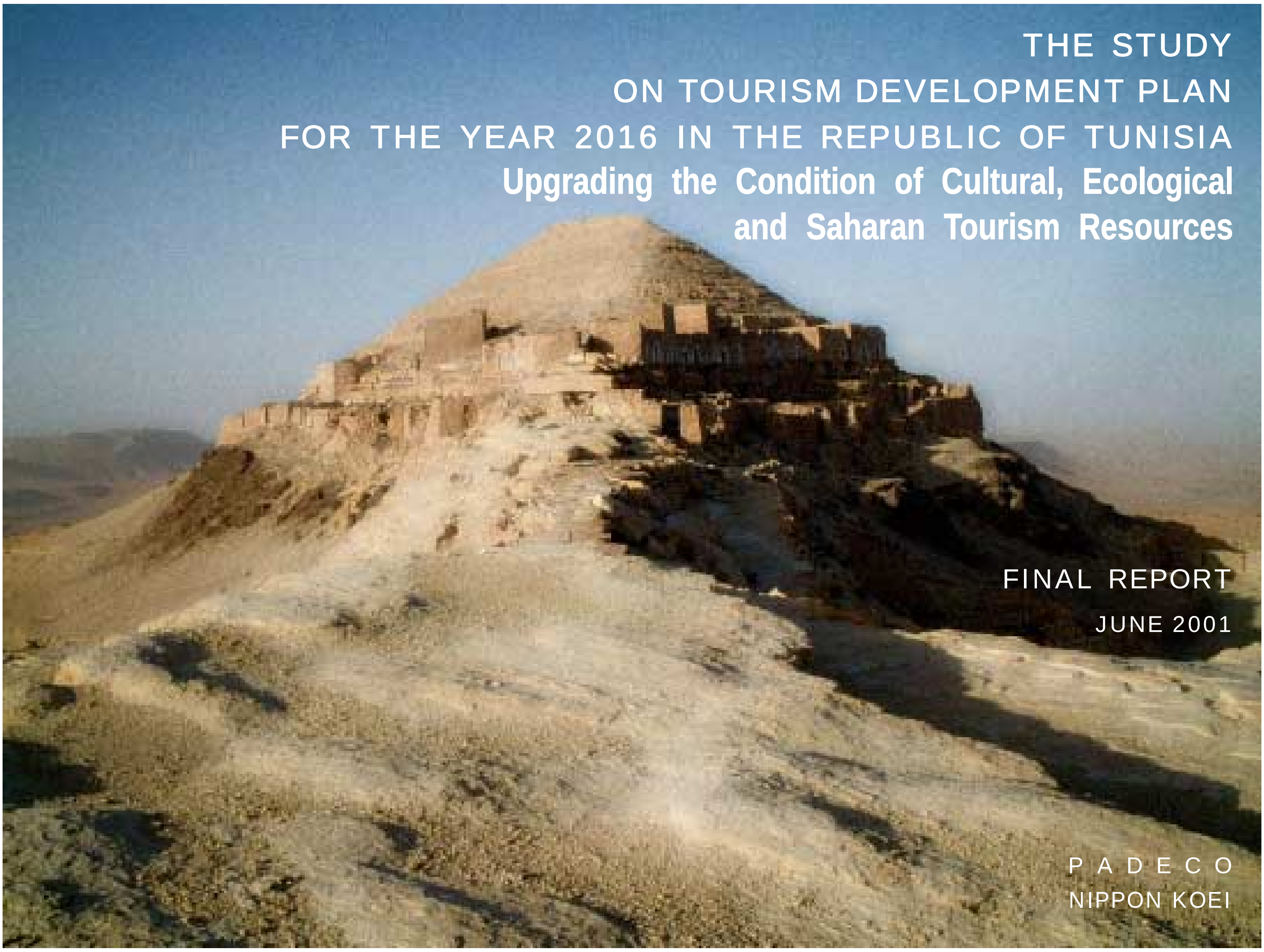
REPUBLIC OF TUNISIA
MINISTRY OF TOURISM, LEISURE AND HANDICRAFT
TUNISIAN NATIONAL TOURIST OFFICE

JAPAN INTERNATIONAL COOPERATION AGENCY

VOLUME III: APPENDIXES – SECTOR ANALYSIS



THE STUDY ON TOURISM DEVELOPMENT PLAN FOR THE YEAR 2016 IN THE REPUBLIC OF TUNISIA

Upgrading the Condition of Cultural, Ecological and Saharan Tourism Resources

FINAL REPORT

JUNE 2001

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*For the currency conversion, in case necessary,
exchange rate in January 2001 is applied:*

JPY 100 = TD 1.14

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ABBREVIATIONS

AAGR	: Average Annual Growth Rate
AFT	: Tourism Estate Agency
ALS	: Average Length of Stay
AMVPPC (or APPC)	: Heritage Valorization and Cultural Promotion Agency
ANPE	: National Agency for Environment Protection
ATEP	: Tunisian Agency for Professional Training
ATPNE	: Tunisian Association for Protection of Nature and Environment
BNDT	: National Tourism Development Bank
BOO	: Build-Operate-Own
BOT	: Build-Operate-Transfer
BTP	: Degree of Professional Technician
BTS	: Degree of Superior Technician
CAP	: Certificate of Professional Aptitude
CIQ	: Customs, Immigration and Quarantine
CMR	: Restricted Ministerial Council
CNDD	: National Commission for Sustainable Development
CRDA	: Regional Commission for Agricultural Development
CTN	: Tunisian Navigation Company
DESS	: Diploma of Specialized Higher Study
DGAT	: General Direction of Land Development, MEAT
EIA	: Environmental Impact Assessment
EIE	: Environmental Impact Assessment
EU	: European Union
FDI	: Foreign Direct Investment
FIT	: Foreign Individual Tourist
FTAV	: Tunisian Travel Agency Federation
FTH	: Tunisian Hotel Federation
GDP	: Gross Domestic Product
ICOMOS	: International Council on Monuments and Sites
IHEC	: Institute of High Commercial Studies
IMF	: International Money Fund
INP	: National Heritage Institute
INS	: National Statistic Institute
ISHT	: High Institute of Hotel Business and Tourism
IUCN	: World Conservation Union
JBIC	: Japan Bank for International Cooperation
JICA	: Japan International Cooperation Agency
MA	: Ministry of Agriculture
MAE	: Ministry of Foreign Affaires
MAP	: Mediterranean Action Plan
MAS	: Ministry of Social Affaires
MC	: Ministry of Culture

MCIIE	: Ministry of International Cooperation and Foreign Investment
MDE	: Ministry of Economic Development
MEAT	: Ministry of Environment and Land Planning
MEDA	: Euro-Med Heritage Program
MEH	: Ministry of Equipment and Housing
MF	: Ministry of Finance
MFPE	: Ministry of Professional Training and Employment
MI	: Ministry of Interior
MICE	: Meetings, Incentives, Conventions and Exhibitions
MS	: Ministry of Public Health
MT	: Ministry of Transport
MTLA	: Ministry of Tourism, Leisure and Handicraft
OACA	: Civil Aviation and Airport Authority
OECD	: Organization for Economic Cooperation and Development
OMMP	: Merchant Marine and Port Authority
ONAS	: National Sewerage Office
ONAT	: Tunisian National Handicraft Office
ONTT	: Tunisian National Tourist Office
SIT	: Special Interest Tourist
SMLT	: Tunisian Rapid Transit Company
SNCFT	: Tunisian Railroad Company
SNTRI	: National Interurban Transport Company
SOCOPA	: Handicraft Product Marketing Company
SONEDE	: National Company for Water Supply and Distribution
STEG	: National Company for Electricity and Gas
TCB	: Tunisian Convention Bureau
TD	: Tunisian Dinar
UNEP	: United Nations Environmental Plan
UNESCO	: United Nations Educational, Scientific and Cultural Organization
VAT	: Value Added Tax
VFR	: Visiting Friends and Relatives
WB	: World Bank
WTO	: World Tourism Organization
WWF	: World Wide Fund for Nature

A1 INTRODUCTION

This report is Volume III of the Final Report of the Study on Tourism Development Plan for the Year 2016 in the Republic of Tunisia.

The Final Report consists of en executive summary and three volumes as follows:

1 Executive Summary
2 Volume I: National Plan
  - Part 1: Diagnosis of the Current Situation
  - Part 2: National Plan (2016)
3 Volume II: Regional Plans and Action Plan
  - Part 3: Plans for the Selected Regions (2016)
  - Part 4: Action Plan (2006)
4 Volume III: Appendixes – Sector Analysis

Volume I: National Plan

"Part I: Diagnosis of the Current Situation" assess the past history and the current situation of tourism development in and around Tunisia, identifies issues, and surveys future prospects.

"Part II: National Plan (2016)" recommends the most appropriate objectives and strategies for the tourism development in Tunisia based on the result of Part I, and formulates development plans for various components contributing the sector development.

Volume II: Regional Plans and Action Plan

"Part III: Plans for the Selected Regions (2016)" illustrates concrete strategies and plans for the three selected regions of Greater Tunis, Central and Southwest.

Finally "Part IV: Action Plan (2006)" indicates the most necessary and immediate actions to achieve the goals of the proposed Master Plan.

Volume III: Appendixes – Sector Analysis

This volume presents the results of the sector analysis including detailed data and information supporting the Study.

A2 SOCIO-ECONOMIC IMPACT OF TOURISM SECTOR

A2.1 OVERVIEW

A2.1.1 Demography

(1) Population

Population of Tunisia is 9.3 million in 1998. The majority (98%) is Arabic Berber, with Europeans and Jews making up the remaining 2% of the population.

Population growth has peaked in 1960's and 1970's (average annual growth rate of 2.5%) and has fallen to 1.2% per annum between 1997 and 1998 or an average growth rate of 1.8% per annum in the last ten years, resulting from the family planning campaign, in which the country's family planning authorities have largely overcome traditional family patterns, entrenched religious attitudes and natural inclinations.

a) Age

The Tunisian population is relatively young with 43.5% of the population under the age of 20. People over the age of 60, on the other hand, have 8.4% shares in the Tunisian population. Central west region, Southwest region, Southeast region have high young population (under 20 years old) with 49.0%, 47.4%, and 47.5%, respectively. Aging, like other developed countries, is the general population trend in Tunisia. The number of people under the age of 20 has been decreasing over the years.

b) Urban Population

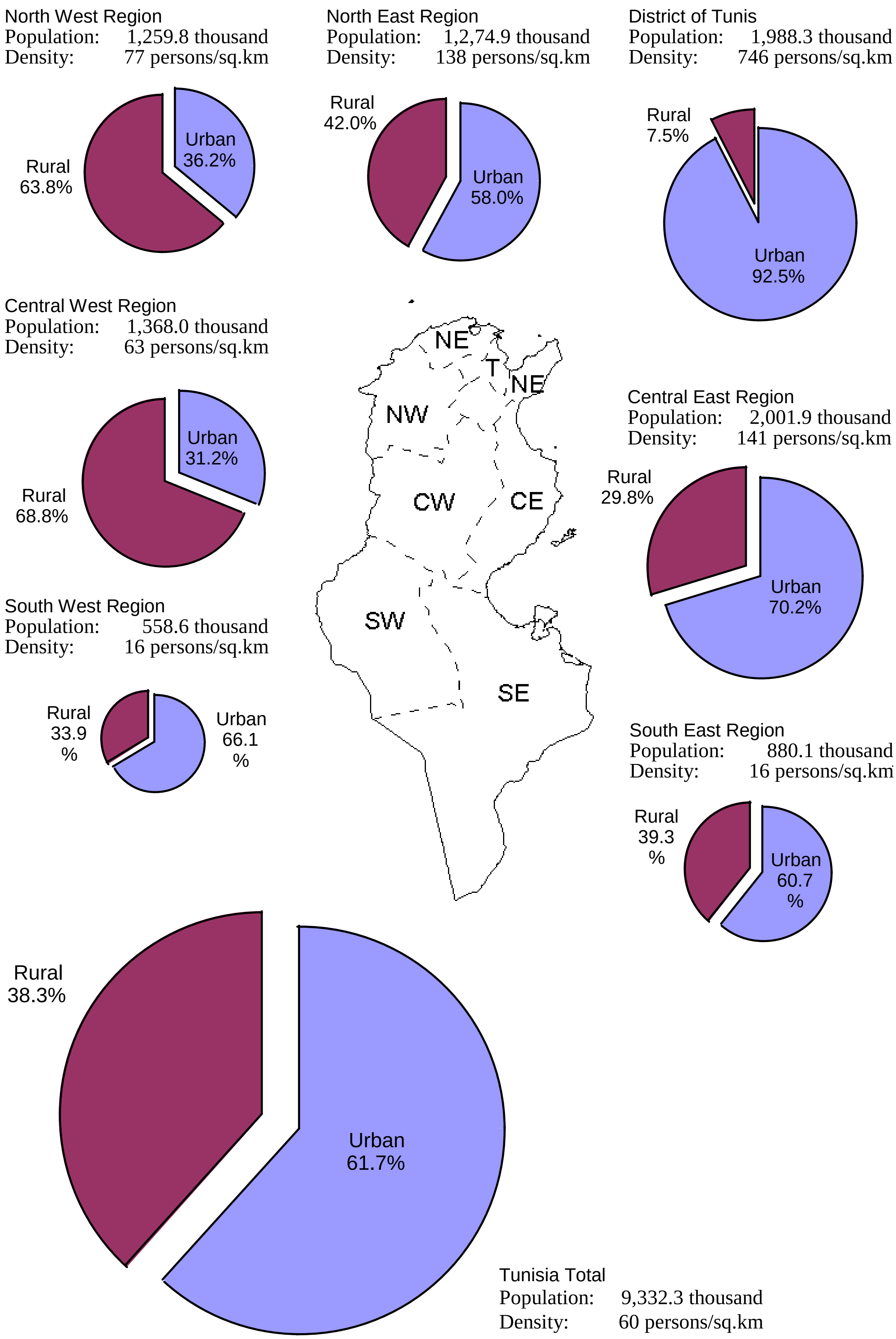
The urban population, which is characterized as any agglomeration with population of 100,000 or more, is 5.6 million or 61.7% of the total population of Tunisia, which is high compared with other Middle East and North African countries (58%). The District of Tunis has the highest urban population rate of 92.5%, followed by Central east region (Sousse, Monastir, Mahdia, Sfax) with 70.2%. North west region and Central west region have low urban population with 31.2% and 36.2%, respectively.

Table A2.1.1 Population Distribution (1998)

Region	Population ('000)	Area (sq.km)	Population Density	Urban Population Ratio*
District of Tunis	1,988.3	2,665	746	92.5%
North east	1,274.9	9,241	138	58.0%
North west	1,259.8	16,256	77	36.2%
Central west	1,368.0	21,772	63	31.2%
Central east	2,001.9	14,151	141	70.2%
South west	558.6	35,793	16	66.1%
South east	880.8	54,652	16	60.7%
Tunisia	9,332.3	154,530	60	61.7%

Source: INS, Annuaire Statistique de la Tunisie, 1998 * Enquete Nationale sur l'Emploi en1997, INS

Figure A2.1.1 Population Distribution in Tunisia



Source: INS

c) Population Density

The population is unevenly distributed. Average population density in Tunisia is 60 persons per sq. km, which ranges from 2,673 persons per sq. km in Tunis to 4 persons per sq. km in Tataouine Province. Population distribution can be characterized as high concentration along the coastal area in the northern and the central regions and low concentration in the south and the inland area. The population is concentrated particularly in the District of Tunis with the population density of 736 persons per sq. km. South region has the lowest population density with 16 persons per sq. km. The inland area also has a relatively low population density with 60 to 80 persons per sq. km.

d) Migration

Migration from the rural area in the south to the urban areas is a typical population movement in Tunisia, which leads to the population concentration in urban centers. More capable and ambitious people in the rural areas show an interest in migrate to urban centers such as Tunis, Beja, and Kasserine, due mainly to lack of employment opportunities. The desert lands of southern Tunisia and in the semiarid interior have become areas of out-migration in which only women, the old, and the very young remain.

e) Population projection

According to the Ninth Development Plan (between 1997 and 2001), the target population growth rate is set at decreasing rate in order to control population. The population growth rate is set as 1.5% for the period of 2000~2005, 1.3% for the period of between 2005 and 2010, 1.2% for the period of between 2010 and 2015, and 1.1% for the period of between 2015 and 2020.

(2) Ethnic division and religion

Islam is the state religion in Tunisia. There is a small Jewish community, living mainly in Tunis and on the island of Jerba, as well as Roman Catholics.

The Berbers were the original inhabitants of this country, but waves of immigration over the centuries have brought Phoenicians, Jews, Romans, Vandals and Arabs. There was a major influx of Spanish Muslims in the 17th century. The Ottoman Turks have also added to the great ethnic mix.

Berber communities are still found on the island of Jerba in a few villages and oases on the edge of the Sahara (Sened, Matmata), in highlands along the Libyan border (Nefusa), and in the mountainous northwestern part of the country. It is estimated that three percent of the total population is Berbers, of which less than one-half had retained their native Berber language.

(3) Labor force

Among the 9.3 million of population in Tunisia, 2.9 million people are in the labor force, of which 772,600 are female labor force. National unemployment rate for 1997 is estimated to be 14.0%. Employment is limited particularly among the older generation, female, and the people in the rural area, and the women's participation in the labor force is still low.

Agriculture has a large number of employments (546,166 or 21.8% of total employment), followed by public services such as education, health, and administration (16.5%). The number of employment in the tourism sector (hotel, restaurant) is 83,798, which accounts for 3.3% of the total employment.

Table A2.1.2 Employment by Sector

Sector	Employed	(%)	Unemployed	Others	Total	Unemployment Rate
Agriculture, Forestry, Fishery	546,166	21.8	44,658	5,325	596,149	7.5%
Food Processing Industry	51,335	2.1	9,784	530	61,649	15.9%
Construction, Equipment	35,027	1.4	4,223	384	39,634	10.7%
Mechanical and Electric Industry	61,330	2.4	8,834	706	70,870	12.5%
Chemical Industry	21,689	0.9	3,646	40	25,375	14.4%
Textile, Clothing, Leather	259,233	10.4	32,673	3,523	295,429	11.1%
Diverse Manufacturing Industry	77,908	3.1	12,138	1,243	91,289	13.3%
Mining	10,692	0.4	117	0	10,809	1.1%
Oil & Gas Extracting & Refinery	5,752	0.2	1,280	0	7,032	18.2%
Electricity (Production & Distribution)	8,890	0.4	342	0	9,232	3.7%
Water Supply	7,531	0.3	461	0	7,992	5.8%
BTP	304,845	12.2	86,782	3,697	395,324	22.0%
Commerce	260,477	10.4	21,255	1,941	283,673	7.5%
Transport & Telecommunication	122,671	4.9	8,749	0	131,420	6.7%
Hotel & Restaurant	83,796	3.3	15,219	508	99,523	15.3%
Banks & Insurance	24,763	1.0	860	0	25,623	3.4%
Services	87,408	3.5	13,716	1,694	102,818	13.3%
Social & Cultural Services	93,829	3.7	8,385	846	103,060	8.1%
Education, Health, Administration	413,230	16.5	9,574	272	423,076	2.3%
Others	2,174	0.1	288	0	2,462	11.7%
Not Declared	24,826	1.0	133,183	37,886	195,895	68.0%
Total	2,503,572	100.0	416,167	58,595	2,978,334	14.0%

Source: INS, Enquete Nationale sur l'Emploi en 1997

The employment condition for younger generation, particularly the age group of 18 to 19 and male population in the active labor force is problematic. The highest unemployment rate is for the age group of 18 to 19, which is 32.9%, followed by 30.1% for the age group of 20 to 24 and 20.5% for the age group of 25 to 29. High unemployment for male population is caused mainly by the large supply of new entrants and limited availability of the jobs compared with the female labor force.

Regional discrepancies can also be observed. The Northwest region and

Southwest region have high unemployment with 18.4% and 16.3%, respectively.

(4) Culture and Languages

Cultural differences are noticeable between inhabitants of the cities on the coastal region including the Sahil and those of rural interior. The differences between these two regions correspond generally to the historical division between settled coastal civilization and nomadic interior populace; and their roots go back to pre-Arab times when Berbers settled in the ancient cities under the control of Carthaginians or Romans.

Arabic is the official language of Tunisia. A half of the population speaks French as a second language, and many French educated Tunisians find themselves more at ease with French than with Arabic. Only one percent of the population uses Berber such as those who occupy villages on the edge of the desert in such areas as Sened, Matmata, island of Jerba and Nefusa. They also inhabit the oasis of Ghadames.

After independence, Sunday, rather than the Muslim Friday, was established as the weekly day of rest although the old ways still prevail in some parts of the interior; even city supermarkets may not sell liquor on Fridays.

A2.1.2 Administrative Structure[1]

The Republic of Tunisia is governed under the terms of the 1959 constitution and its subsequent amendments. Tunisia's government is headed by the President, who is directly elected every five years and may be re-elected for two further consecutive terms. The President appoints the Prime Minister; the Council of Ministers (the cabinet); the 24 provincial governors; the heads of the armed forces and the police; and senior judges and governmental officials. The territory of Tunisia is administratively divided into 24 provinces (governorates) as shown in Table A2.1.3. Each governorate is divided into districts (délégations) that are further divided into smaller administrative units, sectors, totaling 2,055 units across the country as of end-1998.

Table A2.1.3 Administrative Units in Tunisia

Governorate	Area (km^2)	Population (thousand)	Number of districts	Governorate	Area (km^2)	Population (thousand)	Number of districts
District of Tunis				Central east			
Tunis	346	925	21	Sousse	2,621	472	14
Ariana	1,558	637	12	Monastir	1,019	395	13
Ben Arous	761	426	12	Mahdia	2,966	353	11
Maneuba*	N/A	N/A	N/A	Sfax	7,545	782	15
Northeast				Southwest			
Nabeul	2,788	616	16	Gafsa	8,990	323	11
Zaghouan	2,768	149	6	Tozeur	4,719	95	5
Bizerte	3,685	509	14	Kébili	22,084	140	5
Northwest				Southeast			
Béja	3,558	313	9	Gabès	7,175	327	9
Jendouba	3,102	419	8	Médenine	8,588	410	9
Le Kef	4,965	278	11	Tataouine	38,889	144	7
Siliana	4,631	251	10	Total	154,530	9,333	254
Central west							
Kairouan	6,712	558	11				
Kasserine	8,066	412	13				
Sidi Bouzid	6,994	399	12				

Note: The numbers of districts indicated in the table are as of the end of 1998.

*: Newly established Governorate by dividing Ariana Governorate into two.

Source: INS, Annuaire Statistique de la Tunisie 1998, December 1999

[1] The information described in this section was drawn primarily from National Institute of Statistics, Annuaire Statistique de la Tunisie, Année 1998 (December 1999); and Economist Intelligence Unit (EIU), Country Profile: Tunisia, 1999-2000.

A2.1.3 Economic Structure and Policy[2]

The Tunisian economy, once dependent largely on agriculture, oil and phosphates, became more diversified, with manufacturing, tourism and other services now generating a large part of its output. While its economy grew fairly steadily over the past two decades, the recent performance has been particularly robust, achieving an average growth rate of 5.2% per year in 1994-99 (Table A2.1.4). In 1999, the GDP was estimated at TD 24.9 billion, and a per capita income at TD 2,530 (or US$ 2,129)[3] in 1999.

Table A2.1.4 Trend of GDP in Tunisia

Year	1994	1995	1996	1997	1998	1999	Average 1994-99
GDP at current prices (million TD)	15,814	17,052	19,066	20,898	22,600	24,844	-
Real GDP Growth (% per year)	3.2	2.4	7.1	5.4	4.8	6.2	5.2

Source: INS, Annuaire Statistique de la Tunisie 1998, December 1999; and Central Bank of Tunisia, Statistiques Financieres, March 2000.

This solid growth seems partly due to the country's moving toward increasingly market-based economy. Until the mid-1980s, its economy had been under strong government control characterized by state ownership and protection from competition. In the late 1980s, the government embarked upon an economic reform program assisted by the IMF and the World Bank aiming at three main goals: maintaining a prudent and sustainable macroeconomic framework; improving resource allocation by gradually liberalizing prices, trade and investment controls; and reducing the weight of the public sector in commercial activities to release resources to the private sector. By early 2000, the government privatized, fully or partially, more than one hundred small and medium size public enterprises in sectors including textile, tourism, transport and construction, as well as several larger-sized cement companies.

In recent years, more than 35% of Tunisia's GDP has been generated by the services sector (excluding public administration and other non-commercial services), with tourism (hotels, cafes, and restaurants) playing an important role, accounting for some 6% of GDP (Table A2.1.5). The share of manufacturing gradually increased to 18-19% from about 15% in late 1980s. Main sectors include textiles, food processing, mechanical and electrical industries, chemical materials (largely based on phosphate processing), and construction materials. Agriculture is still an important sector, with major products being cereals (mostly hard wheat) and olive oil. Tunisia is one of the world's largest producers and

[2] Much of the information described in this section is based on sources including recent publications of the National Institute of Statistics and the Central Bank of Tunisia; IMF, Tunisia: Recent Economic Developments, IMF Staff Country Report No. 00/37, March 2000; World Bank, Tunisia in Brief, available at the World Bank's web site; Economist Intelligence Unit (EIU), Country Profile: Tunisia, 1999-2000; and EIU, Country Report: Tunisia, 2nd quarter 2000.

[3] Source: the Web site of the Central Bank of Tunisia.

exporters of olive oil. Other important export crops include dates and citrus fruit. As shown in Table A2.1.6, transport and communications (partly related to tourism) grew particularly rapidly in recent years. Output for hotels, cafes, and restaurants grew at a rate approximately equal to that for the overall economy.

Table A2.1.5 GDP by Sector

Sector	1995		1997		1999	
	million TD	%	million TD	%	million TD	%
Agriculture & fisheries	1,938	11.4	2,775	13.3	3,181	12.9
Mining	91	0.5	166	0.8	239	0.9
Energy	868	5.1	1,017	4.9	1,182	4.5
Manufacturing	3,234	19.0	3,835	18.4	4,512	18.2
Building & civil engineering	820	4.8	928	4.5	1,121	4.5
Hotels, cafes, restaurants	1,051	6.2	1,276	6.1	1,545	6.2
Transport & communications	1,278	7.5	1,614	7.6	1,959	8.0
Other commercial services	3,158	18.5	3,693	17.9	4,411	18.0
Non-commercial services	2,427	14.2	2,967	13.9	3,462	13.9
Indirect taxes net of subsidies	2,187	12.8	2,687	12.6	3,292	12.9
GDP at market prices	17,052	100.0	20,898	100.0	24,844	100.0

Note: at current prices

Source: Central Bank of Tunisia, *Statistiques Financieres*, March 2000.

Table A2.1.6 Real GDP Growth by Sector

Sector	1995	1996	1997	1998	1999	2000	Average 1994-99
Agriculture & fisheries	-9.9	29.5	3.0	-1.0	11.0	1.0	5.7
Mining	21.0	7.0	-9.3	19.6	9.1	3.5	8.9
Energy	-0.3	5.0	2.5	5.3	2.0	1.6	2.9
Manufacturing	4.4	2.7	7.1	3.7	6.0	5.8	4.8
Building & civil engineering	-0.6	2.8	7.0	6.0	5.5	8.0	4.1
Hotels, cafes, restaurants	1.7	3.7	7.4	4.9	7.5	4.5	5.0
Transport & communications	5.4	10.7	8.4	8.5	9.7	11.2	8.5
Other commercial services	7.3	3.9	5.0	6.7	5.3	6.2	5.7
Non-commercial services	4.8	3.3	5.7	5.4	4.3	5.5	4.7
Indirect taxes net of subsidies	3.1	3.1	5.5	7.0	4.0	5.0	4.5
GDP at market prices	2.4	7.1	5.4	4.8	6.2	5.0	5.2

Unit: % per year

Source: Central Bank of Tunisia, *Statistiques Financieres*, March 2000.

Foreign trade is important to the country's economy. In 1999, commodity exports earned TD 7.0 billion, which is equivalent to 28% of GDP (Table A2.1.7). Tunisia, however, suffers from a large amount of trade deficits, a phenomenon persisting over decades, resulting from various factors including a decline in mineral exports (particularly, crude oil and phosphates) offsetting the increases in exports of manufactured goods; continued and increased imports of capital equipment and raw and semi-processed imports used for increasing manufacturing production; a persistent deficit on the food trade balance; and imports of consumer goods increasing with the rising income. As shown in Table A2.2.5, foreign currency receipts from tourism greatly contribute to offsetting these large trade deficits.

Table A2.1.7 Trade Balance and Tourism Receipt

Year	1994	1995	1996	1997	1998	1999
Exports	4,696	5,173	5,372	6,148	6,518	6,967
Imports	6,647	7,464	7,499	8,794	9,489	10,071
Trade Balance	-1,951	-2,291	-2,127	-2,646	-2,971	-3,104
Tourism Receipt	1,318	1,323	1,413	1,565	1,713	1,954
% in trade balance	67.6	57.7	66.4	59.2	57.7	63.0

Unit: million TD at current prices

Source: Central Bank of Tunisia, Statistiques Financières, March 2000; and Central Bank of Tunisia, Annual Report 1998, June 1999.

Table A2.1.8 shows the composition of exports and imports. Textiles are by far the largest contributor to the country’s exports, accounting for 43-46% in recent years, followed by machinery and electrical equipment, and petroleum and its derivatives. Olive oil is the top agricultural export commodity. Industrial goods and manufactures constitute a large part of the imports, ranging from raw materials to semi-processed goods, capital equipment, and consumer goods and durables.

Tunisia’s trade partners have been largely confined to EU countries. France, the largest trade partner, accounts for more than a quarter of both exports and imports in recent years, followed by Italy, then by Germany. These three countries combined account for more than 60% of exports and slightly less than 60% of imports. Other major trade partners include Spain, Belgium, Libya, Netherlands, the United Kingdom, and the United States.

Table A2.1.8 Trend of Composition by Value of Exports and Imports of Tunisia

Product Type	1994	1995	1996	1997	1998	1999
Exports (%)						
Textiles	43.3	45.4	46.2	43.6	45.2	43.2
Machinery & electrical equipment	6.5	7.1	7.7	8.7	10.6	9.6
Petroleum & derivatives	9.4	8.4	10.5	9.0	6.4	7.1
Olive oil	6.5	4.2	2.2	4.7	3.3	5.5
Chemicals	4.9	5.0	5.6	6.0	5.8	5.4
Shoes & leather goods	4.1	4.5	4.8	5.0	5.1	5.4
Fertilizers	5.0	5.4	5.9	5.0	5.3	5.0
Fish & shellfish	1.8	1.4	1.7	1.7	1.9	1.5
Others	18.5	18.6	15.4	16.1	16.4	17.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Imports (%)						
Textiles	23.0	23.4	24.5	23.1	24.6	22.7
Mechanical equipment	12.4	11.6	12.8	12.4	13.7	13.1
Electrical equipment	7.6	6.9	7.6	8.1	8.9	8.4
Vehicles	6.5	6.0	6.6	7.0	6.6	7.7
Petroleum & derivatives	5.1	4.8	6.3	6.7	4.3	5.6
Iron & steel	4.6	4.9	4.5	4.2	4.9	4.3
Plastics	3.2	3.6	3.4	3.4	3.6	3.4
Cereals	1.6	5.4	3.4	3.9	3.3	2.5
Others	36.0	33.5	30.9	31.3	30.0	32.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Central Bank of Tunisia, Statistiques Financieres, March 2000.

Foreign direct investment (FDI) in Tunisia, mostly by companies from EU countries (partially by Arab and US firms as well), has been largely in the energy sector due to the country's developing oil and gas fields, although the FDI in manufacturing has also been increasing (Table A2.1.9). Recent FDI in tourism is in the range of TD 30 million per year, compared with TD 300-340 million of the sector's annual gross fixed capital formation.

Table A2.1.9 Foreign Direct Investment Flows into Tunisia by Sector

Sector	1994	1995	1996	1997	1998
Energy	495	245	167	271	202
Tourism & real estate	17	28	48	23	25
Manufacturing	14	24	50	86	523
Others	17	8	8	23	10
Total	543	305	273	403	760

Unit: million TD

Note: The large increase for manufacturing in 1998 is primarily due to the sale of two cement plants to non-residents, one for TD 241 million and the other for TD 168 million.

Source: Central Bank of Tunisia, Annual Report 1998, June 1999; and Central Bank of Tunisia, Statistiques Financieres, March 2000.

Since Tunisia undertook the economic reform programs, financial balances have improved, with the fiscal deficits (excluding grants and privatization proceeds) reduced to lower than 3% of GDP in 1998. Likewise, inflation has declined and seems to have gradually stabilized in recent years. In 1995-99, the rate of increase in consumer price index averaged 3.3% per year, down from 5.8% per year in 1990-95.

Despite the generally favorable economic performance, however, unemployment remains among the most serious issues faced by the government. The unemployment rate in 1998 was estimated at 15.2 %, roughly unchanged in the past several years. This high level partly reflects the inclusion of non-active job seekers in the official definition. Outside this group, unemployment has been largely concentrated among first-time job seekers and unskilled workers. The unemployment rate varies across regions and has been particularly high in some of the northwestern and southwestern provinces including Jendouba, Le Kef, and Gafsa.

The Government of Tunisia has been moving further toward liberalizing its economy. In 1995, Tunisia concluded an Association Agreement with the European Union that provides for a liberalization of trade relations, enhanced financial and technical cooperation, and close collaboration in many areas, including cultural and political matters.

The Agreement phases in free trade in industrial goods over 12 years. Under the Agreement, free access to EU markets, previously permitted for most of the country's industrial exports, was maintained as well as extended to textiles, while Tunisia dismantles, over 12-year period, all tariff and non-tariff barriers to industrial imports from the EU, subject to a number of safeguard provisions. For a large number of items (mainly equipment goods), quantitative restrictions and tariffs were abolished immediately as the Agreement came into effect; for other categories of products, tariff reductions are to be fully implemented by 2008 with a five-year grace period accorded to locally produced goods facing competition from EU producers. Note that agricultural products are not covered by the Agreement.

The privatization program continues, further liquidating a number of public enterprises for the settlement of their non-performing debts. The program is also expected to result in the complete withdrawal of the public sector from the construction, housing and electric power industries. In addition, large public enterprises have already sold (e.g., Tunisair, and Star, an insurance company), or are scheduled to sell, their shares on the stock market. The government has also been promoting private sector participation in infrastructure development through BOO/BOT (build-operate-own or –transfer) contracts, in areas including electric power, highway construction, water treatment, and waste disposal.

The reform of the banking system will be among the immediate focuses of the government, preparing for opening up the sector to foreign competition in 2001 under agreements with the World Trade Organization and the EU. The reform programs include: modernization of the legal and institutional structure of the financial system; adoption of internationally accepted methods of supervision and prudential regulation; liberalization of credit controls and interest rates; reform of the tax system; restructuring of the non-performing loans to public enterprises; privatization; and reorganizing of the banking system structure. In conjunction with the tourism sector, BNDT (Banque Nationale de Développement Touristique), partially owned by the state and providing funds for tourism development in Tunisia, was merged with STB (Société Tunisienne de Banque) and BDET (Banque de Développement Economique de Tunisie) in January 2001.

A2.1.4 National Development Plan

(1) Overall Objectives of the 9th Plan

The Tunisian Government prepares a national development plan every five years, with the current one being the 9th Plan targeting the period 1997-2001. The ultimate goal to be achieved by the 9th Plan is the total integration of the national economy into the international environment and the preparation of the country for an entry into the new century with the best chances for success. The broadly defined targets adopted for the Plan include the following:

- To further open the economy to the outside world;
- To establish links between the sectoral targets, the requirements imposed for an efficient use of resources, and the need for further economic growth;
- To develop and modernize the infrastructure;
- To evaluate and upgrade human resources;
- To reinforce the results having been achieved in the social field (particularly creation of more new jobs); and
- To give an impetus to regional development.

As a developmental approach to achieve these targets, the Plan aims at faster economic growth, a higher level of investment, balancing national accounts, and controlling inflation. The Plan stresses that the achievement of these targets and objectives requires a strengthening of the country's competitiveness, a greater diversification of the economy, and an efficient allocation of resources, specifying the need for further efforts in the following areas: opening of the economy more to the outside world; increasing exports; reforming the price subsidizing policy and domestic trade; continuing fiscal reform and implementation of various fiscal systems; reforming monetary and financial systems; and pursuing the privatization program.

(2) Tourism Sector in the 9th Plan

In addition, the Plan specifies guidelines and policies by sector. The Plan's objectives for the tourism sector called for the following:

- Enriching and diversifying the tourism products, and exploring new potential markets, including golf, pleasure boats, Saharan tourism, conference tourism, natural parks, festivals, mountain tourism and hunting, thermal tourism, cultural and archeological tourism;
- Improving the quality of services, including hotels, restaurants, cafes, sanitation control, environmental protection, and professional training;
- Reinforcing commercialization and promotion of tourism products, including reinforcement of international advertisement (particularly in countries with higher buying power);
- Upgrading the infrastructure and improving the environment in tourist areas, e.g., in new tourist zones to be created; and
- Consolidating the role of the private sector in the tourism activities, including enhancement of the competitiveness in the new markets,

advertising operations, diversification of promotion measures, provision of infrastructure, and environmental improvement and protection.

The Plan sets specific goals for the tourism sector, in comparison to those for the 8th Plan, according to several key indicators as shown in Table A2.1.10.

Table A2.1.10 9th Plan Key Indicators for the Tourism Sector

Indicators	8th Plan	9th Plan
Visitor-Nights (million) Annual growth rate	26.1 (in 1996) 6.3% per year	34.0 (in 2001) 5.4% per year
Occupancy rate	48.1% (in 1996)	51.5% (in 2001)
Tourist receipts (million TD current value)	1,411 (in 1996)	2,280 (in 2001)
Investment (million TD at 1996 prices)	1,535 (in the 8th Plan period)	1,480 (in the 9th Plan period)

Source: Republic of Tunisia, 9th Development Plan in Brief, 1997-2001, November 1997.

The period of the 9th Development Plan will be ending in 2001, to be followed by the 10th Plan targeted for 2002-2006. The Tunisian Government began its preparation for the upcoming 10th Plan as of July 2000.

A2.2 IMPACT OF TOURIST RECEIPTS TO TUNISIAN ECONOMY

Tourism is one of the major industries in Tunisia, holding a large share in the entire economy, and many Tunisian people are either directly or indirectly involved in tourism activities. In this chapter, economic and social impacts of the tourism sector are analyzed.

- Economic impacts are analyzed, examining the extent to which the tourism earnings are contributing to the tourism sector as well as other sectors in terms of production and employment. Specifically, the analysis focuses on tourism earnings, the spread effect structure, and the multiplier for production and employment. The multiplier is defined as total distributed revenues (production) divided by total revenue (production) for the tourism sector.
- Social impacts are analyzed, examining the importance of the tourism sector to the region, impacts to living conditions, impacts to culture, and intention to provide tourism related economic services.

The analysis is conducted based on data and information mainly from the following sources:

1 Publicly available economic data,
2 Socio-economic impact survey conducted for this Study,
3 Relevant ONTT documents, and
4 Interviews with hotel and restaurant managers.

Where data and samples are limited, the impacts on the overall economy were estimated through extrapolation.

Tourism sector, which is one of the few sectors with a surplus in balance of payments, contributes significantly to the country’s foreign currency earnings. According to the Central Bank of Tunisia, its earnings was TD 1,954.3 million in 1999, accounting for about 16.8% of earnings in the current balance of payment. The sector’s foreign currency earnings continue to grow rapidly, by 14.1% in 1999, 9.4% in 1998, and 10.8% in 1997, respectively. The earnings represent 7.8% of GDP in 1999. (Note that the overall average tourism earning per foreign visitor arrival was TD 404 in 1999.)

According to the publicly available statistics, total value added of hotels, restaurants and cafes is estimated at TD 1,545 million in 1999, accounting for 6.2% of GDP. There are other sub-sectors that provide services directly consumed by tourists. In addition, these sub-sectors directly associated with tourism purchase outputs produced by still other sub-sectors, thereby indirectly contributing to the economic activities outside of tourism, which is discussed in the following section.

A2.2.1 Methodology

Impact of tourism related sector activities on the Tunisian economy is estimated by analyzing the spread effect structure that can be measured by the multiplier of the tourism related production. The **spread effect structure** and **multiplier** are estimated for the following categories.

- Tourism production (hotels and restaurants) and related activities including the intermediate consumption, and the private consumption arising from the value added of the tourism sector
- The investment in the tourism sector (hotels and restaurants construction) and its intermediate consumption and value added
- Handicraft production (ceramic and carpet production) and its intermediate consumption and value added

The analysis was conducted based on the following conditions:

- Value added ratio [Value Added/Production] for the tourism sector (0.615) and its average for the entire economy (0.525) were calculated from the supply and use table prepared by INS. (Table A2.2.1 Economic Impact by Tourism Operation)
- The average propensity to consume (MPC): [final national consumption expenditure] / [national disposable income] = 0.755, which was calculated by the Central Bank of Tunisia, is applied as the consumption ratio of the value added.
- A local part of production for intermediate consumption is calculated from the supply and use table prepared by INS. Following is the share of local production for each category: 85.2% for tourism related activities, 72.0% for construction, and 100.0% for handicraft.
- For handicraft production, ceramic and carpet sectors are considered to be related to tourism.

In order to estimate the spread effect structure for the tourism sector and the tourism investment (construction), the following three stages were examined. For handicraft production, on the other hand, the spread effect structure was examined for the first two stages considering that much of the production process tends to take place within the handicraft sector.

Stage 1:	Production by tourism sector, construction sector, handicraft
Stage 2:	- Local part of production for the intermediate consumption (goods and services) by tourism/construction/handicraft - Consumption arising from the value added created by the tourism sector/construction sector
Stage 3:	- Local part of production for the intermediate consumption of the goods and services at the 2nd stage - Value added created from the 2nd stage production

Table A2.2.1 Economic Impact by Tourism Operation (Intermediate Consumption)

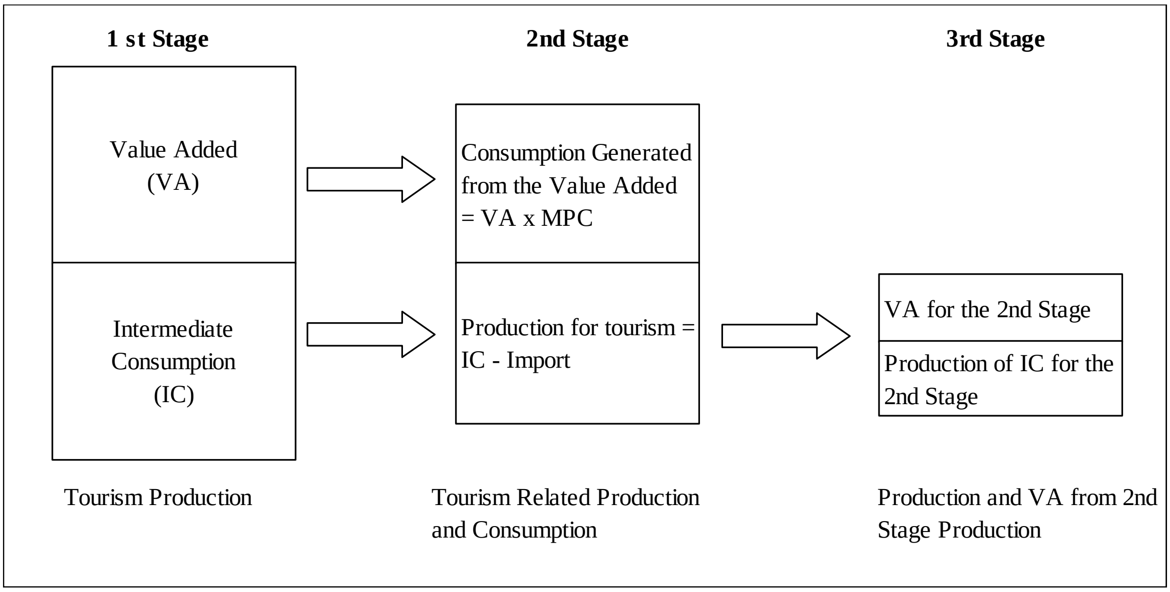
Sector	(1) Production (TD'000)	(2) Value Added (TD'000)	(3) Value Added Ratio (2)/(1)	(4) Consumption by Tourism Sector (Production) (TD'000)	(5) Consumption Ratio by Tourism Sector (Production) (4)/(1)	(6) Consumption by Tourism Sector (Value Added) (4)*(2)	(7) Consumption Ratio by Tourism Sector (Value Added) (6)/(4)	(8) Impact to Value Added (Coefficient) (5)*(3)	(9) Impact to Consumption (Coefficient) (5)*(1-(3))
1 Agriculture, Forestry, Fishery	4,247,940	2,699,341	0.635	258,179	6.08%	164,059	9.56%	0.0386	0.0222
2 Food Processing Industry	2,571,964	864,128	0.336	272,952	10.61%	91,706	31.59%	0.0357	0.0705
3 Construction, Equipment	4,536,843	1,496,792	0.330	22,222	0.49%	7,332	1.48%	0.0016	0.0033
4 Mechanical and Electric Industry	928,569	260,031	0.280	5,510	0.59%	1,543	2.12%	0.0017	0.0043
5 Chemical Industry	1,979,848	443,306	0.224	11,887	0.60%	2,662	2.68%	0.0013	0.0047
6 Textile, Clothing, Leather	4,040,094	1,313,016	0.325	1,576	0.04%	512	0.12%	0.0001	0.0003
7 Other Manufacturing Industry	1,340,949	474,165	0.354	15,011	1.12%	5,308	3.17%	0.0040	0.0072
8 Mining	349,985	198,803	0.568	5,404	1.54%	3,069	2.72%	0.0088	0.0067
9 Oil & Gas Extracting & Refinery	1,317,062	839,336	0.637	33,322	2.53%	21,235	3.97%	0.0161	0.0092
10 Electricity (Production & Distribution)	577,945	292,918	0.507	11,296	1.95%	5,725	3.86%	0.0099	0.0096
11 Water Supply	145,656	106,275	0.730	4,597	3.16%	3,354	4.33%	0.0230	0.0085
12 Transportation & Telecommunication	2,185,972	1,454,424	0.665	54,839	2.51%	36,487	3.77%	0.0167	0.0084
13 Hotel & Restaurant	1,965,497	1,209,337	0.615	6,694	0.34%	4,118	0.55%	0.0021	0.0013
14 Banks & Insurance	989,708	850,336	0.859	5,365	0.54%	4,610	0.63%	0.0047	0.0008
15 Other Services	7,723,664	5,828,853	0.755	47,305	0.61%	35,700	0.81%	0.0046	0.0015
Total	34,901,696	18,331,061	0.525	756,160	2.17%	397,150	4.13%	0.0114	0.0103

Note: Based on the input-output table in 1996.

Source: INS, JICA Study Team

Figure A2.2.1 illustrates the spread effect structure for the tourism sector. The other two categories (construction and handicraft) follow the same logic.

Figure A2.2.1 Spread Effect Structure for the Tourism Sector



Source: JICA Study Team

Spread effect structure shows all the production and consumption related to tourism production. The multiplier is calculated as the sum of the 1st stage production and the ratios of the 2nd stage and 3rd stage production and consumption to the 1st stage production.

A2.2.2 Estimate of Multipliers

The multiplier is estimated as 2.097 for tourism, 2.183 for construction and 1.889 for handicraft as shown in Table A2.2.2. Multiplier of 2.097 for tourism means input of 1 to the tourism sector will create consumption and related production of 2.097 in the Tunisian economy. The process of estimation is described in Table A2.2.3.

Table A2.2.2 Estimate of Multipliers

Tourism Related Activities	Multiplier
Tourism (hotels and restaurants)	2.097
Investment (construction)	2.183
Handicraft (ceramic and carpet)	1.889

Source: JICA Study Team

Table A2.2.3 Spread Effect Structure and Multiplier

Spread Effect Structure and Multiplier for Tourism Operation (Hotels and Restaurants)

1 st Stage		2nd Stage		3rd Stage	
(1-1) Value Added	0.615	(2-1) Consumption from value added created by Tourism	0.465		
		MPC	0.755		
(1-2) Intermediate Consumption	0.385	(2-2) Production by tourism related sectors for tourism intermediate consumption	0.328	(3-1) Value added for the production by tourism related sectors	0.172
		(2-3) Share of domestically produced goods	0.852	(3-2) Intermediate consumption by other sectors	0.133
				(3-3) Share of domestically produced goods	0.852
(1-3) Tourism Production	1.000	(2-4) Spread effect for 2nd Stage	0.792	(3-4) Spread effect for 3rd Stage	0.305
Multiplier					**2.097**

Note:
(2-1) = (1-1) x MPC
(2-2) = (1-2) x (2-3)
(2-4) = (2-1) + (2-2)
(3-1) = (2-2) x Value Added (0.525)
(3-2) = (2-2) x Intermediate Consumption (0.475) x (3-3)
(3-4) = (3-1) + (3-2)

Spread Effect Structure and Multiplier for Tourism Investment (Construction)

1st Stage		2nd Stage		3rd Stage	
(1-1) Value Added	0.274	(2-1) Consumption from value added created by construction sector	0.207		
		MPC	0.755		
(1-2) Intermediate Consumption	0.726	(2-2) Production related to construction work	0.523	(3-1) Value added for the production by tourism related sectors	0.275
		(2-3) Share of domestically produced goods	0.720	(3-2) Intermediate consumption by other sectors	0.179
				(3-3) Share of domestically produced goods	0.720
(1-3) Total Production	1.000	(2-4) Spread effect for 2nd Stage	0.730	(3-4) Spread effect for 3rd Stage	0.453
Multiplier					**2.183**

Spread Effect Structure and Multiplier for Handicraft (Ceramic and Carpet)

1st Stage		2nd Stage	
(1-1) Value Added	0.451	(2-1) Consumption from value added created by handicraft	0.341
		MPC	0.755
(1-2) Intermediate Consumption	0.549	(2-2) Production related to handicraft work	0.549
(1-3) Total Production	1.000	(2-3) Spread effect for 2nd Stage	0.889
Multiplier			**1.889**

Source: JICA Study Team

A2.2.3 Spread Effect on Related Sectors

This section analyzes the spread effect of tourism operation on related sectors in some more detail. Total intermediate consumption by tourism sector accounts for 2.17% of total production in Tunisia. These intermediate goods and services include the following:

- Hotels: food and beverages, construction and maintenance services, other materials, laundry and cleaning (outsource), tourist attractions, other materials and services purchased,
- Restaurants: food and beverages, construction and maintenance services, other materials and services purchased.

Some sectors relay heavily on tourism as a consuming sector: 10% of food processing industry production and 6% of agriculture and fishery production are consumed by the tourism sector (Table A2.2.4), indicating the importance of tourism for these industries.

Production by agriculture and fishery and food process industry has the largest share of total consumption by the tourism sector, accounting for 80.2%, followed by transportation and telecommunication with 7.3%.

Table A2.2.4 Intermediate Consumption by Tourism Sector

	Sector	Production (TD'000)	Consumption by Tourism (TD'000)	Consumption Ratio by Tourism	Share Among the Related Sectors
1	Agriculture, Forestry, Fishery	4,247,940	258,179	6.08%	34.1%
2	Food Processing Industry	2,571,964	272,952	10.61%	36.1%
3	Construction, Equipment	4,536,843	22,222	0.49%	2.9%
4	Mechanical and Electric Industry	928,569	5,510	0.59%	0.7%
5	Chemical Industry	1,979,848	11,887	0.60%	1.6%
6	Textile, Clothing, Leather	4,040,094	1,576	0.04%	0.2%
7	Other Manufacturing Industry	1,340,949	15,011	1.12%	2.0%
8	Mining	349,985	5,404	1.54%	0.7%
9	Oil & Gas Extracting & Refinery	1,317,062	33,322	2.53%	4.4%
10	Electricity (Production & Distribution)	577,945	11,296	1.95%	1.5%
11	Water Supply	145,656	4,597	3.16%	0.6%
12	Transportation & Telecommunication	2,185,972	54,839	2.51%	7.3%
13	Hotel & Restaurant	1,965,497	6,694	0.34%	0.9%
14	Banks & Insurance	989,708	5,365	0.54%	0.7%
15	Other Services	7,723,664	47,305	0.61%	6.3%
	Total	34,901,696	756,160	2.17%	100.0%

Source: INS, 1996 data

Besides hotels, restaurants and cafes, there are other sub-sectors directly involved in tourism-related activities, including travel agencies (tour operators), souvenir and handicraft production and shops, and major tourist sites.

Based primarily on the socio-economic impact survey and on ONTT data, total value added of the travel agencies is estimated to be about TD 118 million, or 0.47% of GDP. The amount of intermediate consumption by the travel agencies is estimated at about TD 97 million.

Handicraft/souvenir shops are difficult to estimate due to limited availability of sales data. While souvenir shops of the size equivalent to those recommended by ONAT totaling 82 shops are estimated to generate about TD 3 million of value added per year with their intermediate consumption estimated at TD 5 million, the size of this industry should be significantly greater than this in view of a great number of souvenir shops existing across the country.

Note also that the tourist sites include major museums, cultural and archeological sites, and amusement facilities, totaling 22 sites that attracted 2.7 million visitors in the past year, receiving the total revenue of about TD 5 million per year.

These intermediate goods and services include the following:

- Travel agencies: car rentals, transport, tour guides, attractions, and other services purchased,
- Souvenir shops: handicraft manufacturing, construction and maintenance services, other materials and services purchased.

A2.3 IMPACT ON EMPLOYMENT

A2.3.1 Direct and Indirect Employment

The impact of tourism on employment is estimated based on the spread effect structure estimated for the impact of tourism production and related activities, and on the labor productivity by sector.

Direct employment is defined by ONTT as that for hotels, restaurants, travel agencies, and tourism sites, while the employment in other sectors is considered as indirect employment. For assessing the impact on employment, direct employment and four types of indirect employment are estimated as follow:

1 **Direct employment:** employment in hotels and restaurants, travel agencies, souvenir shops, and tourism sites
2 **Indirect employment A:** employment related to hotels and restaurants operation: intermediate consumption by hotels and restaurants such as food, telecommunication, utility, etc.
3 **Indirect employment B:** employment related to the consumption generated by value added in the tourism sector (non tourism related activities)
4 **Indirect employment C:** employment related to tourism investment, mostly hotels and restaurants construction.
5 **Indirect employment D:** employment related to handicraft production (ceramic and carpet).

Total direct employment and all types of indirect employment mentioned above are considered as the impact on the employment.

Estimation of employment in each type is shown below:

1 Direct employment in hotels and restaurants (83,796) is taken directly from INS data which is the base for the estimation of indirect employment. The breakdown of direct employment into that for hotels and restaurants is estimated first by calculating the employment for hotels from bed capacity and employment/bed capacity ratio, then subtracting hotel employment from total direct employment, leading to the employment for restaurants. Employment for other tourism activities such as travel agencies and major tourism sites are estimated from the socio-economic impact survey conducted by the JICA Study Team.

2 **Indirect employment A**: Indirect employment related to tourism has two components: I) employment needed for production of intermediate consumption for tourism and II) employment needed for production of intermediate consumption for the sectors producing input demanded by the tourism sector.

   I. Indirect employment is calculated by taking the total employment (2,503,572) in Tunisia multiplied by the share of intermediate consumption for tourism (2.17%), equaling 54,241
   II. Indirect employment is calculated by taking the first indirect employment (54,241) multiplied by the average intermediate consumption ratio in Tunisia (0.47).

3 **Indirect employment B**: Indirect employment related to non-tourism activities is calculated as the employment generated by the consumption of non-tourism production, i.e., MPC (75.5%) of value added of the tourism sector. (Table A2.3.1)

4 **Indirect employment C**: Employment created by investment in tourism is calculated by taking the share of employment for construction in tourism in the total employment for construction. (Table A2.3.2)

5 **Indirect employment D**: Employment in handicraft (ceramic and carpet sectors) is taken directly from INS data. (Table A2.3.3)

Table A2.3.1 Estimation of Employment for Consumption from Value Added by Tourism Sector

National Account

A	Total Production (Tunisia)	34,901,696	(TD'000)	INS
B	Total Employment (Tunisia)	2,503,572		INS
C	Estimated MPC	0.755		Central Bank of Tunisia

Production by Tourism

D	Value Added	1,209,337	(TD'000)	
E	Intermediate Consumption	756,160	(TD'000)	
F	Total Production	1,965,497	(TD'000)	

Estimation of Employment

G	Actual Consumption by Tourism Sector	913,049	(TD'000)	D*C
H	Consumption by VA Ratio for Tourism Sector	0.026		G/A
I	Employment for Consumption from VA	65,495		H*B

Source: JICA Study Team

Table A2.3.2 Estimation of Employment in Construction for Tourism Sector

Production for Construction (1996)	4,536,843	(TD'000)
Value Added	1,496,792	(TD'000)
Value Added Ratio	0.330	
Employment (1997)	339,872	
Production/Employment (Productivity)	13,349	(TD)
Value Added/Employment	4,404	(TD)
Employment/Production	0.07491	(TD'000)
Investment for Tourism (1999)	338,000	(TD '000)
(Hotels, Cafes, Restaurants)		
Employment for Construction in Tourism	25,321	

Source: INS, JICA Study Team

Table A2.3.3 Employment in Handicraft

Ceramic	15,855
Carpet	47,073
Total	62,928

Source: Enquete Nationale Sur L'Emploi En 1997

A2.3.2 Estimated Employment

Total employment related to tourism is estimated as 323,953, which is 13 % of total employment in Tunisia. Employment in agriculture and food processing industry has the largest share, which accounts for 71% of employment for the tourism related sector as shown below.

Table A2.3.4 Estimation of Current level of Employment

Sector	Direct Employment	Indirect Employment	Total Employment
Hotels, Restaurants	83,796 (Hotels: 68,637) (Restaurants: 15,159)	(A) 79,993	163,789
Consumption for non tourism operation	-	(B) 65,495	65,495
Other tourism (travel agencies, major tourist sites)	6,420	-	6,420
Tourism Related Investment	-	(C) 25,321	25,321
Handicraft (ceramic, carpet)	-	(D) 62,928	62,928
Total	90,216	233,737	323,953

Source: JICA Study Team

Table A2.3.5 Breakdown of Indirect Employment A

	Sector	Total Employment	Indirect Employment A-I	Share Among the Sector	Indirect Employment A-II	Share Among the Sector
1	Agriculture, Forestry, Fishery	546,166	33,195	61.2%	12,101	47.0%
2	Food Processing Industry	51,335	5,448	10.0%	3,618	14.0%
3	Construction, Equipment	339,872	1,665	3.1%	1,116	4.3%
4	Mechanical and Electric Industry	61,330	364	0.7%	262	1.0%
5	Chemical Industry	21,689	130	0.2%	101	0.4%
6	Textile, Clothing, Leather	259,233	101	0.2%	68	0.3%
7	Other Manufacturing Industry	77,908	872	1.6%	564	2.2%
8	Mining	10,692	165	0.3%	71	0.3%
9	Oil & Gas Extracting & Refinery	5,752	146	0.3%	53	0.2%
10	Electricity (Production & Distribution)	8,890	174	0.3%	86	0.3%
11	Water Supply	7,531	238	0.4%	64	0.2%
12	Transportation & Telecommunication	122,671	3,077	5.7%	1,030	4.0%
13	Hotel & Restaurant	**83,796**	285	0.5%	110	0.4%
14	Banks & Insurance	24,763	134	0.2%	19	0.1%
15	Other Services	881,944	5,402	10.0%	1,325	5.1%
	Total	2,503,572	**54,241**	100.0%	**25,753**	100.0%

Note: See text for the definitions of indirect employment A-I and A-II.

Source: JICA Study Team prepared from INS data

It should be noted that the employment in the tourism sector is not necessarily stable, particularly for hotels. Based on the survey samples, only about 48% of hotel staff are permanently employed, with the rest being those hired under a contract (34%), seasonal employees (10%), and those in training and apprentices (10%). Restaurants and travel agencies provide a higher proportion of permanent employees, 79% for restaurants and 80% for travel agencies.

BOX: Estimate of Employment per Tourist Activity

In Tunisia, tourism-related employment is currently estimated applying a fixed factor (employment per bed) to the number of beds, which is largely because of the lack of employment data for tourism industries. The Study Team attempted to estimate employment in tourism per tourist activity as well as per bed. This estimate is based partly on the employment data from a sample of hotels interviewed during the study (16 five-star hotels, 22 four-star hotels, and 22 three-star hotels). Employment for restaurants was not estimated due to lack of data. Note that the breakdown of employment for hotels and restaurants described above was derived by subtracting hotel employment estimated below from the official statistics of employment for hotels and restaurants.

It should be noted that this estimate is preliminary in nature, and should be used or treated as such. In order to obtain more accurate estimate, a large-scale survey needs to be carried out, collecting employment and operational data from tourism-related industries.

First, hotel employment per bed was estimated for the hotels interviewed (Table A2.3.6).

Table A2.3.6 Hotel Employment per Bed by Category

Employment per bed	5-star hotels	4-star hotels	3-star hotels
High season	0.54	0.43	0.35
Low season	0.48	0.39	0.25
High/low	1.13	1.10	1.43

Source: Social Impact Survey

Second, using the bed capacity in 1999, total number of hotel employment was estimated at 68,637 (Table A2.3.7). Note that employment per bed for categories other than 3- to 5-star hotels is assumed as shown in the table.

Table A2.3.7 Estimate of Hotel Employment

Category	Employment per bed (Assumption*)	Number of beds	Hotel employment
5-star	0.54	18,203	9,830
4-star	0.43	47,056	20,234
3-star	0.35	77,017	26,956
2-star	0.20	22,743	4,549
1-star	0.20	3,044	609
Vacation village	0.35	10,486	3,670
Pension	0.30	1,090	327
NC	0.20	12,316	2,463
Total	-	191,955	68,637

Note: * Assumed based on the result of the social impact survey

Source: JICA Study Team, Social Impact Survey

Third, using the 1999 figures of visitor arrivals (4,831,658) and visitor nights (33,150,730), employment per tourist activity was estimated by employment category (Table A2.3.8). Note that employment for other tourism was estimated based on the interviews with a sample of Tunisian tour operators and travel agencies and the number of employees at major cultural sites. Indirect employment is estimated earlier in this section. As noted, employment for restaurants is excluded from the analysis due to lack of data allowing its estimate.

The measures in the table below represent the following:

Employment per bed: the number of employees for each category estimated to be required for an additional bed

Employment per 1000 visitor arrivals: the number of employees for each category estimated to be required for additional one thousand visitor arrivals

Employment per 1000 visitor nights: the number of employees for each category estimated to be required for additional one thousand visitor nights

Table A2.3.8 Direct and Indirect Employment per Tourist Activity

Sector	Employment	Employment per bed	Employment per 1000 visitor arrivals	Employment per 1000 visitor nights
Hotels	68,637	0.36	14.2	2.07
Other tourism (travel agencies, major tourist sites)	6,420	0.03	1.3	0.19
Indirect employment	233,737	1.22	48.4	7.05
Total (excluding restaurants)	308,794	1.61	63.9	9.31

Source: JICA Study Team

A2.4 SOCIAL IMPACT SURVEY RESULT

The social impact survey was conducted to figure out the types of social impacts and people's opinions and willingness regarding tourism. Samples are taken from the areas where social impact is considered to be relatively large. The regions of Nabeul-Hammamet, Sousse, Tozeur, Matmata are selected as survey sites. The sample consists of 352 households representing the population of Nabeul-Hammamet, Sousse, Tozeur and Matmata, with the geographic composition shown in Table A2.4.1. Major findings of the social impact survey follow.

Table A2.4.1 Geographic Composition of the Social Impact Survey Sample

Region	Frequency	Percentage (%)
Nabeul –Hammamet	115	32.7
Sousse	116	33.0
Tozeur	99	28.1
Matmata	22	6.3
Total	352	100.0

Note: The sample size taken for each region is based on the consideration of each region's size as a tourist destination.

Source: Social impact survey by the JICA Study Team

(1) Importance of Tourism to Region's Economy

The survey results suggest that tourism is generally well accepted, with most people agreeing with its economic importance (Table A2.4.2). This tendency is stronger in the well-established tourist destinations, Nabeul-Hammamet and Sousse. The proportion of people with disagreement is relatively higher in Matmata, and to a lesser extent, in Tozeur as well, which may be largely because tourism in these areas has been less developed than the major beach resorts (most probably, less developed than expected by the residents in these areas), and the extent of benefits brought for the local people by tourism thus far tends to be less than the beach resorts.

Table A2.4.2 Importance of Tourism to the Economic Activity

Region	Absolutely agree	Agree	No opinion	Disagree	Absolutely disagree	Total
Nabeul-Hammamet	73.9	23.5	0.9	1.7	0.0	100.0 (115)
Sousse	58.6	38.8	0.0	2.6	0.0	100.0 (116)
Tozeur	46.5	47.5	0.0	6.1	0.0	100.0 (99)
Matmata	40.9	45.5	0.0	13.6	0.0	100.0 (22)

Unit: %, Number of answers in parentheses

Source: Social Impact Survey

(2) Impacts on Living Conditions

As shown in Table A2.4.3, people interviewed generally think that tourism tends to raise their income, bring infrastructure improvement, improve their living standard, and improve their access to leisure activities. Many think that tourism tends to ease out-migration from their regions, though some express disagreement.

Another question revealed that the cost of living tends to go up due to the tourism activities because tourists are usually willing to pay higher prices for local goods and services. This tendency is stronger in Nabeul-Hammamet and Sousse where tourism has been well developed.

Table A2.4.3 Impacts of Tourism to the Region

Survey item	Very Good	Good	Bad	Very bad	No impact	Total
Improvement of income	23.6	63.6	4.8	1.1	6.8	100
Access to leisure activities	20.5	57.4	6.5	0.6	15.1	100
Improvement of the infrastructure (roads, communication network, etc.)	26.1	68.5	2.0	0.6	2.8	100
Standard of living	14.5	67.6	4.8	1.7	11.4	100
Scholastic achievement	1.7	22.4	19.3	14.5	42.0	100
Emigration	6.5	57.4	17.3	13.6	5.1	100

Unit: %

Source: Social Impact Survey

(3) Cultural Impacts

Generally, the opinions on cultural impacts of tourism are rather negative (Table A2.4.4), particularly for the value and moral aspect, but also for other cultural aspects such as tradition, clothing, and language (potential loss of their local languages such as Arabic and Berber language).

Regional differences are strong, with more people in the major beach resorts negatively looking at the cultural impacts of tourism. Possible explanations may include behaviors of beach vacationers (e.g., lightly dressed, drinking alcohol) and their potential lack of respect for the local culture. People in Matmata are rather positive about the cultural impacts, possibly because this area attracts fewer tourists than the beach resorts, and those visiting Matmata tend to well respect the local culture that makes the place well known.

People in Tozeur, on the other hand, appear to be rather conservative, feeling more negative about the cultural impacts of tourism than those in Matmata. People in Tozeur, especially the oasis owners, are already engaging in agricultural activities such as dates and other fruits production which generate some income and do not enjoy much of the benefit from tourism. Typical tourism pattern in Tozeur is limited to a horse carriage ride in oasis, but the oasis owners do not benefit from the activities. Tourists only visit oasis and do not bring economic benefit.

Also the number of tourists is limited in inland compared with the tourists in the beach tourism areas, so the scale impact is small. In addition, Matmata does not have any industry, so only the tourism generates income for the people.

Even though people have some negative views on tourism, they are still expecting the exchange of cultures between the local people and tourists; tourism is expected to contribute to value development, promotion of Tunisian culture to tourists, and introduction of foreign culture by tourists to Tunisia.

Table A2.4.4 Cultural Impacts of Tourism

Survey item	Very negative	Negative	No impact	Positive	Very positive	Total
Local language	15.1	38.9	35.5	10.2	0.3	100
Traditions	14.2	38.6	34.1	10.5	2.6	100
Values & Morals	21.9	45.2	25.3	7.1	0.6	100
Clothing fashion	29.0	33.0	28.7	9.1	0.3	100

Unit: %

Source: Social Impact Survey

(4) Impacts on employment

As shown in Table A2.4.5, the majority of people interviewed agree that tourism contributes to job creation, although the proportion of those with disagreement is higher in Tozeur. This may be largely because tourism in this area has not been well developed relative to the major beach resorts, bringing relatively fewer employment opportunities in tourism-related activities.

Table A2.4.5 Contribution of Tourism to Employment

Region	Absolutely agree	Agree	No opinion	Disagree	Absolutely disagree	Total
Nabeul –Hammamet	31.3	38.3	4.3	20.9	5.2	100 (115)
Sousse	24.1	50.0	0.0	23.3	2.6	100 (116)
Tozeur	11.1	36.4	1.0	49.5	2.0	100 (99)
Matmata	22.7	50.0	0.0	27.3	0.0	100 (22)

Unit: %, Number of answers in parentheses

Source: Social Impact Survey

(5) Intention to Provide Tourism-Related Economic Services

People were interviewed about their intention to provide tourism-related services for monetary return, including provision of lodging using their own houses, selling meals, and introducing traditional music in some sort of events (Table A2.4.6). About a half of them show their interest in selling meals and showing music, while lodging provision less interests them.

Table A2.4.6 Intention to Provide Tourism Services

Activity	Yes	No	Total
Provide lodging	27.8	72.2	100.0
Selling meals	51.7	48.3	100.0
Showing music	48.6	51.4	100.0

Unit: %

Source: Social Impact Survey

Most of those showing their interest in these service provisions are willing to actually start these services, indicating that they seek opportunities in the tourism sector.

Table A2.4.7 Willingness to Start Tourism Services for Those Who Show Interests

Region	Lodging	Selling meals	Show music
Nabeul Hammamet	94%	85%	79%
Sousse	87%	94%	94%
Tozeur	76%	69%	57%
Matmata	100%	100%	75%

Unit: Share of acceptance

Source: Social Impact Survey

(6) Overall Assessment of Social Impacts

While tourism importantly contributes to the country’s economy and is generally well accepted by people interviewed, it does not appears to be providing the level of benefits as it should, with some negative impacts resulting as well.

Many of the negative answers seem to be associated with the issues and problems faced by the Tunisian tourism, including heavy reliance on beach tourism, its reputation for a budget destination, limited attractions, and low quality of services. These tend to result in limited employment opportunities in tourism-related activities particularly in non-beach resort areas (though not limited to them), as well as causing some adverse cultural effects particularly in the major beach resorts.

It is important to note that people in the inland areas (Tozeur and Matmata) tend to expect less benefit from tourism industry that has not been well developed in these areas. In view of the fact that there are few other promising industries, promoting tourism in these areas will be extremely important not only for national tourism development but also for bringing economic benefits for local residents by providing them with economic opportunities, thereby contributing to regional development.

Table A2.4.8 summarizes the social impacts of tourism by region and their overall assessment.

Table A2.4.8 Overall Assessment on Social Impacts of Tourism

Survey item	Nabeul Hammamet	Sousse	Tozeur	Matmata	Overall
Importance of tourism	Positive	Positive	Positive	Positive	Positive
Impact on living standard	Positive (Negative on cost of living)	Positive (Negative on cost of living)	Positive	Positive	Positive (Negative on cost of living)
Impact on culture	Negative	Negative	Negative	Positive	Negative
Impact on employment	Positive	Positive	Negative	Positive	Positive
Acceptance of tourism	Positive	Positive	Positive	Positive	Positive
Intention to provide tourism services					
Providing lodging	Less interested	Less interested	Less interested (Particularly negative by oasis owners)	Less interested	Less interested
Selling meals and drinks	Less interested	Interested	Less interested	Interested	Interested
Introducing music in events	Less interested	Interested	Less interested	Interested	Less interested

Note: *Positive and negative are determined by the majority opinion.

Source: JICA Study Team

A3 NATURAL ENVIRONMENT

A3.1 OVERVIEW

Tunisia has diverse climatic and geographical characteristics. These characteristics influence the formation of the natural environment in Tunisia. For example, regarding soil formation, the northern region has very rich soil in terms of humus, whereas the soil in the southern and the central regions is characterized by a saline accumulation that limits the land fertility. Moreover, the northern region has another advantage as a result of the high precipitation that makes it the water castle of the country (81% of the water used comes from the north). This permits the growth of rich forest in the northern region, with 27% of the surface of the mountains being covered with natural vegetation, 23% of which is forest. On the other hand, the central region does not have real natural forest. Its natural vegetation consists of steppes or low shrub (e.g., Esparto). As for the southern part, due to the low rainfall and to evaporation, only a small amount of water is available to support limited human activities and natural resources (vegetation and animals). Because of the harsh natural conditions, a relatively small impact of natural and human activities can cause serious changes in the natural environment.

Another important issue concerned with the natural environment is the relationship with human activities. The rapid increase of urbanization and industrial development, especially in the coastal areas, has also caused other environmental problems. In concrete terms, the demographic growth and the over-concentration of large numbers of the population has caused over-exploitation of agricultural land, over-use of ground water (especially in the central and the southern regions), and overflow of domestic waste in excess of the processing capacity. With regard to the development of tourism, needless to say, it has the potential to exert many positive impacts on the economic and social life of the country, but it can also impact on the environment in negative ways such as erosion and deterioration of the coastline in the tourist zones. The management of solid waste appears to be quite adequate in the tourist zones; however, outside of these, especially in urban areas including Medinas, it is not sufficient and requires definite improvement if tourism is to be successfully developed in the future. Thus, the Tunisian natural environment consists of a great variety of natural elements, and is dependent on a delicate balance. However, economic growth is one of the country's major aims and many development activities are required and encouraged by the Tunisian Government. Therefore, there is a very real requirement for realization of sustainable development.

A3.1.1 Geographical Characteristics

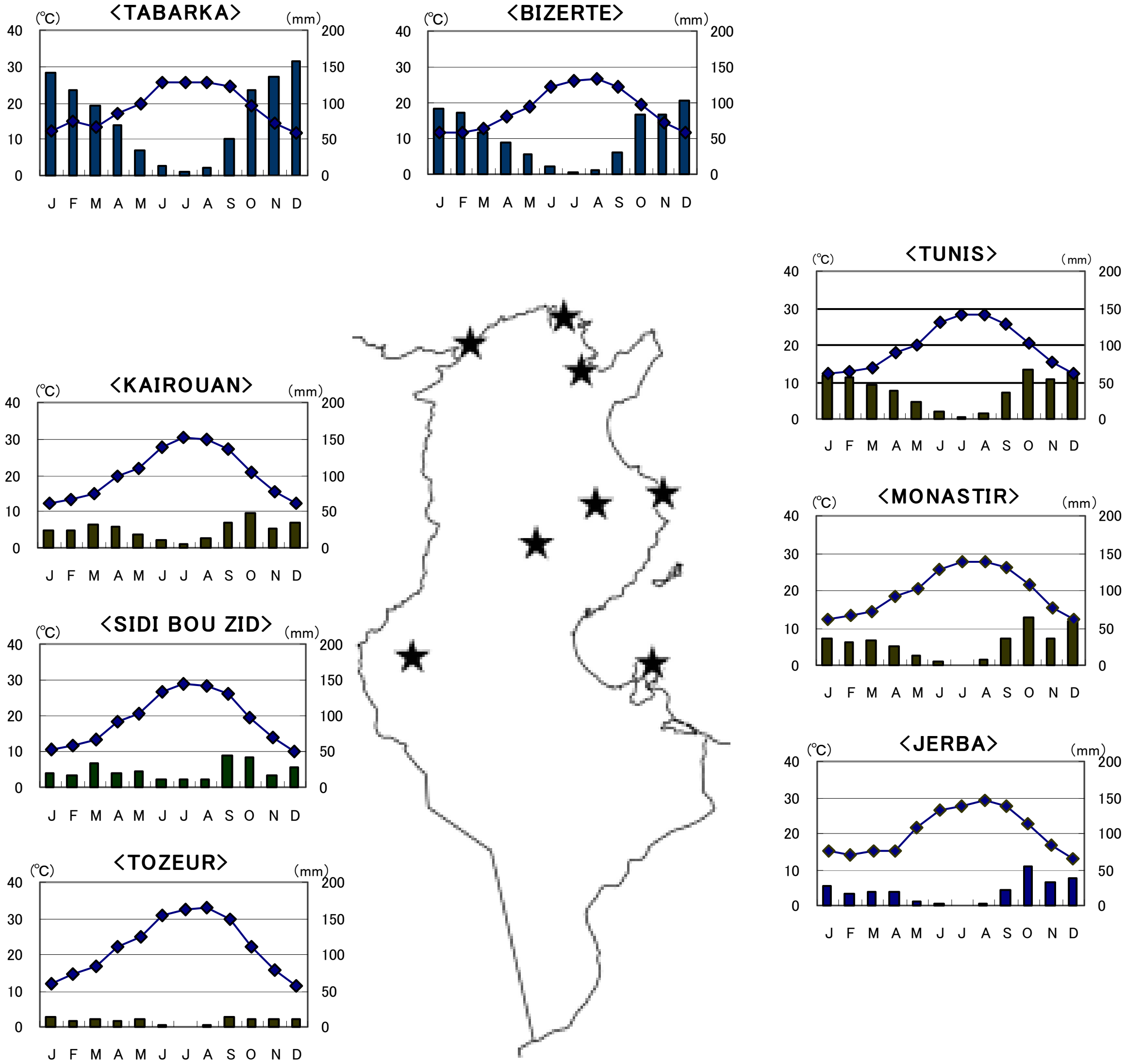
Tunisia has an area of 164,000 sq.km, and is by far the smallest country of the four North African countries that make up the Maghreb. It measures 750 km from north to south and 150 km from east to west. It is bordered by Algeria in the west, Libya in the southeast and the Mediterranean in the north and east. Its coasts stretch for 1,298 km (excluding the islands). It is located just 113 km to the south of Sicily; only a two-hour flight from Paris and 45-minute flight from Rome.

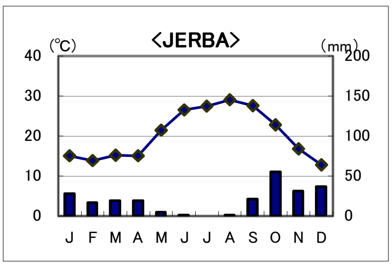
Geographically, Tunisia can be divided into four regions: the Tell, the Dorsale, the Steppes, and the South. The Tell is located in the north of the country with altitudes between 400 m and 800 m. The Tell consists of two parts separated by the Medjerda valley; the Khroumirie and Mogods to the north and the High Tell ranges to the south of the valley. The terrain gets lower as it approaches the eastern coast. The Dorsale, which represents the oriental end of the Saharan Atlas, is the main mountain range of the country. It runs from the southwest, in Tebessa across the Algerian border, to the north-east, to the Cap Bon Peninsula. This chain includes the highest point in Tunisia, Mt Chaambi (1,544 m). The Steppes stretch from the north of Gafsa to the south of the Dorsale. They consist of two distinct zones: the High Steppes with an altitude of more than 400 m, and the Low Steppes which consist of a low lying expanse of coastal plains. In the South, there are extensive seasonal salt flats and date palm oasis with altitudes that vary from 20 m to 30 m. This region includes the lowest point in the country, Chott El Gharsah (-17 m). The extreme south of Tunisia is the desert Sahara which contains the north-east end of the Great Oriental Erg. Additionally, about 60 islands are located in the coastal area of the Mediterranean Sea. Only three out of the 60 islands have residents, namely Galite, Kerkenah and Jerba islands. Galite, which is located off the northern coast of the country, is well known for its precious coral reefs area.

A3.1.2 Climate

The Tunisian climate is Mediterranean in the north and along the coasts, and semi-arid in the interior and south regions. The average temperature ranges from 14.3 ˚C to 21.3 ˚C. The maximum temperature occurs in July-August and varies from 28 ˚C to 48 ˚C with the lowest temperatures on the coasts and at high altitudes, and the highest temperatures in the south. The minimum temperature occurs in January and varies from 2 ˚C to 7 ˚C with the lowest temperatures in the interior regions and the highest temperatures along the coasts. As for rainfall, the annual average decreases regularly as one goes from the northwest to the southeast. The annual average varies from 800 mm to 1,000 mm in the north and from 50 mm to 150 mm in the south.

Figure A3.1.1 Monthly Temperature and Rainfall in Selected Areas in Tunisia





Source: National Institute of Meteorology, Almanach 1999

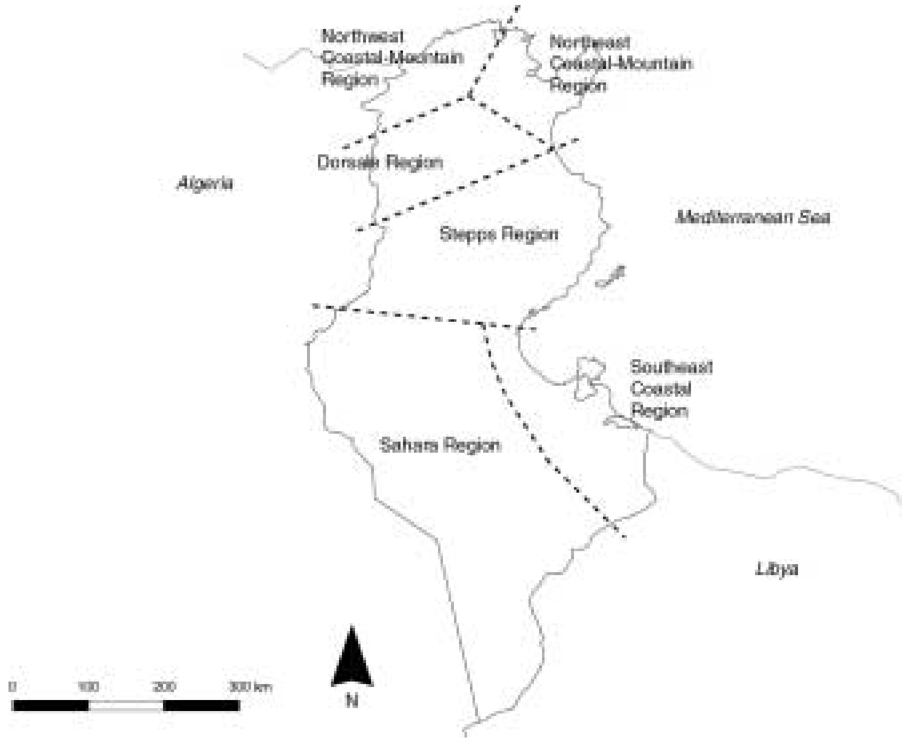
The country can be divided into 6 major regions on the basis of geography and climate. These are explained in the Table A3.1.1 and Figure A3.1.2.

TableA3.1.1 Geographical and Climatic Characteristics of Tunisia

Geographical and Climatic Regions	Characteristics
North-East Coastal Region	This region has an average altitude of less than 400 m. Most of the region consists of semi-arid climate, except for Cap Bon, an area of semi-humid climate. It has a mild winter with an average rainfall of between 500 mm and 600 mm /year. It has a rich soil, which manifests itself in a rich vegetation cover. The region is known for cereal cultivation and wine production around the Mejerda Valley and fishing on the coasts. The Cap Bon Peninsula is also known for its citrus fruit and vineyards.
North-West Coastal-Mountain Region	This region consists of mountains with an average altitude varying from 400 m to 800 m. It has a humid to sub-humid climate, with an average rainfall of between 800 mm and 1,200 mm/year. It has a rich vegetation cover, mainly oak forests. Hunting is also practiced in this region.
Dorsal Region	This high mountainous region stretches from the Algerian border in the south-west to Cap Bon in the north-east. It has a semi-arid climate with an average rainfall varying from 300 mm to 500 mm /year. The eastern and central parts of this region have very cold winters because of its altitudes.
Steppes Region (Center)	This region consists of the High Steppes, large plains with an altitude of more than 400m, and the Low Steppes which stretch to the east, forming the coastal plain. This is part of the arid level, with an average rainfall of between 150 mm and 350 mm /year. The High Steppes in the west has a cold winter while the Low Steppes in the east enjoys a warm winter. The Low Steppes area includes several salty lakes and has an average vegetation cover. The main agricultural activities in the High Steppes consist of apple and cactus cultivation and cattle breeding. Olive trees are widespread in the sahel, extending from Sousse to Sfax.
South-East Coastal Region	This region, known as the Jeffara, is located between the Gulf of Gabes and the Matmatas range. It has an average rainfall of between 100 mm and 200 mm /year. The Gabes area is known for its grenadine and fishing.
Sahara Region	This consists of 3 geographical areas: the Chotts with the lowest lands, the Dahar step plateau between Matmata and the Libyan border with an altitude between 400 m and 600 m, and the Sahara desert which represents the oriental end of the Great Erg in the south-east. The annual average rainfall ranges from 50 mm to 100 mm /year in the Chotts and the Dahar, to less than 50 mm in the lower Sahara. Because of this harsh climate and the poor quality of the soil, sparse vegetation is characteristic of this area. Oases of palm trees are scattered all over the Jerid area to the north.

Source: MEAT and MA

Figure A3.1.2 Geographical and Climatic Characteristics of Tunisia



Source: JICA Study Team

A3.1.3 Land Use

The total area of productive land (agricultural and forest land) is around 57,000 sq. km, which is approximately 35% of the total area of Tunisia. According to the statistics for 1998-1999, approximately 80% (40,031 sq. km) of total agricultural land (50,145 sq. km) has been exploited. The largest agricultural areas are located in the center and the north. Forests cover only 4% of the total area of the country; together with the shrub lands, this amounts to 32%. The annual loss of productive land is estimated at 270 sq. km, the main causes being erosion, desertification, salination, flooding, and urban expansion (TableA3.1.2).

TableA3.1.2 Land Use Classification

Zone	Agricultural land			Forest Land	Shrub	Other	Total
	Cultivated	Fallow					
		Exploited	Not cultivated				
North	15,373	1,027	1,812	4,502	3,184	2,970	28,868 (17.7%)
Center	19,104	637	3,007	1,844	7,956	8,400	40,948 (25..1%)
South	5,554	113	3,518	138	33,979	50,000	93,302 (57.2%)
Total	40,031 (24.5%)	1,777 (1.1%)	8,337 (5.2%)	6,484 (4.0%)	45,119 (27.7%)	61,370 (37.6%)	163,118 (100%)

Unit: sq. km.

Source: MA, Repartition des Terres Agricoles Campagne 1998-1999, 2000

There are six categories of land ownership (Table A3.1.3). For the last decade, the Tunisian Government has been encouraging privatization of most of the useful land with the aim of achieving more effective land utilization. At this point, around six million ha of sterile deserts and chotts and 1.5 million ha of shrub land are still common or state owned land, and 8.5 million ha of useful land is privately owned land.

Table A3.1.3 Types of Land Ownership in Tunisia

Collective / Common Land:	This type of land, collectively owned by ethnic groups and families, is mostly situated in the south and center regions of the country. The climatic characteristic of the area containing this land is mostly that of the arid region with scattered vegetation in which the inhabitants need to travel around the region to graze their cattle. In total, this type of land covers around three million ha. Half of this is sterile shrub land, the other half has been being privatized since the 1970s.
Land of extreme indivisibility	This type of land is owned by large families who have no documents to prove their ownership. It is found mainly in the center, particularly the High Steppes. The Government considers it to be collective land and is trying to privatize it by distributing it among the members of the owning families.
Habous Land	The products of habous land are dedicated to particular religious and humane institutions. The habous land areas are scattered around the country (Zaghouane, Sfax, Kairouane, Gabes, etc). Most of them are being privatized.
State-owned Land	This type of land is scattered around the country, particularly in the Center and the North. It covers around five million ha. Parts of it are being privatized.
Private Land	This covers around five million ha and is based in the north, the Cap Bon Peninsula, Sfax, Gabes, Jerba, and the Sahel. The total surface area of this land is increasing as a result of the privatization referred to above.
Desert Land	It covers the whole eastern south and is rich in petroleum deposits.

Source: General Direction of Forest, MA

A3.1.4 Flora and Fauna

Table A3.1.4 summarize the flora and fauna that can be seen in Tunisia. There are about 2,200 plant species, 80 mammal species, 360 bird species, and 67 amphibian and reptile species. Large mammals, as well as 12 bird species are considered to be endangered species. Tunisia is famous as a country in Mediterranean birds from the north and African ones from the south meet and nest. The inventory shows the presence of 64 families. The most important groups are the passere (38% of all the species), followed by the birds of the humid zone (grallatores, cenas, limicoles, larrides with 32%.) The greatest number of species belongs to Sylvia, anatidae, and Accdipitrides.

TableA3.1.4 Flora and Fauna of Tunisia

Plant species	2,200	Mammal Species	80
Rare plants	307	Bird Species	362
Extremely rare plants	99	Amphibian and reptile species	67
Unique species	7		

Source: MEAT, Biodiversity inventory in Tunisia

A3.2 ENVIRONMENTAL MANAGEMENT

A3.2.1 Policy and Strategy

The Tunisian Government first started to implement an environmental policy in the 1960s. However, it was only in the late 1980s that environmental management became an important topic in Tunisia. In 1988, the Government established a new assessment institute, the National Agency for Environment Protection (ANPE) in order to cope with environmental management. In 1990, the first National Environmental Action Plan was developed with the help of the World Bank, and environmental management was included as one of the major topics in the 8th Development Plan (1992-1996). In 1991, the Ministry of the Environment and Land Planning (MEAT) was established to strengthen environmental management. In 1993, the National Commission of Sustainable Development was created.

After the United Nations Conference for Environment and Development (UNCED: Rio Convention) in 1992, the principle of sustainability became one of the key concepts in the national development strategy. Following this convention, the Government adopted a National Agenda 21 in 1995, which became the core of the 9th economic and social development plan (1997-2001). The key concept of National Agenda 21 is "Sustainable Development" and its main goals are: (a) to preserve the ecological balance, (b) to safeguard natural and human resources, (c) to prevent and reduce the various forms of pollution, and (d) to reconcile the requirements of development with the imperatives of the environment, so as to protect the natural elements (air, water, soil and bio-diversity), improve the living conditions of the people, and attenuate the risks threatening the country's resources. MEAT set some strategies to reach these goals. The core elements of these are:

- To extend the vegetation cover from 11% to 15% of the total area of the country,
- To purify the contaminated aqua-milieus that receive sewage disposal,
- To manage solid waste by equipping the big cities with controlled disposal stations (five stations have been established and 9 are due to start in 2001), and
- To embellish cities by improving city entrances and setting up public gardens and environment boulevards.

In addition, the Government's growing concern for the environment is evidenced by its current actions to protect the coasts, land and biodiversity against such threats as drought and desertification. The core management and conservation projects implemented or initiated in recent years are summarized in Table A3.2.1.

Moreover, the General Direction of Land Development (DGAT), which is one of the directions of MEAT, produces a number of types of development plans for the management of land use; the key land use plans are summarized in Table A3.2.2. These plans are officially approved and used by local and central government to establish sustainable land use patterns in urban and rural areas. The Government has received substantial foreign assistance in past years to help it develop these plans. The project approval process also requires evaluation with reference to the urban development plans, which contain building codes and related restrictions on activities and construction. There is no overlap in the geographical coverage of these development plans.

Table A3.2.1 Environmental Management and Conservation Projects

Natural Environment	Rehabilitation of Degraded Sites (1996) National Study on the Biological Diversity, (1996-1998) Master Plan of Botanic Gardens (1997) Prospecting of Sensitive Natural Areas (1997-1998) Create a National Bank of Genes (1998) Reinforcement of Protected Areas The Blue Hand Project /The Green Hand Project /The Yellow hand Project
Coastal Environment	Management of Sensitive Natural Areas (1997-) National Program for the Protection of Tunisian Coasts against Marine Erosion (1999-)
Industrial Environment	Pilot project for the Treatment of Organic Residue in Zaga, Province of Beja (1994-) A systematic Study on the Packaging System in Tunisia (1996-1998) Study on the Control of Industrial Pollution in Tunisia (1996-1998) Study on the Recycling of Industrial Waste (1998) Sanitation of the Ariana Swamp (1998-)
Urban Environment	Pilot Project for the Selective Collection of Domestic Waste (1994-1996) Creation of Environment Boulevards (1996) Pilot Project for the Collection of Oil Waste (1995-1999) Project for the Elaboration of Municipality Plans of Environment (1997) Pilot Project for the Elaboration of Local Agendas 21 (1999) National program of urban parks

Source: MEAT

Table A3.2.2 Land Use Plans and Documents

Plan	Outline
Schéma National de l’Aménagement de Territoire (to year 2020)	It is nationwide in scope, was developed since 1996, is now available in final form, but has not received definitive approval, which is expected in 2001. It comprises six volumes including a tourism volume. French and German assistance was involved in preparing it.
Schémas Directeurs des Agglomérations Urbaines	14 are available and contain maps to 1/25,000 and 1/50,000 scales. All the key urban areas are covered. They indicate types of land uses, but not density of use or other items that building codes usually cover.
Schémas Directeurs des Zones Sensibles	Some 40 exist. They have been prepared since 1993. Areas containing endangered animal or plant life are covered as well as special environments such as beach, forests/mountains, lakes and lakebeds, desert, and islands.
Schéma National Directeur d’Aménagement Rural	It is also nationwide in scope covering non-urban and non-ecological areas.

Source: MEAT

Currently MEAT, in collaboration with other Ministries (MA, MC, and MTLA) is trying to strengthen ecological and cultural tourism. In this context, a Committee of Eco-tourism, consisting of representatives of MEAT, MA, MC and MTLA, has been set up and has been meeting regularly. Additionally, the National Program of Environment Ecological Projects, which consists of seven projects, has been set by MEAT. However, MEAT is suffering from a lack of budgetary resources, and only a few projects have started to be implemented at the moment.

Table A3.2.3 Environmental Tourism Circuit Projects of MEAT

Project	Purpose/Actions
Water Project	Current plan is to build five water stations following the Roman aqueduct from Zaghouan to Carthage (132km) at Zaghouan, M'hamdia, Bardo, Carthage and Soukra. The project components will be determined based on the results of the study that is currently undergoing.
Land Memory Project	To bring tourists to Tataouine where Dinosaur fossils were discovered
Forest Project	To take tourists through different forests to acquaint them with the variety of fauna and flora
Olive Project	To bring tourists to olive oil production stations where they can see the process of oil production starting from olive crop collection to oil extraction
Island Project	To bring tourists to islands; Jerba, Kerkena, Zembra, Zembretta and Jalta.
Littoral Project	To introduce tourists to the most beautiful coastal areas in Tunisia
Sahara Project	To introduce tourists to the southern landscapes, customs and traditions

Source: Department of Urban Environment, MEAT

One of the strategies for environmental protection adopted by the Government is to impose taxes on hotels. In 1975, a law was passed mandating hotels to pay 1% of their turnover to the municipalities to which they belong. In December 1992, the Government created a Fund for the Protection of Tourist Zones, which is financed through the new 1% tax of imposed on hotels in the 30 tourist zone municipalities that are specified by decrees, was created in order to support the efforts to protect the environment in tourist areas. The fund is utilized for such projects as road improvement, public lighting, improvement of wastewater discharge conditions, and entrance gates to tourist cities.

A3.2.2 Relevant Organizations

(1) Government Agencies

The Ministry of Environment and Land Planning (MEAT), which was created in 1991, is the main organization for the environmental management. The primary role of MEAT is to coordinate the activities of the diverse institutions that are responsible for environmental protection. The core management authorities related to environment conservation are shown in Table A3.2.4. Tunisia has a well-organized institutional framework and the various institutions comprised in it (ANPE, ONAS, APAL and so on) are playing important roles in environmental conservation. Recently, other ministries like the MA, MTLA and MC have also started to involve themselves in environmentally related activities. Thus, effective coordination of the activities of these different institutes and ministries is required of MEAT.

Table A3.2.4 Management Authorities Related to Environment Conservation

Organization	Directions or Agencies
Ministry of Environment and Land Planning	Ministry of Environment and Land Planning (MEAT, 1991) General Direction of Environment and Life Quality/General Direction of Land Planning
	National Agency for Environmental Protection (ANPE, 1988)
	National Office of Sanitation (ONAS, established in 1974 and redefined in 1993)
	National Commission for Sustainable Development (CNDD, 1993)
	National Agency for Coastal Protection and Planning (APAL, 1995)
	International Center for the Technologies of Environment Tunis (CITET, 1996)
	National Agency for Renewable Energies (ANER, 1996)
	National Commission for the Prevention and Struggle against Events of Marine Pollution (1996)
Ministry of Agriculture	Ministry of Agriculture General Direction of Water Resources/Direction of Soil/Direction of the Conservation of Water and Soil/General Direction of Forestry
Ministry of Tourism, Leisure and Handicraft	Tunisian National Tourist Office (ONTT, 1970) -Direction of Heritage and Environment (1996)
	Tourism Land Agency (AFT, 1973)
Ministry of Culture	Ministry of Culture

Source: MEAT, MA, ONTT

(2) Non-Governmental Organizations

There are various domestic non-governmental associations concerned with nature and the environment in Tunisia. The oldest association is the Society of Natural Sciences (1947), which consists mainly of secondary-school teachers of natural sciences. The Tunisian Association for the Protection of Nature and the Environment was founded in 1977 in Tunis and has established many branches all over the country. Additionally, there are more than 10 ecological associations that actively participate in the protection of natural resources. (e.g. The Friends of

Birds, 1975; The National Federation of the Associations of Hunters)

There are two main foreign non-governmental associations operating in Tunisia: The Friedrich Naumann Fund (the Tunisia office was founded in 1964) promotes bilateral cooperation with Germany, particularly with regard to sustainable development and the publication of "The Green guide. The Tunisia section of the World Wide Fund for Nature Tunisia (1994) is particularly active in the domain of humid zones and forests.

(3) Laws, Regulations and Conventions

Many laws have been approved by the Tunisian Government to control pollution, to protect natural resources, to rationalize the management of land, and to create new protected areas (Table A3.2.5). Table A3.2.6 lists the international conventions that have been ratified and signed by the Government of Tunisia to support the conservation of natural resources.

At the project level the ANPE manages the environmental impact assessment procedure defined in a law adopted in 1991, as portrayed in Figure A3.2.1. This procedure represents a safeguard designed to identify at the planning stage any environmentally relevant aspects of projects that may require any additional analysis eventually leading to project modification or cancellation.

Table A3.2.5 Environmental Laws

Resource	Laws
Land/Soil Resources	- Law of 07/10/1958 for the Conservation of forest and agricultural land. - Law of 11/3/1987 to Protect agricultural land against other uses. - The Urbanism and Land Management Code (1979; revised in 1994) for the planning and rational management of urban areas.
Water Resources	- Code of Water (1975) against pollution of surface, underground and maritime water. - Decree of 1985 concerning the treatment of urban used waters.
Air Quality	- Law of 1988 concerning air pollution and noise emissions.
Biotic Resources	- Forestry Code promulgated by the law of 04/07/1966 and reworked by the law of 13/04/1988. The Forestry Code concerns: - Forestry System (Articles 1 to 164). - Hunting (Articles 165 to 206). - Protection of Nature and wild fauna and flora (Articles 207 to 231). - Prior Impact Studies (Article 208). - Protected Areas and Humid Zones (Article 218 to 224). - Decree of 18/06/1988 by MA relative to the hunting system in forestry areas. - Decree of 31/01/1994 relative to the organization of fishing and the protection of aquatic species. - Decree of 28/09/1995 by the Min. of Agriculture delimits the maritime zones for fishing and the species that cannot be captured.

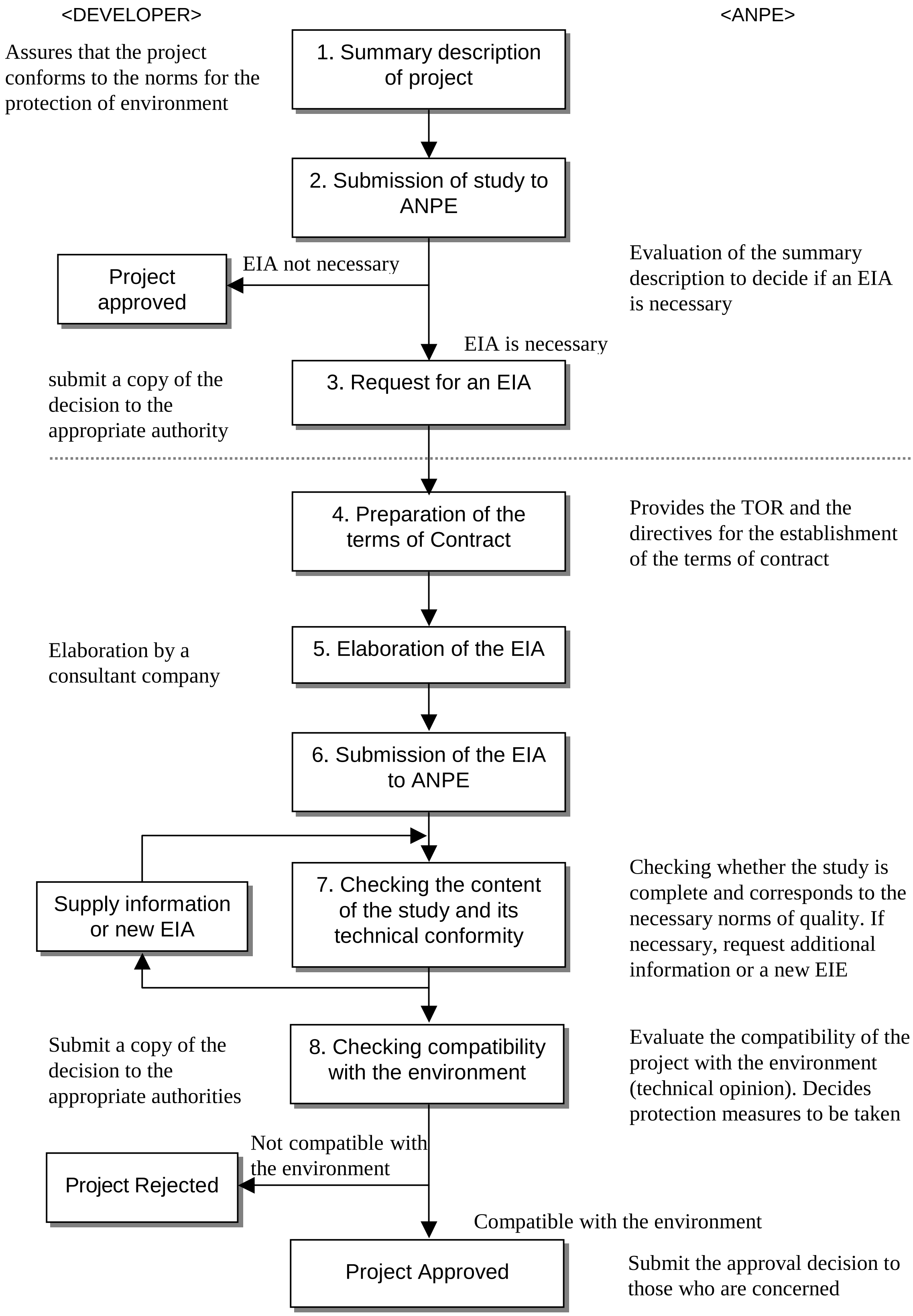
Source: MEAT, Etude de la Diversité Biologique de la Tunisie, 1998; APAL

Table A3.2.6 International Conventions Signed by Tunisia

- International Convention for the Prevention of the pollution of Sea Water by hydrocarbons (1973).
- Washington Convention (CITES) for the international trade of endangered wild fauna and flora (1974).
- Convention for the protection of world cultural and natural heritage (1974).
- International convention on the civil responsibility for damage due to hydrocarbon pollution (1976).
- International convention concerning the intervention in high seas in case of accidents that may result in pollution by hydrocarbon or other substances (1976).
- Convention on the prevention of sea pollution by the immersion of waste (1976).
- African Convention for the conservation of nature and natural resources (1976).
- Convention for the protection of the Mediterranean Sea against pollution (1977).
- Protocol relative to the cooperation between North African countries in struggling against desertification (1979).
- Convention of RAMSAR concerning the protection of humid zones of international importance (1989).
- Protocol relative to specially protected areas of the Mediterranean (1983).
- Bonn Convention concerning the conservation of wild fauna migratory species (1986).
- Rio Convention on biologic diversity (1993).
- Berne Convention concerning the conservation of wild life and the natural milieu of Europe (1995).
- International Convention for fight against the desertification (1995)

Source: MEAT, Etude de la Diversité Biologique de la Tunisie, 1998

Figure A3.2.1 Flow Chart of Environmental Impact Assessment (EIA) in Tunisia



Note: For clarify the diagram has been slightly simplified

Source: ANPE, Laws No.91-362 of 13 March 1991

(4) International Cooperation

In accordance with the recommendations of the Rio Convention, various environmental projects funded by international agencies have started in Tunisia. These projects are summarized in Table A3.2.7 below.

Table A3.2.7 Environmental Projects by International Organizations

Sector/Organization	Projects
International Organization	
FEM/PNUE	National Study on Biodiversity in Tunisia, resulting in a National Strategy and an Action Plan for Biodiversity
GEF/WB	Project on the conservation of Biodiversity and the management of protected areas
GEF	Bio-safety Project
UNDP	Micro-projects for the inhabitants in and around protected areas
Bilateral Organization	
Germany (through BMZ and GTZ)	Cooperation concerns the fields of sanitation, de-pollution, solid waste, management of natural parks and resources, desertification and personnel training.
France (through IFEN, AFD and ADEME)	Developing a program of awareness-raising about energy control and environment protection (our precious planet). Monitoring and control of air quality (with ANPE and CITET) and coastal management (APAL). Rain water project in Ben Arous and the hygienic improvements in densely populated areas.
The Netherlands and Belgium	Financing projects for the purification of used water and the project for the purification of the South Lake of Tunis.
Switzerland	Reinforcement of the capacity of emerging NGOs.
Canada	Preparation of pedagogic guides for environmental education in primary and secondary schools (with PUND).
Luxembourg	Pilot project to test the selective sorting of domestic waste. Project to double the capacity of SOTULUB for the recovery and recycling of used oils. Extending the training infrastructures and setting up a new laboratory for the control and analysis of solid waste at CITET.
Japan	Provision of the necessary financing for the purification of used water from the zones of Jerba-Aghir and Great Sfax.
Spain	Project to provide solar electricity in rural areas (245 houses in Seliana and Zaghouan).
China	Pilot project for the production of bio-gas from poultry waste (with ANER).
European Community (through such programs as Euro-Med, METAP, MEDA, LIFE, etc.)	Technical assistance to ensure the training of technicians in the domain of renewable energy (170 technicians). And the management of environment. Agenda 21 Project in the side basin of the north-west of Tunisia. Reinforcement of the technical and institutional capacity of intervening parties in the protection against pollution, the participative management of industrial zones, and the preservation and rehabilitation of the fragile insular ecosystems.
The Netherlands and Sweden	Recycling Tunisian debts to the Netherlands and Sweden to be used for the protection of environment (protection of pre-urban forests, management of the side basins affected by hydraulic erosion, project of selective sorting out of solid waste, etc.).
Universities	
Universities of Sciences and Letters	Conducting studies about the environment and the historical/ archeological sites
International NGOs	
WWF	Micro-projects for the inhabitants around El Feija National Park.
IUCN	Consultation about the Ichkeul National Park

Source: MEAT

Recently, the Government of Tunisia has started to cooperate closely with the countries of the Arab Maghreb Union, particularly in the field of sanitation, as well as with other countries of the Mediterranean following the Barcelona Convention and the Mediterranean Action Plan (MAP). As is the case for other Mediterranean countries, the protection of the Mediterranean Sea is one of the main concerns for Tunisia.

A3.3 PROTECTED AREAS

A3.3.1 Natural Parks and Reserves

The legal provision for protected areas in Tunisia is included in Chapter III of the Forestry Code of 1993 which states that there are two types of protected areas: National Parks (N=8) and Natural Reserves (N=16) (Table A3.3.1, Figure A3.3.1). Most protected areas have been established during the last 10 years. Additionally, the Government is currently establishing a number of Recreational Forests that are forests or sections of forests that satisfy a tourist or recreational interest (Forestry Code, Article 218). Now MEAT has a plan to establish National Marine Parks and has been working on a new law to cover them. The Forestry Code as well as various decrees and laws specify the regulations concerning the creation and the management of National Parks. The application of this legislation is incumbent on the General Direction of Forest and the Direction of Hunting and National Parks of the Ministry of Agriculture. As for the management of these protected areas, only National Parks are directed by conservators who belong to CRDAs (Commissariat Regional de Development Agricole).

Six National Parks have eco-museums, namely Ichkeul, Chaambi, Bouhedma, Bou kornine, Feija and Sidi Toui. The MA has a plan to establish one more eco-museum in the parks of Jbil. These plans, however, face some budgetary constraints, especially for construction or renewal, human resources (e.g. training of managers and interpretation guides), and management.

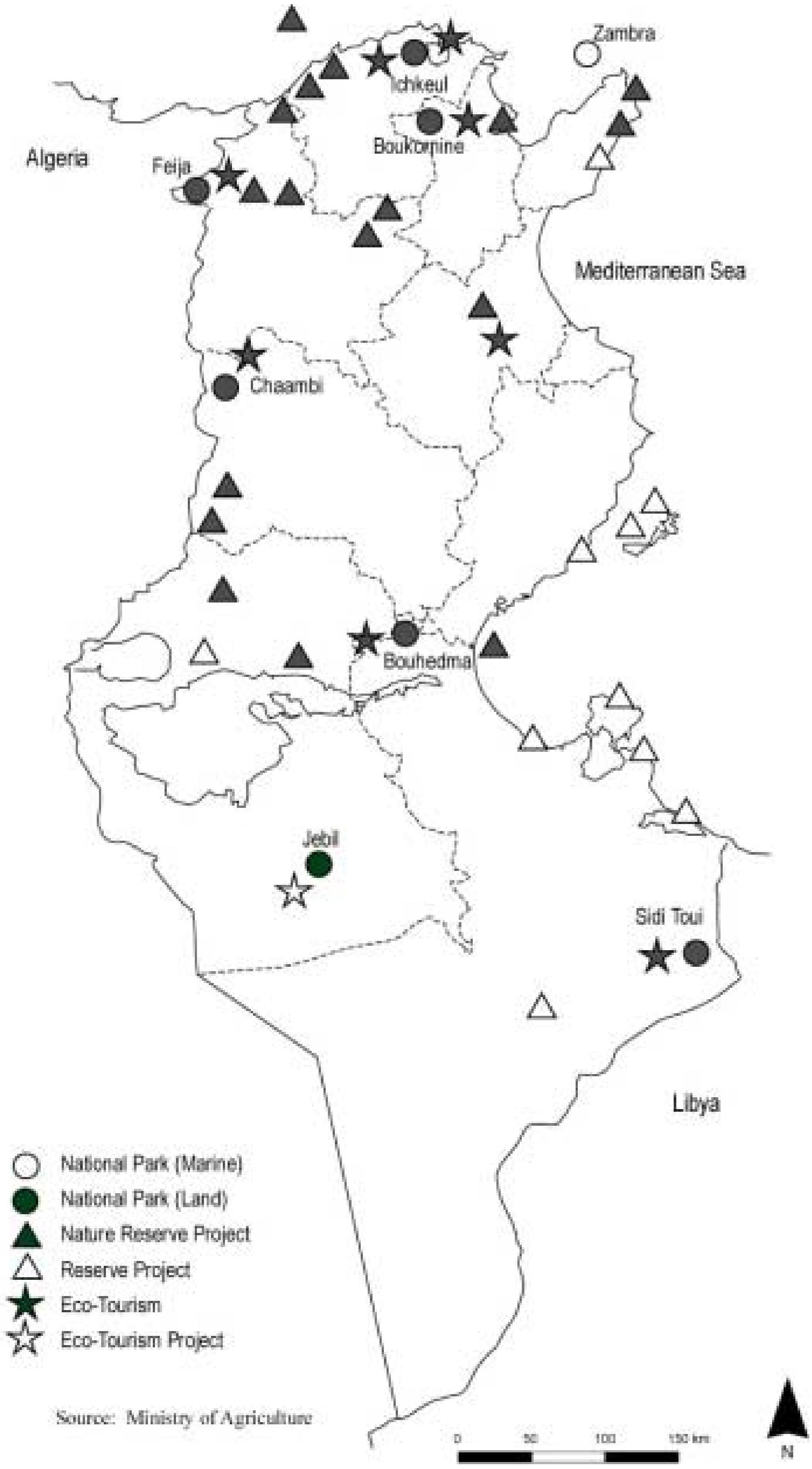
TableA3.3.1 Types of Protected Nature Areas

	Authorization	Definition
National Park Number: 8 Area: 201,788ha	Designated by presidential decrees after recommendations by the MA and MEAT.	A National Park is a relatively vast territory that represents one or more ecosystems, generally showing little or no evidence of transformation as a result of exploitation and human occupation, and where the vegetation and animal species, the geomorphologic sites and the habitats offer special interest from a scientific, educational and recreational viewpoint or where there are natural landscapes of a great aesthetic value
Nature Reserve Number:16 Area: 16,138ha	set up by the MA	A Nature Reserve is site smaller in size, designed for the continued existence of natural animal and vegetation species as well as their habitat, and the conservation of migratory fauna species of national or international importance.

Source: MA, Forestry Code, Article 218, 1993

The Forestry Code also makes provision for Hunting Reserves. Hunting, fishing and logging activities are strictly regulated. Practitioners are required to obtain written permission from the Ministry of Agriculture. The Ministry also publishes an annual decree specifying hunting periods and locations as well as which and how many animals can be hunted. The decree for 1999-2000 lists about 30 type of animals, including 25 bird species that can be hunted. According to the General Director of the Direction of Conservation of Forest, the Government is willing to increase the number of wild boar hunters as the population of wild boars has grown, and become harmful for some types of agriculture.

FigureA3.3.1 National Parks and Nature Reserves in Tunisia



A3.3.2 Sensitive Areas

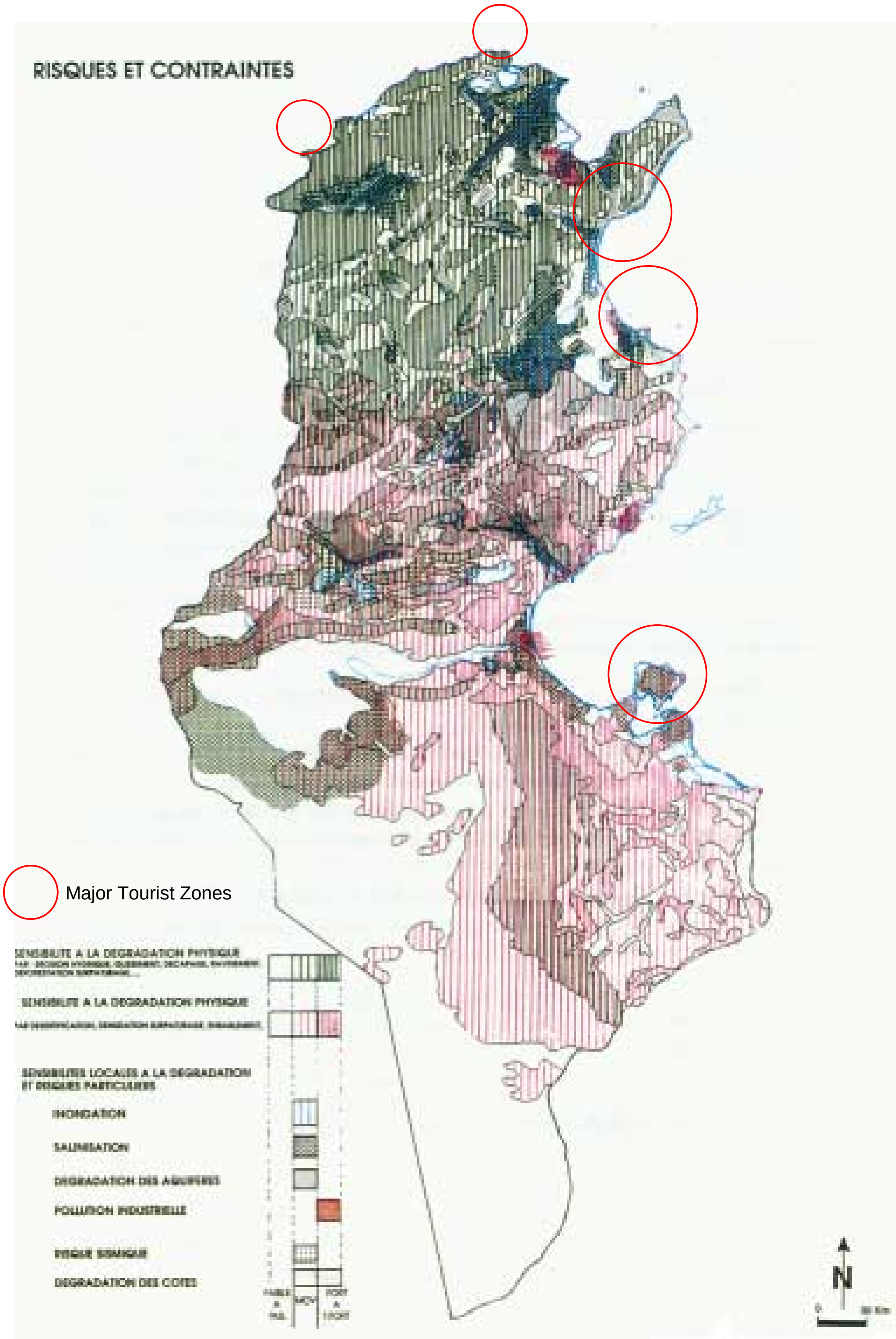
MEAT has identified several sensitive areas, which need special consideration for development. Major sensitive issues of each region are shown in Table A3.3.2 and situation of natural environmental, such as erosion area, water and soil resources are shown in Figure A3.3.2, Figure A3.3.3 and Figure A3.3.4.

Table A3.3.2 Sensitive Issues in Each Region

Region	Natural Characteristic	Sensitive issues
Northern Region (Tell)	- Essential region for water supply of Tunisia. - 80% of Northern water table has potential to mobilize and 80% of with in that have good quality - Composed by the most rich soils of the country and 53% of irrigated area are situated - The major mountain and forestry region	- Risk of deterioration of water table/ aquifers related to overexploitation *Sensitive zones: around Bizerte lake, in the Milliane and Grombalia plains, the coastal plains of eastern Cap-Bon and some part of the Haut-Tell - Deterioration of vegetation by: i) using of wood or coal as major ligneous fuel for daily living (95% of households use these kind of fuel in this region) ii) practicing of the diversified agricultures (e.g. Big cereal exploitations blend with the small soils of piedmont) *Sensitive zones: along the forest fringes (habitation area)
Steppe Region (Semi-Arid and Arid)	- Full of geographical variety, such as high steppes, low steppes and southern steppes. - Big climatically changeableness area because of the influence of the Saharan and Mediterranean domain. - Surface flows are very limited and climate condition is very changeable.	- Hydrous erosion problems *Sensitive zones :particularly in the massifs and piedmonts of high steppes related to agriculture and deforestation. - Exiting of wind erosion related to over use of pasture land *Sensitive zones : the slope/basin of the Zeroud, North -west of Sidi Bouzid. - Risk of aquifer deterioration *Sensitive zones: the Kairouan plaie, the Sidi-Bouzid plain, the Kasserine plateau and plain, Sbeitla, Gafsa and El Guettar, Gabes, and area surrouding Jerba, Zarzis and Mednine.
Desert Region	- Very limited surface water resources area, however existence of high potential of deep-water table (but unable to renewal). - Very dry area (Sahara). - Existence of very sensitive and special eco-system (e.g. Chotts, oasis)	- Risk of deterioration of the water tables related to i) increase of surface wells and drilling. This causes lowering of artesian water and drying up of wells, ii) overuse of water by irrigation. - Existence of desertification problem . *Sensitive area: Touzeur, Douz, Kebili - Risk of deterioration of sensitive eco-system of Chotts related to construction of road, irrigation and urbanization
Littoral	- Length of coastal line is 1,300km, surrounded by number of islands. - Some of the place have very sensitive eco-system (e.g., Northern coast line, the Cap Bon peninsula, the Sahel) - Concentration of the population and human activities on these areas. (Two-thirds of the national population80% of the surface areas of the existing or potential industrial zones)	- Existence of coastal erosion problem *Sensitive zones are: (see Figure A3.3.2) - Existing of land salinization problems related to i) rising of Mediterranean sea level and ii) phenomena of subsidence, but it is accelerated by human intervention such as overexploitation of the water table *Sensitive zones: the northern part of the Gulf of Gabes and in the Medjerda delta - Water pollution problems related to rapid growth of the cities and the industrial & transportation activities. *Sensitive zones are: (see Figure A3.3.3) - Risk of deterioration of fauna and flora related to the extension of building constructions. *Sensitive zones:Gulf of Gabes and Urbanization zone

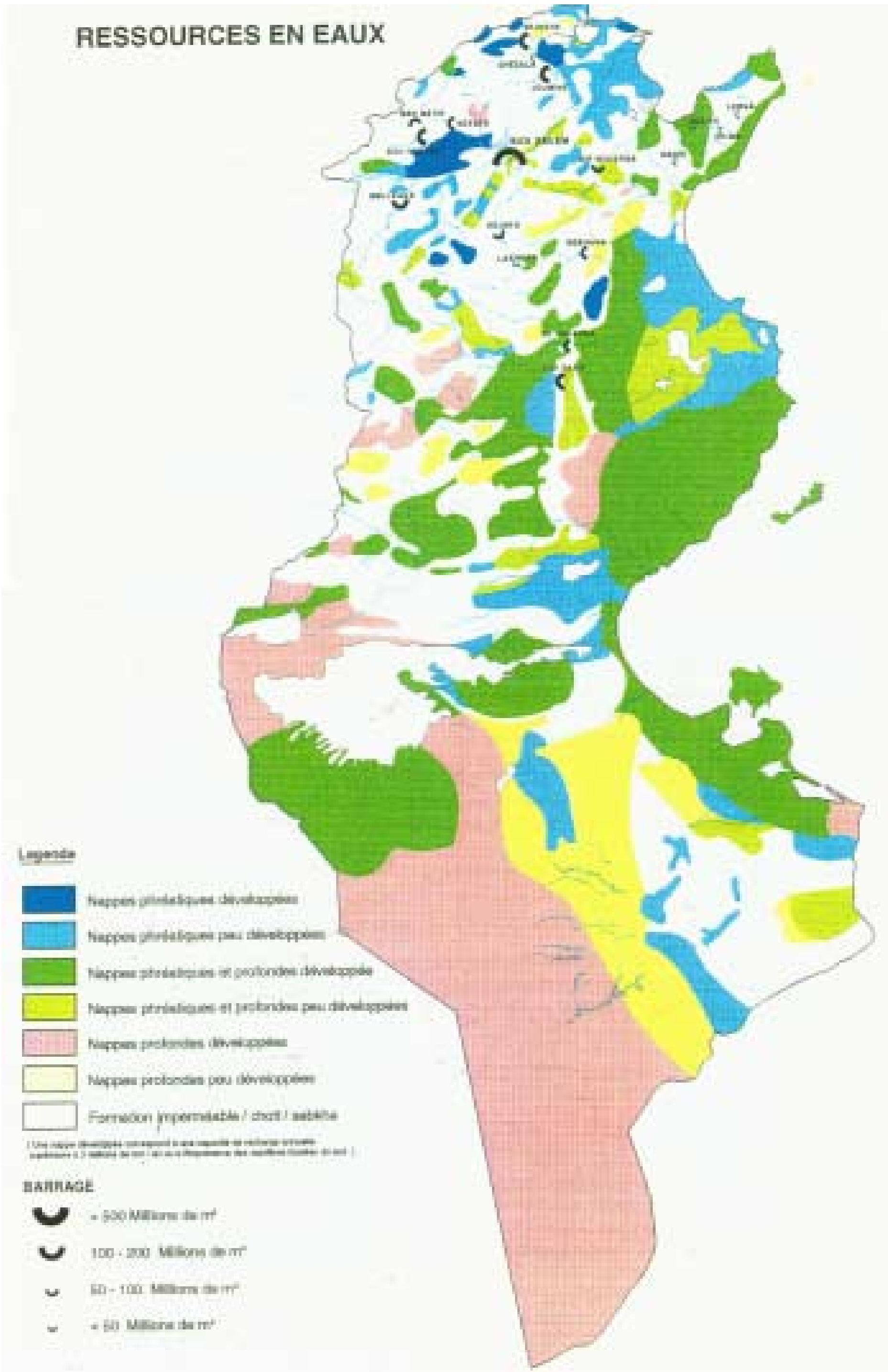
Source: MEAT/DGAT, Schema Directeur D'amenagement du Territoire National (1996-2000)
MEAT, Etude de la Diversité, Biologique de la Tunisie, 1998

Figure A3.3.2 Coastal Erosion area, Sensitive Area and Tourist Zones



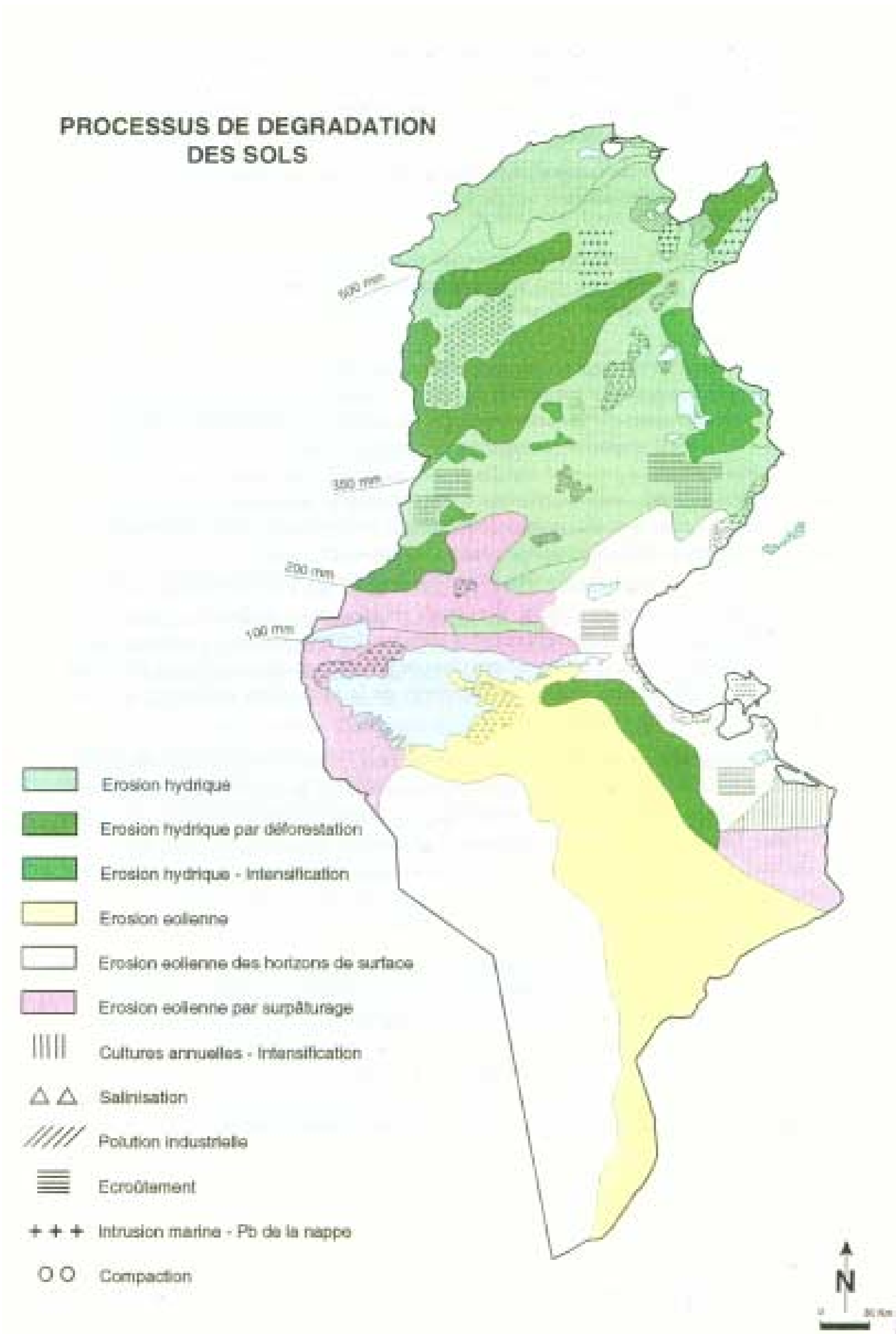
Source: MEAT, JICA Study Team

Figure A3.3.3 Ground Water Conditions



Source: MEAT, MA

Figure A3.3.4 Soil Conditions



Source: MEAT

The sensitive areas requiring the formulation of development master plans, as defined by Order No 98-2092, October 28 1998 are as follows :

- Tabarka – Zouarâa
- Extreme – North coast area (between Zouarâa and Bizerte) ;
- Bizerte East coast (Bizerte-Ghar El Melh) ;
- Carthage – Sidi Bou Saïd ;
- Cap Bon East Coast ;
- Cap Bon West Coast ;
- Selloum Hergla ;
- Khnis – Bekalta ;
- El Ghadana – Echebba- Melloulech ;
- Kerkenah Islands
- Mahrès Skhira ;
- Gabès – El Jorf ;
- Jerba Island ;
- Zarzis ;
- El Bibane ;
- South Sahara dry areas (Tozeur- Kébilli – Tataouine) ;
- Highland steppes ;
- Lowland steppes ;
- Gafsa Mining area.

Table A3.3.3 indicates the sites and areas defined as priority areas following a study undertaken by MEAT (Study on the identification of sensitive natural areas).

Table A3.3.3 Sensitive Sites and Areas

	Name	Size	Characteristics
1	Atatfas Valley	Isolated pockets	Oak tree scrubland (Quercus suber) with a regressive tendancy in the environment
2	Djebel Abderrahmane Anticlinal	Isolated pockets	Kermès Oak scrubland (Quercus cocifera) agro-sylvo-pasture ecosystems.
3	Bouabdella Site	4 ha	Maktar Cypress (Cupressus sempervirens varnumidica), remnant site whose last aging stands cannot regenerate..
4	Kersa Forest	5 800 ha	Alep Pine (Pinus halepensis) : very advanced degradation which can be reversed.
5	Djebel Serj Site	Isolated elements	Montpellier Maple tree (érable de Montpellier)
6	Bouzaiène, El Gallel, Manknassy Area	Small scattered stands	Atlas Pistachio Tree (Pistacia Atlantica), threatened endemic species.
7	Zone de Jbel Sidi Aïch	Over 100 000 ha	Highland steppes Alfa (Stipa tenacissima). Water and wind erosion are developing along with alfa degradation.
8	Beld El Talh, El Guettar Area	5 to 20 trees/ha on 20 to 30 km square kilometers	Gum Tree (Accacia raddiana))
9	Rjim Maatoug Area and Ghouiba Essouda Site	5 000 square kilometers	Conservation of rare species, fauna in particular : gazelle leptocereous, desert fox, jackal and fennec.
10	Toujane Site	4 000 ha	Matmatas Red Juniper (*Juniperus phoenicea*)
11	Eastern Erg Area, Jbil Region	17 200 square kilometers	Rare endangered animal species protected under the Washington Convention and plant species such as *Calligorum azel* and *Calligorum arich.*
12	Sidi Al Mekki Sebkha and El Ouafi, Northern Sebkha	12 600 ha	Humid areas very sensitive to degradation factors and submitted to strong human pressure
13	Ghar El Melh Laguna	3 135 ha	Humid areas very sensitive to degradation factors and submitted to strong human pressure
14	Nafzaoua Zirats, natural sources and micro-oasis	Isolated sources and micro-oasis	Humid areas and forming groundwater resurgence points.

Source: MEAT

A3.4 KEY ISSUES RELATED TO TOURISM DEVELOPMENT

Since the late 1980s, the Government has been developing conservation systems for the natural environment; as a result basic strategies, laws and institutional structures underlying environmental conservation already exist in Tunisia.

Potential issues and problems concerned with the environment have been clearly pointed out in several surveys carried out by MEAT. As summarized in Table A3.3.2, major causes of these problems are mainly due to natural phenomena, and in agricultural and industrial activities. Some of these issues (e.g., over-use of the underground water in some coastal areas, coastal pollution) are already being tackled by MEAT or other agencies. However, in most cases, efficient countermeasures are still under study.

When it comes to the relationship between tourism development and natural environment, tourism is not the major factor causing environmental problems at the moment, mainly due to the fact that activities are largely limited to “tourist zones”, and also due to efforts made by the various related institutions, such as MEAT, APAL, ANPE, AFT (ONTT) and municipalities. In particular, since introduction of the EIA procedure, measures to be undertaken are clearly examined before the project starts. Furthermore, it should be noted that tourism development has contributed to consolidation of the regional infrastructure, and has made a positive impact on the environment in terms the level of living condition and social environment.

However, it is true that there are still some serious environmental problems caused by tourism activities. As the “natural environment” is very essential element of Tunisian tourism, conservation of natural environmental is obviously extremely important. Therefore, enhancement of environmental conservation capability in the tourism sector is essential. Based on the field surveys and interviews with relevant agencies, as well as the study results carried out by MEAT, key issues related to the tourism development in Tunisia were identified as follows:

A3.4.1 Natural Environmental Protection

(1) Excessive Concentration of Tourism in Coastal Areas

Out of existing 17 tourist zones, 12 zones are located in coastal areas (85% of total accommodation). Out of 14 planned tourist zones, 13 zones will be established in coastal areas. In Tunisia, the major part of tourist activity is located in coastal areas and this leads to the environmental problems detailed below:

a) Imbalance of the ecosystem, coastal erosion problems and degradation of the natural flora caused by:

- Extension of construction in the coastal humid areas and agricultural land where there is a very sensitive ecosystem.

- Removal of sand from the beaches and sand dunes due to construction of the tourist zones. (At the present time, the law prohibits this, however, it happened in the early period of tourism development)
- Destruction of coastal sand dunes by tourist activities (a high density of beach tourists and beach facilities).

b) Degradation of coastal landscape as a result of long tourist zones stretching along the seafront, construction of buildings and high fences which do not harmonize well with the surrounding landscape.

c) High consumption of water resources at tourism sites and generation of an enormous amount of sewage.

According to SONEDE, the tourist water consumption accounts for 6.1% (17million m3, 1999) and it is not the high. However, the average of daily tourist consumption amounts to about 480 liters/day per tourist, a very high rate compared to domestic consumption, which is less than 53 liters/day per Tunisian inhabitant. In the National Master Plan, it is mentioned that there is a fear to have water shortage problems especially in southern part of Tunisia, because of the rapid population growth (Table A3.4.1), problems of quality deterioration of ground water and so on. Therefore, there is a need to minimize the amount of water consumption in tourism site to support the water conservation objective of the country.

Table A3.4.1 Population Projection

Region	1998	2005		2015	
District of Tunis	1,988,300	2,259,700	(+13.6%)	2,813,800	(+24.5%)
North east	1,274,900	1,433,800	(+12.5%)	1,558,500	(+ 8.7%)
North west	1,259,800	1,337,400	(+ 6.2%)	1,410,800	(+ 5.5%)
Central west	1,368,000	1,379,500	(+ 0.8%)	1,508,300	(+ 9.3%)
Central east	2,001,900	2,387,900	(+19.3%)	2,720,000	(+13.9%)
South west	558,600	620,500	(+11.1%)	745,400	(+20.1%)
South east	880,800	996,200	(+13.1%)	1,069,200	(+ 7.3%)
Total	9,332,300	10,415,000	(+11.6%)	11,826,000	(+13.5%)

Source: INS

(2) Issues of carrying capacity of tourism development

Tunisia has nearly 40 years experience in tourism development and received 5.0 million foreign visitors in 2000. As mentioned above, some environmental issues do exist; on the other hand, there is still large tourism development planned, especially in the coastal area. Therefore it is important to study how to develop further tourism zones with limited carrying capacity of the coastal area on a long-term sustainable basis.

(3) Lack of a comprehensive environmental data collection system at tourist sites

There is a sanitary and quality-control system at the tourist zones conducted by CRTs. However, a systematic monitoring system for checking and evaluating the comprehensive environmental conditions in and around major tourist zones that could be used to draw up effective strategies of environmental conservation and management is still under development.

(4) Needs for early stage collaboration between tourism developers and relevant authorities with regard to environmental conservation

In Tunisia, the system of Environmental Impact Assessment (EIA) has been conducted since 1991, and in general, it has been quite effective. Nevertheless, it has to be admitted that there are some difficulties in controlling all the projects even with the use of EIAs. In order to realize tourism planning which is in harmony with the environment and pays more attention to the environment than in the past, it is necessary to establish exchanges between developers and the environmental side, particularly with ANPE, at the earliest possible stage, for example, at the feasibility study stage.

(5) Needs for enhancement of environmental conservation in the tourism sector

Natural environmental conservation has been carried out by various different authorities (c.f. Table A3.2.4). In the tourism sectors, the Environment and Patrimony Department of ONTT has responsibilities for the environment. However, the current task of this section is mainly to carry out presentation and cultural resources. In spite of creating annual strategies for the promotion of conservation in tourism sectors, the reality of the situation is that there is a need to enhance the human resources and structures of this section.

(6) Lack of awareness of the importance of environmental conservation from the point of view of protecting resources valuable for tourism

The concept of “sustainable development” is well-known to tourism sectors, but when it comes to the point of “putting into action”, not many stakeholders are interested in wrestling with the “sustainable development of tourism”. Particularly, there are:

- Lack of a long-term vision of tourism development and of a well-shared concept and strategies for conserving resources that are essential to tourism . In particular, there is a lack of coordination between relevant authorities and the private sector (e.g. hotels, travel agencies)
- Lack of knowledge of environmental conservation in the tourism sectors, (especially among hotel staff, guides, drivers) and on the part of individual tourists.

A3.4.2 Environment Rehabilitation and Beautification

(1) Insufficient environmental upkeeps of tourism sites

According to on-site inspections of major tourism sites, and also the tourist survey conducted in July-August 2000 (Table A3.4.2), environment conditions in and around tourist sites are not well managed. The result of this survey shows that tourists are satisfied with the seaside and inland landscape, but with regard to urban amenities and sanitary conditions, only around 20% of tourists are satisfied with the conditions. Specific details are as given below:

- The problem of litter discarded at tourism sites, especially in the summer in the beach areas (and also in the cities, medinas, and the other cultural sites).

TableA3.4.2 Rating of Environmental Aspects by Vacationers

Survey Item		% of those rating the item as "Good"	Remarks
LANDSCAPE			
	Seaside landscape	73.7%	Among beach vacationers
	Inland landscape	58.8%	Among vacationers focusing on natural beauty
ENVIRONMENTAL CONDITIONS			
	Urban amenities	18.5%	Among beach vacationers
		18.6%	Among vacationers generally
	Sanitary conditions	22.1%	Among vacationers generally
		23.5%	Among beach vacationers

Source: JICA Tourist survey, July-August 2000

(2) Lack of landscape upkeep

Insufficiency of attractively landscaped and welcoming environment for foreign tourists around entrance areas, particularly in and around tourist sites as below:

- between the international airports and cities,
- at the entrance areas to the tourist zones and major cities, and
- along the main tourist route (landscape road used).

A3.4.3 Sustainable Use of Natural Resources

(1) Large unbalanced concentration on use of beach resources

At the present time, the main natural resources used as tourism resources are the beach area and one part of the Sahara. Tunisia has only a small land area, but has a rich variety of natural resources dotted around the country in a compact fashion. In view of the current concentration of tourism activity in the beach area, one issue at present is how to reduce this concentration and distribute activity into other regions, thereby reducing the impact on the beach environment. With this objective in mind, the importance of utilizing and opening up, as tourism resources, the undeveloped natural resources scattered around the country, can clearly be seen.

(2) Promotion of ecological tourism

At the present time, the promotion of ecological tourism is being examined in MEAT, MA, and ONTT. The issues involved in the promotion of ecological tourism are as listed below:

- Creation and development of sites and facilities that will be fascinating and attractive to tourists
- Establishing a system of site management that will satisfy tourists
- Training guides who are able to comment on and present natural resources to tourists in a way that will grip and hold their interest

- Examination of ways of developing autonomous, locally based systems of site administration（system of returning benefits to the local region）
- Production of guidelines that will form a handbook to be used in the promotion of ecological tourism