, which is 36% of the incremental tourism earnings, is attributed to the public expenditure) is assumed to equal the amount of tax earned by the government, with the tax ratio assumed at

⁴ As described in Chapter 5, Scenario A is set to be the one that is considered attainable with the implementation of the National Plan, in consideration of various other factors described in Chapter 5.

20%.⁵ The factor of 70% comes from the following: $64\% + 36\% \times 0.2$, which is about 70%.

- Inflation is not considered for both benefits and costs, and all the figures are in teal terms.

Table 9.1.3 shows the cost and benefit streams over the period 2002-2016. The economic internal rate of return (EIRR) for the implementation of the National Plan is estimated at 16.8%, which substantially exceeds the opportunity cost of capital that is often assumed at about 12%. While the analysis is for assessing a crude magnitude of the impact of the proposed component plans, it can be expected that the proposed component plans would bring significant net benefits to the Tunisian economy.

Table 9.1.3 Cost-Benefit Analysis for National Plan Implementation

Year	Cost							Benefit	Net Benefit	
	Public sector projects and programs				Incremental hotel costs*					
	Implemented in 2002-2006		Implemented in 2007-2016		Total	Incremental investment	Incremental operating costs			Total
	Initial cost	O&M cost	Initial cost	O&M cost						
2002	41	0	0	0	41	80	13	94	42	-93
2003	41	0	0	0	41	86	27	113	88	-66
2004	101	0	0	0	101	92	42	134	139	-97
2005	122	15	0	0	136	98	58	157	195	-98
2006	101	24	0	0	126	105	75	180	256	-50
2007	0	32	40	0	72	161	98	259	326	-6
2008	0	32	40	0	72	170	122	292	401	37
2009	0	32	100	0	132	180	147	327	483	24
2010	0	32	119	14	166	190	174	363	572	43
2011	0	32	100	24	156	200	202	402	669	111
2012	0	32	40	32	104	211	231	441	772	227
2013	0	32	40	35	107	221	261	482	883	294
2014	0	32	100	38	170	233	293	525	1,003	308
2015	0	32	119	46	198	244	326	570	1,132	364
2016	0	32	100	56	188	256	361	617	1,271	466

EIRR = 16.8%

Unit: TD million

Note: * Incremental hotel cost (both investment and operating costs) is the cost to be additionally incurred for Scenario A beyond that for Scenario B. Note that the amount of investment actually needed in each year will be significantly larger than these figures.

Source: JICA Study Team

(3) Profitability of Hotel Investment

In the analysis above, it was estimated, though preliminarily, that implementing the National Plan would bring significant net benefits for the economy as a whole. At the same time, the National Plan is expected to have a positive effect on hotels,

⁵ Due to lack of relevant data, this tax ratio is assumed to equal the ratio of total amount of tax earned by the government to GDP, which is approximately 20% in recent years (see section 15.3.6 in Volume II for the tax ratio).

the largest player in Tunisian tourism, primarily in two ways:

- The improved quality will lead to the increase in higher-paying visitors, thereby increasing the revenue per tourist.
- Reduced seasonality will increase revenues during middle and low seasons.

In order to quantitatively assess the profitability of hotel investment, return on investment (ROI) was estimated for the hotel investment needed to be made in the period 2002-2006 under Scenario A (with the National Plan case). The following assumptions were used:

(Assumptions)

- The capacity to be added in 2002-2006 is in line with the projection of accommodation capacity made in section 5.4.
- The reduction in seasonality of hotel businesses is factored into the analysis as targeted in the projection of the accommodation capacity (see section 5.4).
- The unit investment cost is assumed to be TD 45,000 per bed based on the recent investment cost for 3-5 star hotels.
- The operating cost is estimated based on the hotel financial data obtained from ONTT. It is assumed that the operating cost will increase by 10% from the recent level in order to provide better quality services.
- Revenue per visitor night is assumed to increase at an average rate of 1.5% per year (in real terms) in line with the quality improvement in the country's tourism as assumed for tourism earnings per visitor arrival in the cost-benefit analysis above. The average revenue per visitor night (at the beginning of year 2000) is estimated at TD 35.7 per visitor night, based on the hotel financial statistics in 1996 obtained from ONTT⁶ and converting the 1996 figures to the values in 2000 using the consumer price index.
- Inflation is not considered for both revenue and cost, and all the figures are in real terms.

As shown in Table 9.1.4, the return on investment (ROI) is estimated at 16.2%, which is not very high but is encouraging. As suggested by this result, Tunisia should make efforts (as proposed in this study), attempting to reduce seasonality of its tourism businesses and improve quality thereby increasing the spending per tourist, so that tourism will be profitable not only for the economy as a whole but also for the hotel industry, a major player in the country's tourism businesses.

⁶ The reason for using the 1996 data is that the sample size of hotels that submitted more recent financial results to ONTT is too small.

Table 9.1.4 Return on Hotel Investment in 2002-2006

Year	Revenue	Investment cost	Operating cost	Cash flow
2002	95	380	47	-332
2003	196	396	96	-296
2004	303	412	147	-255
2005	418	428	200	-211
2006	539	446	255	-162
2007	548	0	255	292
2008	556	0	255	301
2009	564	0	255	309
2010	573	0	255	317
2011	581	0	255	326
2012	590	0	255	335
2013	599	0	255	344
2014	608	0	255	353
2015	617	0	255	362
2016	626	0	255	371
2017	635	0	255	380
2018	645	0	255	390
2019	655	0	255	400
2020	664	0	255	409
2021	674	0	255	419

ROI = 16.2%

Unit: TD million

Source: JICA Study Team, hotel financial data obtained from ONTT

Currently, the industry heavily relies (about 80% of the invested capital) on the long-term borrowing from development banks, at interest rates averaging about 13% per year. Given this condition, the above return may not be high enough, taking account of the risk involved (with a payback period normally being about 8 years). There are however good signs of environmental change. The restructuring and globalization of the financial industry that will be undergoing in the country is expected to bring competition to the financial sector, thereby tending to bring down the financial costs. Under this competitive and more market-based environment, financially strong performers (hotels) will be able to secure finances at lower costs, and in order to gain this strength, reducing seasonality and quality improvement will be critically important.

9.1.2 Employment Creation

The impacts on employment measured by the number of jobs are expected to be significant as well.

Employment creation is estimated from the projected visitor arrivals and hotel capacity. Employment for the hotels is based on the bed capacity by category, which is used as the base for the employment for restaurants. Employment in other sub-sectors (tourism sites, indirect employment) is estimated by the future visitor arrivals.

Conditions for estimating the employment are summarized below.

- Employment for hotels: The employment/bed ratio is expected to increase slightly from the present level of 0.358⁷ to 0.364 in the future due to the increase in the share of three star hotels and decrease in two star and one star hotels as projected.⁸ Hotel employment for Scenario A is estimated multiplying the projected bed capacity (Volume I: Chapter 5 Demand Projection) by the expected employment/bed ratio (0.364). For Scenario B, the present level of employment/bed ratio (0.358) is used.
- Employment for restaurants: Employment for restaurants is estimated by using the ratio (0.22) of restaurant employees to those employed by hotels.⁹ The same ratio was used for both Scenario A and Scenario B.
- Employment for other tourism sub-sector (travel agencies, tourism sites) and indirect employment are estimated based on the current number of employment for each category (estimated in A2.3 Impact on Employment in Volume III) and by increasing them in proportion to the number of visitor arrivals for Scenario A and Scenario B.
- Employment for handicraft: It is conservatively assumed that the National Plan has little impact on the size of this type of employment *per se*, considering that approximately equal number of craftsmen would be able to produce souvenirs and handicrafts to be bought by tourists even in the future after receiving adequate training proposed in the National Plan.

The impact of the National Plan is estimated as shown in Table 9.1.5. In 2016, 77,500 extra employment is required after implementing the National Plan.

⁷ This is obtained by dividing the number of hotel employment (68,637) by total bed capacity (191,955) in 1999.

⁸ The ratio of 0.364 is obtained from the composition of hotels by category projected in section 5.4.3 as well as the present distribution by category.

⁹ This ratio is obtained by dividing the employment for restaurants (15,159) by hotel employment (68,637).

Table 9.1.5 Estimates of Impacts of National Plan Implementation on Employment

	1999	2006	2011	2016
<i>Scenario A</i>				
Direct employment	90,216	119,511	145,719	173,146
Hotel	68,637	90,714	110,470	130,891
Restaurants	15,159	19,957	24,304	28,796
Other tourism	6,420	8,839	10,945	13,459
Indirect employment	233,737	298,109	354,138	421,019
Tourism related sector	79,993	110,139	136,379	167,701
Consumption for non tourism operation	65,495	90,178	111,661	137,306
Tourism related investment	25,321	34,864	43,169	53,084
Handicraft	62,928	62,928	62,928	62,928
Total employment	323,953	417,619	499,857	594,164
<i>Scenario B</i>				
Direct employment	90,216	113,259	136,650	156,814
Hotel	68,637	85,969	96,415	106,609
Restaurants	15,159	18,913	21,211	23,454
Other tourism	6,420	8,377	9,724	11,159
Indirect employment	233,737	285,807	321,651	359,829
Tourism related sector	79,993	104,378	121,165	139,044
Consumption for non tourism operation	65,495	85,461	99,205	113,844
Tourism related investment	25,321	33,040	38,354	44,013
Handicraft	62,928	62,928	62,928	62,928
Total employment	323,953	399,066	458,301	516,643
Increment	0	18,553	41,556	77,522

Source: JICA Study Team

9.1.3 Social Impacts

Implementation of the National Plan will contribute to maximizing the people's expectation (positive impacts) from the tourism and minimizing the negative impacts presently existing. Social impacts of the National Plan are expected to enhance cultural awareness, employment creation, and living condition improvement

(1) Cultural awareness

The strategy of the National Plan, creation of symbolic attractions and diversification of products, focuses more on the development of a cultural aspect of tourism including Islamic culture, Sahara culture and Berber culture, which will have positive impacts on Tunisia's culture and tradition by providing opportunities to conserve and promote them through proper management and presentation. Cultural tourism will also increase the cultural exchange between the local people and tourists, particularly in Southern villages, which eventually increase the recognition of Tunisian culture and tradition to the world and lead to the increase in the pride of the local people.

(2) Employment creation and security

Development of cultural tourism will also create more jobs directly related to tourism activities and also secure employment (less seasonal employment) by attracting more tourists in middle and low seasons. Since inland areas have few other promising industries, the impacts of tourism development will bring the full benefits to the people in inland areas (e.g., Tozeur and Matmata) where the benefits of the tourism have been limited so far.

(3) Living condition improvement

Another social impact is expected from the environment aspect of the tourism development including wastewater treatment in Medinas and some inland areas and solid waste management in Medinas. These measures not only provide a comfortable tourism environment but also improve living condition of the local people.

Road improvement also improves the living condition in inland remote areas by providing access to nearby urban centers and easing traffic congestion in major city centers. Parking construction will also ease the traffic congestion in city centers around Medinas (e.g., Tunis, Hammamet, and Sousse), which would positively affect the daily activities of the people (accident, noise, and air pollution).

9.1.4 Overall Socio-Economic Impacts

Potential impacts of the National Plan are assessed according to each of the six component development plans: 1) Tourism Product Development Plan, 2) Tourism Resource and Environment Preservation Plan, 3) Marketing and Promotion Plan, 4) Tourism Industry Vitalization Plan, 5) Human Resource Development Plan, and 6) Infrastructure Development Plan. Overall impacts of National Plan were summarized as follows.

(1) Tourism Product Development Plan

- Cultural Products
- Saharan Products
- Natural-Based Products
- Accommodation
- Other Measures

This plan is aiming at attracting tourists by providing a variety of quality tourism products, which will contribute to increasing tourist expenditures. Therefore, the expected direct impacts mainly include income generation and employment creation, and the social conditions are generally expected to improve in areas these development will take place.

(2) Tourism Resource and Environment Preservation Plan

- Urban-Related Measures
- Natural Environment

This plan is aiming at preserving specific and unique resources of Tunisia, and enhancing its attractiveness. Therefore, its contribution to the socio-economic conditions may include improvement of social conditions in the urban areas, and indirect income generation with the use of value added cultural and natural tourism resources.

(3) Marketing and Promotion Plan

- Measures for Improved Marketing
- Measures for Improved Promotion and Information Delivery
- Measures for Building Differentiated Images

This plan aims at directly increasing foreign visitors to Tunisia. Therefore, the expected direct impacts mainly include income generation and employment creation in all the tourist destinations and gateways.

(4) Tourism Industry Vitalization Plan

- Measures for the Lodging Industry
- Measures for Other Industries
- Measures for Public Entities

The purposes of this plan are to vitalize the tourism industry and improve the efficiency of its circumstances. Therefore, the expected socio-economic impacts will be indirect incremental income.

(5) Human Resource Development Plan

This type is considered as capacity building for the both public and private sectors associated with the tourism industry, expected to contribute to improved service quality and effectively implementing the National Plan. Positive effects expected from this plan include enhancing tourist satisfaction and improving performance and profitability of tourism-related industries. Potential impacts on the economy and the society at large are expected to result in the later stage of the implementation of the plan.

(6) Infrastructure Development Plan

- Tourist Transport Related Measures
- Other Types of Measures

This plan aims at improving effectiveness of the tourism products and services development plans. In this respect, these plans tend to be complementary though essential to bring the full benefits of the first type of plans. Thus the impacts that would result tend to be indirect (though their extent is expected to be large) rather than direct. Some projects may have positive direct impacts such as infrastructure development that could lead to the improvement in living conditions.

All plans may have some social impacts, large or small. Negative impacts on the society (if any) could be minimized by attempting to implement the National Plan to a full scale, thereby achieving a satisfactory level of employment and income generation, as well as by taking measures to promote cultural exchanges between local people and tourists. It is also recommended that measures should be taken to achieve benefit distribution across regions which is considered appropriate from a social point of view.

Expected impacts of the proposed National Plan are summarized in Table 9.1.4.

Table 9.1.6 Expected Social and Economic Impacts of the Proposed National Plan

Component Plans	Economic impact	Social impact
1 Tourism Product Development Plan	<ul style="list-style-type: none"> - Promote regional economic development as a whole - Direct impact on employment creation and income generation by attracting more tourists - More income generation at cultural sites and souvenir shops (Carthage, Kairouan, Tozeur) - Increase in tourist expenditure 	<ul style="list-style-type: none"> - Enhance the value of the historical heritage and culture - Facilitate cultural exchange - Promote participation in tourism activities
2 Tourism Resource and Environment Preservation Plan	<ul style="list-style-type: none"> - Increase in the economic value of property - Direct impact on employment and income by diversifying the products and tourism areas - More employment and income generation at restaurants, shops, cultural sites and attractions - Promote regional economic development as a whole 	<ul style="list-style-type: none"> - Enhance the value of the historical heritage and culture - Facilitate cultural exchange - Promote participation in tourism activities in different regions
3 Marketing and Promotion Plan	<ul style="list-style-type: none"> - Employment creation and income generation in the low season, at specific sites, for specific purpose (MICE) and in communication services sector by increased number of tourists 	<ul style="list-style-type: none"> - Promote participation in tourism activities
4 Tourism Industry Vitalization Plan	<ul style="list-style-type: none"> - More stable income throughout the year as well as more employment and income - Promote regional economic development as a whole - Direct impact on employment creation and income generation in hotel and non-hotel businesses - Better hotel management 	<ul style="list-style-type: none"> - Promote participation in tourism activities - Capacity building of government staff
5 Human Resource Development Plan	<ul style="list-style-type: none"> - Various positive impacts to be brought by enhanced tourist satisfaction through provision of quality services and improved performance of relevant industries - Eventually increase employment and income 	<ul style="list-style-type: none"> - Capacity building of staff in tourism sector
6 Infrastructure Development Plan	<ul style="list-style-type: none"> - Creating jobs for construction work 	<ul style="list-style-type: none"> - Improving the standard of living

Source: JICA Study Team

9.2 ENVIRONMENTAL EVALUATION

9.2.1 Methodology

The proposed tourism development National Plan includes strategies and concrete measures for preservation and improvement of natural environment, preservation of tangible and intangible cultural heritage, cleaner and more beautiful urban environments, and stabilized a social environment including various ways of life in different regions. In general, the implementation of the proposed National Plan in a proper manner can bring improved environmental conditions to Tunisia.

However, although the proposed tourism development National Plan aims at preserving and valorizing Tunisia's environment, impacts generated by various activities related to the Plan cannot be ignored. It is extremely important to carefully examine possible negative and positive impacts before the implementation of each measure.

The Study Team evaluated environmental impacts of the components of the proposed National Plan by using the following two different methods:

- 1 An Initial Environmental Examination (IEE) according to each type of tourism development or tourism related activity based on the JICA Environmental Guidelines.
- 2 An examination of the carrying capacity of Tunisia's coastal areas in terms of tourist zone development.

9.2.2 Initial Environmental Examination (IEE)

The Study Team conducted an Initial Environment Examination (IEE) of each type of tourism development and tourism-related infrastructure development proposed in the National Plan.

The examination was made according to the main types of development activity, based on the data and information collected, and the result of field surveys. Then an overall evaluation in terms of the following three categories was given to each examination.

- Category A: A major impact is possible and an EIA will be required.
- Category B: A minor impact is possible and an appraisal is required in the light of the guidelines, but no formal EIA is required.
- Category C: No impact anticipated, and no EIA is required.

Among the six component plans of the proposed National Plan, the following two plans were selected for the Initial Environmental Examination (IEE), as other plans are institutional development or environmental preservation plans and apparently have no negative impacts on the environment:

(1) Tourism Product Development Plan

- 1 Beach Resort Development
- 2 Archeological and Cultural Site Development
- 3 Medina Development
- 4 Sahara and Oasis Development
- 5 Golf Course and Sports Field Development
- 6 MICE Facility Development
- 7 Accommodation Development
- 8 Entertainment and Restaurant Development
- 9 Shopping and Souvenir Development

(2) Infrastructure Development Plan

- 10 Airport Construction
- 11 Road Construction and Related Facilities
- 12 Port and Marina Construction
- 13 Water Supply for Tourism Purposes
- 14 Sewage Treatment Plant
- 15 Power Supply and Telecommunication Development

The result of the IEE is presented in Table 9.2.1.

Table 9.2.1 Result of Initial Environmental Examination (1/8)

1) Beach Resort Development

	Item	Evaluation	Remarks	
Social Environment	1	Resettlement	?	Potential for resettlement depending on the development plan.
	2	Economic Activities	++	Stimulation of local economy.
	3	Traffic and Public Facilities	--	Potential for increased traffic.
	4	Community Division	?	Depending on the location.
	5	Cultural Heritage	none	Survey required.
	6	Water Right/Commonage	?	Depending on the location.
	7	Public Health	none	
	8	Solid Waste	--	Appropriate solid waste management system required.
	9	Hazards	-	Risk of accident by increased traffic.
Natural Environment	10	Topography	?/--	Depending on the location and the development plan.
	11	Soil Erosion	?	Survey required.
	12	Groundwater	?	Survey required.
	13	Hydrological Situation	?	Survey required.
	14	Coastal Zone	--	Appropriate guidelines required.
	15	Flora and Fauna	?	Survey required.
	16	Climate	none	
	17	Landscape	-	Appropriate guidelines required.
Pollution	18	Air Pollution	none	
	19	Water Pollution	--	Appropriate control and monitoring required
	20	Soil Contamination	?	Appropriate control required
	21	Noise and Vibration	?	Depending on the location
	22	Land Subsidence	none	
	23	Offensive Odor	none	
Total Evaluation		A	Possible major or minor impact, an EIA required.	

2) Archeological and Cultural Site Development

	Item	Evaluation	Remarks	
Social Environment	1	Resettlement	?	Potential for resettlement depending on the site.
	2	Economic Activities	++	Stimulation of local economy.
	3	Traffic and Public Facilities	-	Potential for increased traffic.
	4	Community Division	?	Depending on the site.
	5	Cultural Heritage	++	Valorized heritage.
	6	Water Right/Commonage	none	
	7	Public Health	none	
	8	Solid Waste	-	Appropriate management required.
	9	Hazards	-	Risk of accident by increased traffic.
Natural Environment	10	Topography	none	
	11	Soil Erosion	none	
	12	Groundwater	none	
	13	Hydrological Situation	none	
	14	Coastal Zone	none	
	15	Flora and Fauna	none	
	16	Climate	none	
	17	Landscape	-	Appropriate management required.
Pollution	18	Air Pollution	none	
	19	Water Pollution	none	
	20	Soil Contamination	none	
	21	Noise and Vibration	none	
	22	Land Subsidence	none	
	23	Offensive Odor	none	
Total Evaluation		B	Possible minor impact, an appraisal required.	

Note: --: Major negative impact, -: Negative impact, +: Positive impact, ++: Major positive impact, ?: Not clear and further study may be required

Table 9.2.1 Result of Initial Environmental Examination (2/8)

3) Medina Development

	Item	Evaluation	Remarks	
Social Environment	1	Resettlement	?	Potential for indirect resettlement by change of land use.
	2	Economic Activities	++	Stimulation of local economy.
	3	Traffic and Public Facilities	-	Potential for increased traffic.
	4	Community Division	?	Potential by increased income gap.
	5	Cultural Heritage	++	Valorized heritage.
	6	Water Right/Commonage	none	
	7	Public Health	+	Improved sanitary condition.
	8	Solid Waste	?	Appropriate management required.
	9	Hazards	-	Risk of accident by increased traffic.
Natural Environment	10	Topography	none	
	11	Soil Erosion	none	
	12	Groundwater	none	
	13	Hydrological Situation	none	
	14	Coastal Zone	none	
	15	Flora and Fauna	none	
	16	Climate	none	
Pollution	17	Landscape	-	Appropriate management required.
	18	Air Pollution	none	
	19	Water Pollution	none	
	20	Soil Contamination	none	
	21	Noise and Vibration	-	Appropriate control and guidelines required.
	22	Land Subsidence	none	
	23	Offensive Odor	none	
Total Evaluation		B	Possible minor impact, an appraisal required.	

4) Sahara and Oasis Development

	Item	Evaluation	Remarks	
Social Environment	1	Resettlement	?	Potential for indirect resettlement by change of land use.
	2	Economic Activities	++	Stimulation of local economy.
	3	Traffic and Public Facilities	-	Potential for increased traffic at peak season.
	4	Community Division	?	Potential by increased income gap.
	5	Cultural Heritage	++	Encouragement for preservation of intangible heritage.
	6	Water Right/Commonage	?	Survey required.
	7	Public Health	+	Improved sanitary condition.
	8	Solid Waste	-	Potential for tourist litter, appropriate management required.
	9	Hazards	none	
Natural Environment	10	Topography	none	
	11	Soil Erosion	none	
	12	Groundwater	-	Potential for increased water consumption and discharge.
	13	Hydrological Situation	-	Potential for increased water consumption and discharge.
	14	Coastal Zone	none	
	15	Flora and Fauna	-	Potential for change
	16	Climate	none	
Pollution	17	Landscape	-	Appropriate guidelines required.
	18	Air Pollution	none	
	19	Water Pollution	-	Potential for increased sewer.
	20	Soil Contamination	none	
	21	Noise and Vibration	-	Potential for increased tourist traffic.
	22	Land Subsidence	none	
	23	Offensive Odor	none	
Total Evaluation		B	Possible minor impact, an appraisal required.	

Note: --: Major negative impact, -: Negative impact, +: Positive impact, ++: Major positive impact, ?: Not clear and further study may be required

Table 9.2.1 Result of Initial Environmental Examination (3/8)

5) Golf Course and Sports Fields Development

	Item	Evaluation	Remarks	
Social Environment	1	Resettlement	?	Potential for resettlement depending on the site.
	2	Economic Activities	++	Stimulation of local economy.
	3	Traffic and Public Facilities	-	Potential for increased traffic.
	4	Community Division	?	Potential by large area occupation.
	5	Cultural Heritage	?	Survey required.
	6	Water Right/Commonage	?	Survey required.
	7	Public Health	none	
	8	Solid Waste	-	Appropriate management required.
	9	Hazards	-	Risk of landslide.
Natural Environment	10	Topography	--	Careful design required.
	11	Soil Erosion	--	Careful design required.
	12	Groundwater	-	Water use for sprinkler.
	13	Hydrological Situation	-	Potential for increased water consumption. Pollution risk by chemical products.
	14	Coastal Zone	none	
	15	Flora and Fauna	--	Potential for change
	16	Climate	none	
	17	Landscape	+/-	Appropriate guidelines required.
Pollution	18	Air Pollution	none	
	19	Water Pollution	none	
	20	Soil Contamination	-	Potential for contamination by agricultural chemical.
	21	Noise and Vibration	none	
	22	Land Subsidence	none	
	23	Offensive Odor	none	
Total Evaluation		A/ B	Possible major or minor impact, an EIA required depending on the scale of development.	

6) MICE Facility Development

	Item	Evaluation	Remarks	
Social Environment	1	Resettlement	?	Depending on the site.
	2	Economic Activities	++	Stimulation of local economy.
	3	Traffic and Public Facilities	--	Potential for increased traffic, detailed survey required.
	4	Community Division	?	Depending on the site.
	5	Cultural Heritage	?	Survey required.
	6	Water Right/Commonage	none	
	7	Public Health	none	
	8	Solid Waste	none	
	9	Hazards	none	
Natural Environment	10	Topography	none	
	11	Soil Erosion	none	
	12	Groundwater	-	Potential for increased water consumption and discharge.
	13	Hydrological Situation	-	Potential for increased water consumption and discharge.
	14	Coastal Zone	none	
	15	Flora and Fauna	?	Depending on the site.
	16	Climate	none	
	17	Landscape	?	Depending on the site and plan.
Pollution	18	Air Pollution	none	
	19	Water Pollution	none	
	20	Soil Contamination	none	
	21	Noise and Vibration	-	Potential for increased tourist traffic.
	22	Land Subsidence	none	
	23	Offensive Odor	none	
Total Evaluation		B	Possible minor impact, an appraisal required.	

Note: --: Major negative impact, -: Negative impact, +: Positive impact, ++: Major positive impact, ?: Not clear and further study may be required

Table 9.2.1 Result of Initial Environmental Examination (4/8)

7) Accommodation Development

	Item	Evaluation	Remarks	
Social Environment	1	Resettlement	?	Depending on the site.
	2	Economic Activities	++	Stimulation of local economy.
	3	Traffic and Public Facilities	--	Potential for increased traffic, detailed survey required.
	4	Community Division	?	Depending on the site.
	5	Cultural Heritage	?	Survey required.
	6	Water Right/Commonage	none	
	7	Public Health	none	
	8	Solid Waste	none	
	9	Hazards	-	Potential for increased traffic accidents.
Natural Environment	10	Topography	?	Depending on the site and plan.
	11	Soil Erosion	?	Depending on the site and plan.
	12	Groundwater	-	Potential for increased water consumption and discharge.
	13	Hydrological Situation	-	Potential for increased water consumption and discharge.
	14	Coastal Zone	?	Depending on the site and plan.
	15	Flora and Fauna	?	Depending on the site.
	16	Climate	none	
	17	Landscape	?	Depending on the site and plan.
Pollution	18	Air Pollution	none	
	19	Water Pollution	?	Appropriate sewerage required.
	20	Soil Contamination	none	
	21	Noise and Vibration	-	Potential for increased tourist traffic.
	22	Land Subsidence	none	
	23	Offensive Odor	none	
Total Evaluation		A/ B	Possible major or minor impact, an EIA required depending on the scale of development.	

8) Entertainment and Restaurant Development

	Item	Evaluation	Remarks	
Social Environment	1	Resettlement	none	
	2	Economic Activities	+	Stimulation of local economy.
	3	Traffic and Public Facilities	-	Potential for increased traffic.
	4	Community Division	none	
	5	Cultural Heritage	none	
	6	Water Right/Commonage	none	
	7	Public Health	none	
	8	Solid Waste	?	Appropriate management required.
	9	Hazards	none	
Natural Environment	10	Topography	none	
	11	Soil Erosion	none	
	12	Groundwater	none	
	13	Hydrological Situation	none	
	14	Coastal Zone	?	Depending on the site.
	15	Flora and Fauna	?	Depending on the site.
	16	Climate	none	
	17	Landscape	?	Depending on the site and plan.
Pollution	18	Air Pollution	none	
	19	Water Pollution	-	Appropriate treatment required.
	20	Soil Contamination	none	
	21	Noise and Vibration	-	Potential for increased tourist traffic.
	22	Land Subsidence	none	
	23	Offensive Odor	none	
Total Evaluation		B/ C	Possible minor impact, an appraisal required.	

Note: --: Major negative impact, -: Negative impact, +: Positive impact, ++: Major positive impact, ?: Not clear and further study may be required

Table 9.2.1 Result of Initial Environmental Examination (5/8)

9) Shopping and Souvenir Development

	Item	Evaluation	Remarks	
Social Environment	1	Resettlement	?	Potential for indirect resettlement by change of land use.
	2	Economic Activities	++	Stimulation of local economy.
	3	Traffic and Public Facilities	-	Potential for increased traffic.
	4	Community Division	none	
	5	Cultural Heritage	?	Survey required.
	6	Water Right/Commonage	none	
	7	Public Health	none	
	8	Solid Waste	none	
	9	Hazards	none	
Natural Environment	10	Topography	none	
	11	Soil Erosion	none	
	12	Groundwater	none	
	13	Hydrological Situation	none	
	14	Coastal Zone	none	
	15	Flora and Fauna	none	
	16	Climate	none	
	17	Landscape	?	Depending on the site and plan.
Pollution	18	Air Pollution	none	
	19	Water Pollution	none	
	20	Soil Contamination	none	
	21	Noise and Vibration	-	Potential for increased tourist traffic.
	22	Land Subsidence	none	
	23	Offensive Odor	none	
Total Evaluation		B/ C	Possible minor impact, an appraisal required.	

10) Airport Construction

	Item	Evaluation	Remarks	
Social Environment	1	Resettlement	?	Depending on the site.
	2	Economic Activities	++	Stimulation of local economy.
	3	Traffic and Public Facilities	--	Potential for increased traffic, detailed survey required.
	4	Community Division	?	Depending on the site.
	5	Cultural Heritage	?	Survey required.
	6	Water Right/Commonage	none	
	7	Public Health	none	
	8	Solid Waste	none	
	9	Hazards	-	Potential for increased traffic accidents.
Natural Environment	10	Topography	-	Potential for change.
	11	Soil Erosion	-	Potential for change due to the construction.
	12	Groundwater	none	
	13	Hydrological Situation	none	
	14	Coastal Zone	?	Depending on the site and plan.
	15	Flora and Fauna	-	Potential for change.
	16	Climate	none	
	17	Landscape	-	Potential for change.
Pollution	18	Air Pollution	-	Potential for air pollution due to the air traffic.
	19	Water Pollution	-	Potential by oil and fuel spill and sewerage.
	20	Soil Contamination	-	Potential by oil and fuel spill.
	21	Noise and Vibration	-	Potential for noise and vibration problem caused by air traffic.
	22	Land Subsidence	none	
	23	Offensive Odor	none	
Total Evaluation		A	Possible major or minor impact, an EIA.	

Note: --: Major negative impact, -: Negative impact, +: Positive impact, ++: Major positive impact, ?: Not clear and further study may be required

Table 9.2.1 Result of Initial Environmental Examination (6/8)

11) Road Construction and Related Facilities

	Item	Evaluation	Remarks	
Social Environment	1	Resettlement	?	Depending on the alignment of the road.
	2	Economic Activities	+	Stimulation of local economy.
	3	Traffic and Public Facilities	-	Potential impact by increased traffic.
	4	Community Division	?	Depending on the alignment of the road.
	5	Cultural Heritage	?	Depending on the alignment of the road.
	6	Water Right/Commonage	?	Depending on the alignment of the road.
	7	Public Health	none	
	8	Solid Waste	-	Potential for tourist litter.
	9	Hazards	?	Risk for accidents, landslides, etc.
Natural Environment	10	Topography	-	Potential for change.
	11	Soil Erosion	-	Potential for increase due to the construction.
	12	Groundwater	none	
	13	Hydrological Situation	none	
	14	Coastal Zone	?	Further evaluation is needed when the plan is determined.
	15	Flora and Fauna	--	Potential for land cover change.
	16	Climate	none	
Pollution	17	Landscape	-	Potential for change depending on the alignment or size.
	18	Air Pollution	-	Potential for change.
	19	Water Pollution	none	
	20	Soil Contamination	none	
	21	Noise and Vibration	-	Potential increase in traffic.
	22	Land Subsidence	none	
	23	Offensive Odor	none	
Total Evaluation		A	Possible minor impact, an EIA required.	

12) Port and Marina Construction

	Item	Evaluation	Remarks	
Social Environment	1	Resettlement	?	Depending on the site.
	2	Economic Activities	+	Stimulation of local economy.
	3	Traffic and Public Facilities	-	Potential impact by increased traffic.
	4	Community Division	?	Depending on the site.
	5	Cultural Heritage	?	Survey required.
	6	Water Right/Commonage	?	Depending on the site.
	7	Public Health	none	
	8	Solid Waste	-	Appropriate management required.
	9	Hazards	?	Increased risk of accidents.
Natural Environment	10	Topography	-	Potential for change.
	11	Soil Erosion	--	Potential for increase due to the construction.
	12	Groundwater	none	
	13	Hydrological Situation	none	
	14	Coastal Zone	--	Potential for change.
	15	Flora and Fauna	-	Potential for change.
	16	Climate	none	
Pollution	17	Landscape	-	Potential for change.
	18	Air Pollution	-	Potential for air pollution due to the increased water traffic.
	19	Water Pollution	--	Potential for water pollution due to the increased water traffic.
	20	Soil Contamination	none	
	21	Noise and Vibration	-	Potential increase by traffic.
	22	Land Subsidence	none	
	23	Offensive Odor	-	Potential for change.
Total Evaluation		A	Possible minor impact, an EIA required.	

Note: --: Major negative impact, -: Negative impact, +: Positive impact, ++: Major positive impact, ?: Not clear and further study may be required

Table 9.2.1 Result of Initial Environmental Examination (7/8)

13) Water Supply for Tourism Purpose

	Item	Evaluation	Remarks	
Social Environment	1	Resettlement	none	
	2	Economic Activities	+	Stimulation of local economy.
	3	Traffic and Public Facilities	none	
	4	Community Division	none	
	5	Cultural Heritage	?	Survey required.
	6	Water Right/Commonage	?	Survey required.
	7	Public Health	+	Increased sanitary condition.
	8	Solid Waste	none	
	9	Hazards	none	
Natural Environment	10	Topography	none	
	11	Soil Erosion	none	
	12	Groundwater	--	Possible impact on the ground water level.
	13	Hydrological Situation	--	Possible impact on the ground water level.
	14	Coastal Zone	none	
	15	Flora and Fauna	none	
	16	Climate	none	
	17	Landscape	none	
Pollution	18	Air Pollution	none	
	19	Water Pollution	none	
	20	Soil Contamination	none	
	21	Noise and Vibration	none	
	22	Land Subsidence	none	
	23	Offensive Odor	none	
Total Evaluation		A/ B	Possible minor impact, an EIA or appraisal required.	

14) Sewage Treatment Plant

	Item	Evaluation	Remarks	
Social Environment	1	Resettlement	none	
	2	Economic Activities	?	No direct benefit anticipated.
	3	Traffic and Public Facilities	none	
	4	Community Division	none	
	5	Cultural Heritage	?	Survey required.
	6	Water Right/Commonage	?	Survey required.
	7	Public Health	++	Increased sanitary condition.
	8	Solid Waste	none	
	9	Hazards	none	
Natural Environment	10	Topography	?	Depending on the site and plan.
	11	Soil Erosion	?	Depending on the site and plan.
	12	Groundwater	none	
	13	Hydrological Situation	none	
	14	Coastal Zone	?	Depending on the site and plan.
	15	Flora and Fauna	none	
	16	Climate	none	
	17	Landscape	?	Depending on the site and plan.
Pollution	18	Air Pollution	none	
	19	Water Pollution	none	
	20	Soil Contamination	none	
	21	Noise and Vibration	none	
	22	Land Subsidence	none	
	23	Offensive Odor	-	Careful design required.
Total Evaluation		B/ C	Possible minor impact, an appraisal required.	

Note: --: Major negative impact, -: Negative impact, +: Positive impact, ++: Major positive impact, ?: Not clear and further study may be required

Table 9.2.1 Result of Initial Environmental Examination (8/8)

15) Power Supply and Telecommunication Development

	Item	Evaluation	Remarks	
Social Environment	1	Resettlement	none	
	2	Economic Activities	++	Stimulation of local economy.
	3	Traffic and Public Facilities	none	
	4	Community Division	none	
	5	Cultural Heritage	?	Survey required.
	6	Water Right/Commonage	none	
	7	Public Health	none	
	8	Solid Waste	none	
	9	Hazards	none	
Natural Environment	10	Topography	?	Depending on the plan.
	11	Soil Erosion	?	Depending on the plan.
	12	Groundwater	none	
	13	Hydrological Situation	none	
	14	Coastal Zone	?	Depending on the plan.
	15	Flora and Fauna	none	
	16	Climate	none	
Pollution	17	Landscape	-	Possible change.
	18	Air Pollution	none	
	19	Water Pollution	none	
	20	Soil Contamination	none	
	21	Noise and Vibration	none	
	22	Land Subsidence	none	
	23	Offensive Odor	none	
Total Evaluation		B/ C	Possible minor impact, an appraisal required.	

Note: --: Major negative impact, -: Negative impact, +: Positive impact, ++: Major positive impact, ?: Not clear and further study may be required

Source: JICA Study Team

9.2.3 Examination of Carrying Capacity for Beach Development

The concept of “carrying capacity” for tourism development whether relating to a particular site or across a vast extended area is widely recognized among the concerned experts. However, the carrying capacity cannot be quantified precisely as it varies very much depending on many factors. For example, the number of acceptable visitors to a certain site varies depending on how the site will be managed. The acceptable number of beds or rooms to be constructed in a certain area varies very much depending on how the development plan will be designed, how the mitigation measures will be taken into consideration or how the construction will be carried out, etc.

The Study Team attempted a preliminary examination based on the existing patterns of tourist zone development in Tunisia and available information on coastal zone conditions.

In this section, the result of preliminary examination is presented to indicate future directions of tourism development. Should Tunisia continue to develop its beach areas in the same manner as the past, or should Tunisia change its direction?

The examination was carried out according to the following process:

- 1 Classification of coastal land into five categories:
 - Areas prohibited for development by law,
 - Areas unsuitable for tourism development,
 - Existing and planned tourist zones,
 - (At least partially) available areas for future tourism development, and
 - Available areas only for eco-tourism development.
 - 2 Application of assumed typical unit number of beds to the total length of identified available beach areas. It should be noted that obviously all the available area couldn't be developed only for the tourism purpose.
 - 3 Comparison with the projected number of beds in the beach regions.
- (1) Classification of coastal land
- a) Category A: Areas Prohibited for Development by Law
 - National parks and nature reserves,
 - Irrigated areas used for agriculture, etc.
 - b) Category B: Areas Unsuitable for Tourism Development
 - Geographical or topographical condition,
 - Highly sensitive areas,
 - Agricultural areas,
 - Urbanized areas,
 - Industry areas.

- c) Category C: Existing and Planned Tourist Zones
 - Existing tourist zones,
 - Planed tourist zones.

- d) Category D: Areas Available for Future Tourism Development
 - Available and suitable areas for tourism development including both beach areas and urban areas.

- e) Category E: Areas Available Only for Eco-tourism Development
 - Sensitive areas useful for environmental educational purposes.

Therefore, the category C and category D are considered to be appropriate areas to accommodate beach tourism development, although not all of category D areas can not be used for tourism purposes. Category E areas are sensitive and will need careful examination site by site.

According to the above classification, the coastal areas of Tunisia were classified as indicated in Figure 9.2.1 and Table 9.2.2.

Table 9.2.2 Classification of Coastal Land

	Categories (km)					Note
	A	B	C	D	E	
1		10				Rocky area
2				3		Tabarka
3			15			Tabarka Tourist Zone, Zouaraa Planned Tourist Zone
4					35	Possible low impact eco-tourism area
5		50				Dune, mountain and coastal area
6				5		Suburb of Bizerte
7			2			Bizerte Tourist Zone
8		10				Bizerte and suburb
9				30		Possible low impact tourism area
10	15					Agricultural area
11		10				
12			10			Tunis North Tourist Zone
13		20				Sidi Bou Side, Carthage and Tunis
14				2		Tunis Port
15			2			Tunis Urban Tourist Zone
16				10		Suburb of Tunis
17			15			Soliman Tourist Zone, Sidi Rais Planned Tourist Zone
18		25				
19	5					Protected area
20					5	Possible low impact eco-tourism area
21		50				Protected area
22			5			Kelibia Tourist Zone
23					15	Possible low impact eco-tourism area
24	20					
25					15	Possible low impact eco-tourism area
26			60			Nabeul, Hammamet, Yasmine.Hammamet Tourist Zones, Selloum, Hergla, Planned Tourist Zones
27				15		Suburb of Sousse
28			15			Sousse Tourist Zone
29		10				Sousse
30			10			Monastir Tourist Zone
31		35				Monastir, Industrial, cultivated area
32			15			Guedhabna Planned Tourist Zone, Mahdia Tourist Zone
33		15				Cultivated land
34				25		Possible low impact tourism area
35		105				Sensitive coastal area, Sfax and industrial Area
36	3					Tyna Park
37		15				Sensitive coastal area
38			10			Ele Chaffar Tourist Zone
39		112				Mahris, Gabes
40			6			Gabes Tourist Zone
41		130				
42			20			Zarzis Tourist Zone
43		5				Zarzis
44					20	Possible eco-tourism area
45	55					Fishing area
46					15	Possible eco-tourism area
47			25			Jerba Tourist Zone
48		80				Jerba Island
49			15			Kerkna Tourist Zone, Sidi Foukhal Planned Tourist Zone
50		100				Kerkna Island
Total	98	782	225	90	105	Total length of coastal area: 1,300km

Note: Categories are defined in Figure 9.2.1.

Source: MEAT, APAL, JICA Study Team

(2) Typical Unit Number of Beds

Tourist zones in Tunisia are generally representing a typical Mediterranean resort style comprised of 2 or 3 stories buildings maximum and large open space with a swimming pool and sun deck. This type of beach resort is believed to attract the majority of European tourists seeking summer vacations.

Table 9.2.3 shows typical unit number of beds (gross) of recent tourist zones planned and developed by AFT.

Table 9.2.3 Average number of beds per ha in Planned tourism zone

Tourist Zone		Area (ha)	Planned number of beds	Beds/ha
Beach	Cap Gammarth	73	4,000	54.8
	Selloum	500	25,000	50.0
	Hergla	400	10,000	25.0
	Bekalta	100	4,000	40.0
	Guedhabna	450	20,000	44.1
	Gabes	200	10,000	50.0
	Lella Hadhria	220	6,000	27.3
	Sidi Salem-Bozerte	20	1,000	50.0
	Lella Meriam-Zarzis	200	10,000	50.0
Sub-Total		2,163	90,000	41.6
Ecological	Sidi Foukhal	90	3,000	33.3
	Zouaraa	100	2,000	20.0
Sub-Total		190	5,000	26.3
Total		2,353	95,000	40.4

Source: AFT

For the examination purpose, the Study Team used 40.0 beds/ha as the average unit number of bed. This number was converted into the unit number of beds per unit length of beach (number of beds/km). The width of development area was assumed 300m, which was determined by measuring the existing tourist zones. Thus, the typical unit number of beds/km was determined as shown below:

$$40.0 \text{ beds/ha} * (300\text{m}/100\text{m}) * (1,000\text{m}/100\text{m}) = 1,200 \text{ beds/km}$$

The total estimated numbers of beds in case the areas of category C and category D identified before are developed are shown in Table 9.2.4. While, category E was not included in the examination, as it will require site-by-site examinations.

Table 9.2.4 Estimated Numbers of Beds with Development of Category D Areas

Development Progress (% of Category D)	Existing and Planned Tourist Zones (Category C) [length of 225km]	Available Areas (Category D) [length of 90km]	Total [length of 390km]
50%	270,000 beds	54,000 beds	324,000 beds
75%		81,000 beds	351,000 beds
100%		108,000 beds	378,000 beds

Note: Assumed Unit Number of Beds: 1,200 beds/km

Source: JICA Study Team

This table indicates, more or less, an approximate result, assuming that Tunisia continues to develop its beach areas in the same manner as in the past.

(3) Comparison with the Proposed National Plan

The proposed National Plan foresees a requirement for 253.7 thousand beds in 2006, 303.5 thousand beds in 2011 and 359.6 thousand beds in 2016 in the whole country. If 85% of bed capacity (305.7 thousand beds in 2016) will be still concentrated in the beach areas in the future (as it is today), Tunisian beach tourism could face serious capacity constraint for further development by 2016, considering that it is practically not possible to allocate all the available areas to tourism development. Assuming that capacity addition (with the density approximately equal to the current level) is possible only in the area of 50% of Category D land, the bed capacity to be needed (305.7 thousand) will be getting closer to the limit (324 thousand as shown in the above table) by 2016.

Though this result is based on the preliminary examination (which is inevitable for a study of this kind), it provides an extremely important implication for the direction of Tunisian tourism, particularly in terms of the following (as proposed in the National Plan):

- Undertaking development that will maximize the return from a given tract of coastal land and heavy infrastructure investment is highly recommended, including the creation of higher value beach products that can attract higher-spending tourists, and adoption of beach resorts of high-density models in selected areas.
- Development of various types of beach resorts will also be important for increasing the variety of resorts and enriching the offering of Tunisian beach products, given the limitation of the coastal areas, including condominium type hotels, high-rise hotels in the urban areas near the coast, Golf or sports oriented resorts at some distance behind the beach front.

In addition, tourism development in the inland areas proposed in the National Plan (by using archeological sites, cultural sites and Sahara products as well as formulating themed circuits) is a desirable direction not only for developing core products other than beach, but also in view of the limitation of the coastal areas. This is also true of the development of MICE tourism, which is expected to increase visitors in the urban areas rather than those along the coast.

As mentioned above, ONTT and AFT can consider some high-density methods for Mediterranean resorts, such as the popular Spanish resort of Benidorm which has several thousand beds per beachfront kilometer in buildings up to 50 stories in height. A high-density, high-rise model may be adaptable to downtown Sousse as it expands its new capacity and replace its old hotels.

(4) Recommendation on detailed study for specific areas

The primary purpose of the carrying capacity analysis conducted above was to obtain the estimate (preliminary at this stage) of the capacity for the entire country,

which was to be compared with the nationwide bed capacity needed for meeting the projected demand, thereby deriving the implications for desirable “national” tourism development policies and strategies.

The estimated unit capacity (1,200 beds/km) used for this examination is considered to be within a reasonable range for the purpose of estimating the “nationwide” carrying capacity. However, for estimating the carrying capacity for specific areas, the estimate obtained from 1,200 beds/km multiplied by coast length would serve only as a reference due to varying conditions across different areas. For example, the bed capacity (per unit beach length) at a beach around urban areas (e.g., those in Sousse) should naturally differ from that in non-urban areas. In addition, the permissible number of beds should depend partly on the capacity in environmental management that might differ across areas.

Therefore, for specific areas, it is an appropriate approach to determine the permissible level of capacity, area by area, through the planning of environmental optimal land use, as proposed in the component plans (see section 7.3.2 in this volume). In view of the limited capacity for future beach development across the country, it is highly recommended that the study on environmental optimal land use be carried out for selected areas that are considered particularly important environmentally and in terms of tourism development (e.g., selected areas in Cap Bon).

9.3 OVERALL EVALUATION

With the implementation of the National Plan, significant benefits will be brought to the Tunisian people in terms of their economic well-being, of their social development and of the environmental sustainability. However, negative impacts on these three areas may be brought as well. This is why the implementation of every strategy is indispensable. Only with the comprehensive manner, the National Plan can realize the prosperous tourism development in Tunisia.

The following Table 9.3.1 summarizes the benefits and the negative impacts as a result of the implementation of the National Plan.

Table 9.3.1 Evaluation of the National Plan

Component Plans		Positive or Negative Impacts
1 Tourism Product Development Plan	Economic	- Increased visitor arrivals and nights spent in Tunisia - Increased tourist expenditure by value added products
	Social	Positive effects on employment - Positive effects on the traditional culture - Negative impacts on moral
	Environment	- Generally beneficial effect in controlling abuses - Negative and positive impacts - Careful management needed with the increased visitors
2 Tourism Resource and Environment Preservation Plan	Economic	- Tangible benefit of environmental preservation but difficult to quantify
	Social	- Better quality of life of affected communities
	Environment	- Direct benefit
3 Marketing and Promotion Plan	Economic	- Creation of international business linkages - Increased visitor arrivals and nights spent in Tunisia - Higher tourism receipt, foreign exchange
	Social	- Positive impacts on employment
	Environment	- Not applicable
4 Tourism Industry Vitalization Plan	Economic	- Increased productivity of the tourism industry - Indirect benefit through resulted efficiency in regulation, revitalization of industry
	Social	- Increased income in line with the increased productivity - Increased number of employment
	Environment	- Careful management needed
5 Human Resource Development	Economic	- Increased productivity of the public and private sector labors
	Social	- Increased income in line with the increased productivity
	Environment	- Not applicable
6 Infrastructure Development Plan	Economic	- increased efficiency of public services
	Social	- little direct impacts on the population
	Environment	- careful management needed in the sensitive zones

Source: JICA Study Team

