Republic of Tunisia

Ministry of Development, Investment, and International Cooperation (MDICI),

South Development Office (ODS)

Project on Regional Development Planning of the Southern Region in the Republic of Tunisia

Final Report

Executive Summary

November, 2015

JICA (Japan International Cooperation Agency)

Yachiyo Engineering Co., Ltd.
Kaihatsu Management Consulting, Inc.
INGÉROSEC Corporation

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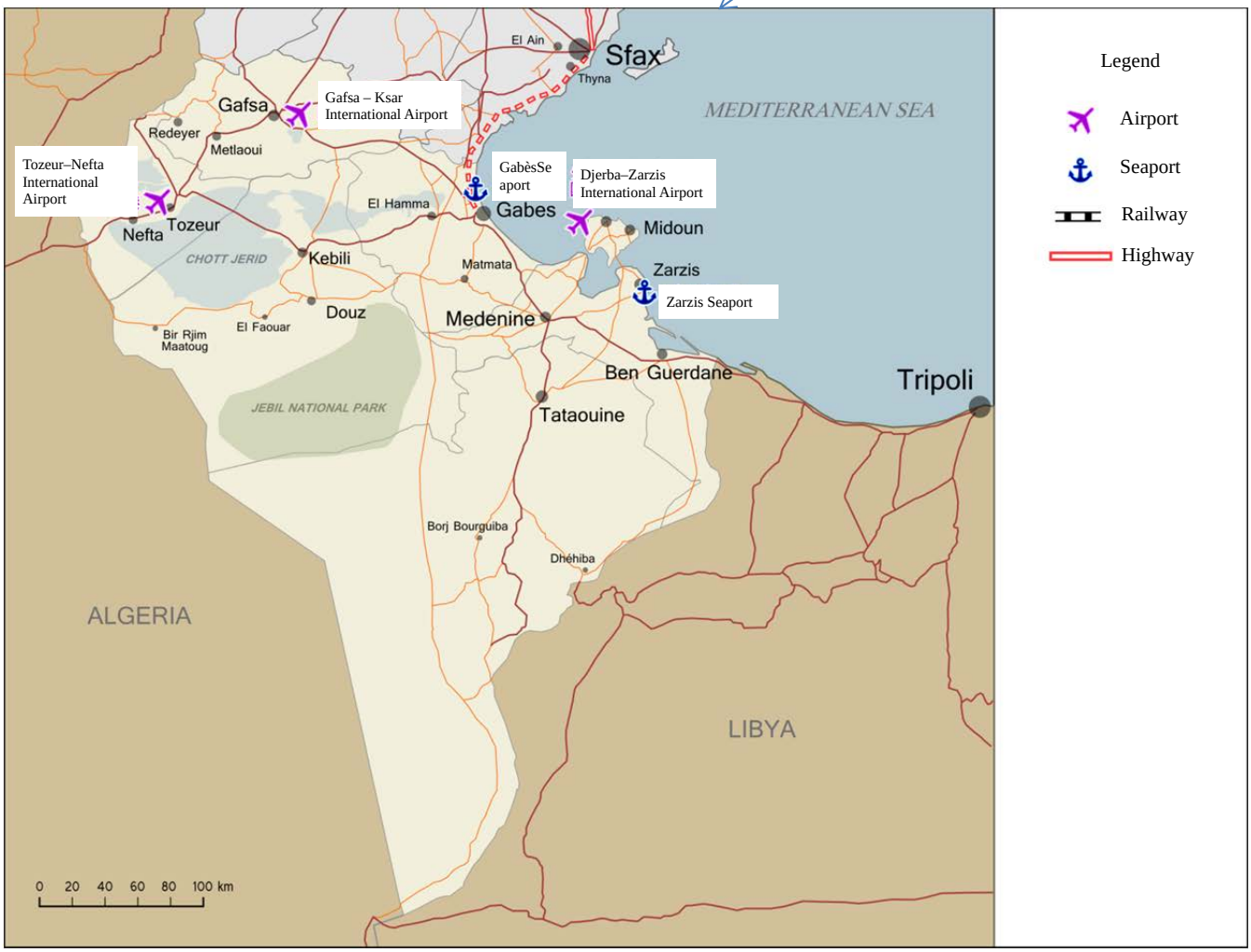
Location of Tunisia

Tunisia and surrounding countries



Target Area (Six Governorates in the Southern Region)

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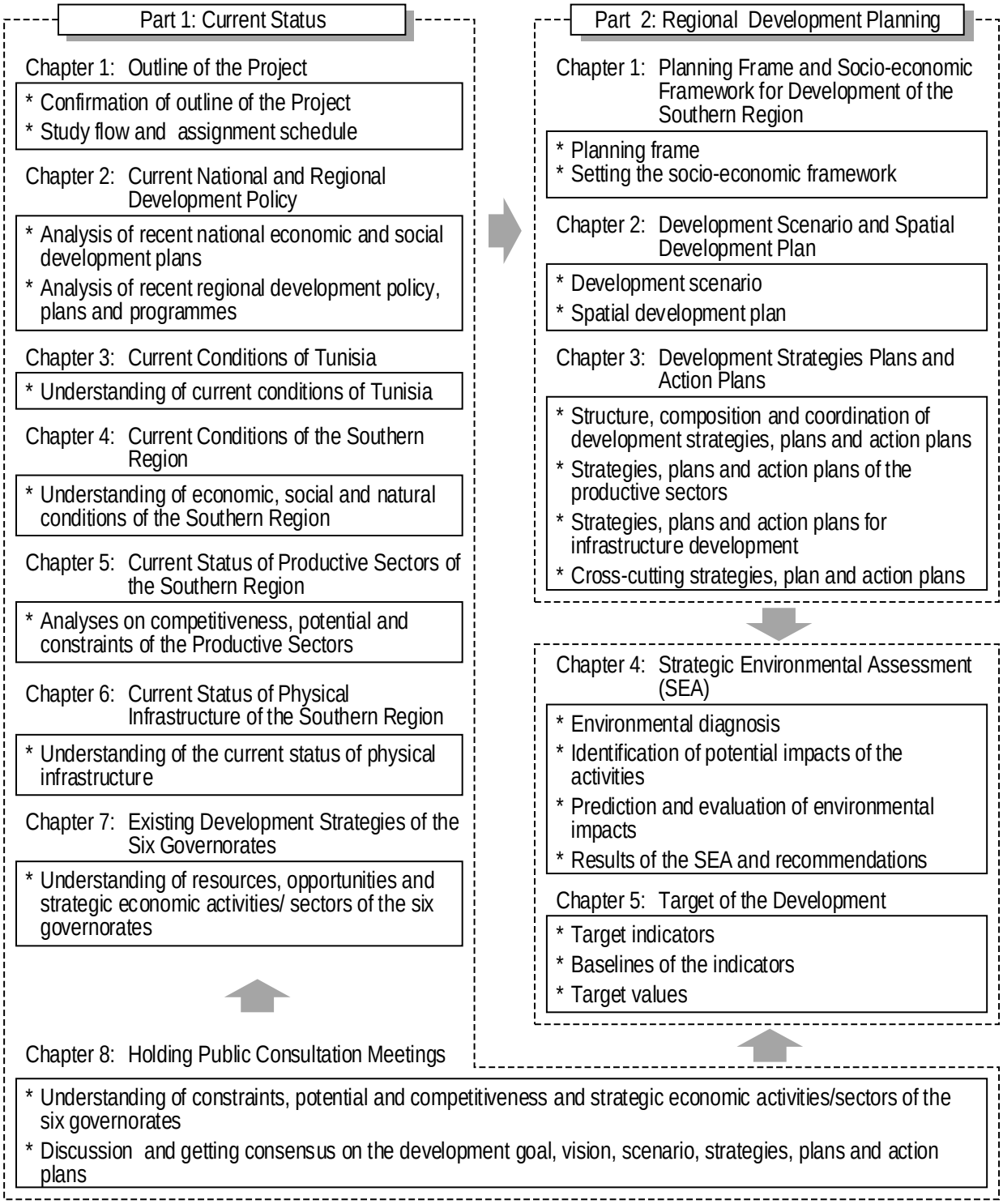
Executive Summary

Composition of the Report

The composition of the Final Report of the Project on Regional Development Planning of the Southern Region in the Republic of Tunisia is outlined schematically below. The report is composed of Part 1, which describes the current status of Tunisia and the Southern Region, and Part 2, which explains the strategies, plans and action plans for the development of the Southern Region proposed by the Project.



Main Report consists of the following chapters:

Part 1: Current Status of Tunisia and the South

Chapter 1 describes background and Project outline, which includes the title, the overall goal, the expected goal after Project completion, the outputs and the activities, as well as the flow of Project implementation and assignment schedule of the JICA Experts as preconditions and bases for regional development planning under the Project.

Chapter 2 analyses recent national economic and social development plans, i.e., the XIth and XIIth National Economic and Social Development Plan, the Jasmine Plan/Development Strategy for the New Tunisia, the New Development Strategy for Regional Development, typical and large-scale development programmes/projects recently planned for the Southern Region, and Master Plans on Territorial Development for Economic Regions of the South (Southeast and Southwest) in order to understand the bases for regional development to be applied mainly for formulation of the development goal, vision, scenario and strategies. This chapter also analyses institutional and legal frameworks for regional development. The results of the analysis are used mainly for the formulation of regional development administration strategies.

Chapter 3 studies economic and social conditions of Tunisia to understand basics for the regional development planning.

Chapter 4 explores economic, social and natural conditions of the Southern Region to establish a basis for assessing the constraints and potentials of the productive sectors of the region.

Chapter 5 assesses productive sectors of the Southern Region: 1) agriculture, fishery, livestock breeding and food-processing, 2) mining and other industrial sectors (including solar energy), 3) tourism and 4) handicraft, referring to Michael Porter's Diamond Model with regards to factor conditions (human resources, physical resources, knowledge resources, capital resources and infrastructure), demand conditions (in the domestic market), related and supporting industries, firm strategy (structure and rivalry), and government (intervention and affects). The chapter evaluates the potentials and constraints of the productive sectors of the region. Strategies, plans and action plans are formulated based on the results of the analyses.

Chapter 6 analyses current conditions of infrastructure regarding i) transport, ii) water supply/ wastewater treatment, iii) power supply and iv) telecommunications establish bases for formulating of strategies, plans and action plans for the sector development.

Chapter 7 summarises the strategies of the six governorates of the Southern Region formulated in February 2012, in order to understand the potential economic sectors to be promoted. The strategies were reviewed in the first round public consultation (P/C) meetings, and the potential economic activities reviewed have been considered in the strategy formulation. The results of resource analyses in the respective governorates have also been taken into account.

Chapter 8 describes the results of public consultation meetings held in the Project as a participatory approach for regional development planning. In the first round P/C meetings, the participants helped with the diagnostic studies by the JICA Expert Team (JET). Subsequent P/C meetings generally proceeded as follows: initial drafts prepared by the JICA Expert Team were presented by the South Development Office (ODS) staff, comments and opinions to the drafts were raised, and the drafts were reviewed by JET/ODS.

Part 2: Regional Development Plan of the South

Chapter 1 defines the planning frame, composed of the development goal, vision, strategies, plans and action plans. The chapter forecasts the socio-economic framework, e.g., the population and economically active population of Tunisia and the Southern Region, and economic growth rate and unemployment rate of Tunisia for the years 2025 and 2035. With these forecast, the chapter estimates other economic parameters to examine the implications of economic development of Tunisia and the Southern Region.

Chapter 2 discusses and selects the development scenario for achieving the development goal and vision. The chapter recommends how the productive sectors of the Southern Region are to be developed and how the infrastructure development is to support the promotion of the productive sector under the selected scenario. The chapter also includes a spatial development plan proposing the aerial development of production bases, poles, and centres and discusses the direction of infrastructure development.

Chapter 3 describes the structure and composition of development strategies, plans, and action plans. The chapter proposes strategies, plans, and action plans for infrastructure and crosscutting issues in productive sectors. As for crosscutting issues, strategies, plans, and action plans of a) regional development administration, b) groundwater management, and c) investment, marketing, and trade promotion are separately discussed and proposed among the various commonly important issues discussed in the respective productive and infrastructure sectors such as human resource development and research and development.

Chapter 4 explains the results of strategic environmental assessment (SEA). The SEA has been implemented in three phases. In the first phase, environmental diagnoses that have raised important environmental issues were discussed. In the second phase, the potential environmental impacts of the activities of the productive sector promotion and infrastructure development were identified in the context of pollution and the natural and social environments. In the third phase, the direct, indirect, and cumulative environmental impacts of alternative scenarios and strategies of productive and infrastructure sectors were evaluated with priority and other criteria. Mitigation measures against negative impacts and a monitoring plan have been proposed. Detailed SEAs are also proposed to accumulate the experiences of Tunisia in SEA as well as to improve regional development planning for the Southern Region.

Chapter 5 sets target indicators for the development goal and vision, such as, the number of jobs created and the increase of per capita household consumption as a result of the implementation of strategies, plans, and action plans, and indicators for sustainable development such as groundwater management and increased renewable energy use. Baseline figures and values for 2025 and 2035 are estimated as targets for the implementation of strategies, plans, and action plans.

Chapter 6 describes recommendations from the Project to the Government of Tunisia.

A summary of each chapter follows below.

PART 1: CURRENT STATUS OF TUNISIA AND THE SOUTHERN REGION

1. OUTLINE OF THE PROJECT

S1101 One of the major challenges that Tunisia faces is correcting regional disparity. Integrated regional development through sustainable utilisation of local resources to achieve high competitiveness, inclusive economic development and balanced job creation is the best way to overcome the problems in regions left behind, which triggered the Jasmine Revolution. After the revolution, the Jasmine Plan was formulated, in which transparent and socially responsible administration are emphasised as the most important objectives. Both Tunisian and Japanese sides agreed introduction of a participatory approach for the development planning of the Southern Region in order to formulate the regional development plan in line with the Jasmine Plan and to support the transition of Tunisia to a democratic society. A Japanese model of public consultation meetings, where designated members deliberatively discuss on the draft prepared before are the meetings, are adopted in the Project.

S1102 **The overall goal of the Project** is "*Institutional capacity for regional development planning will be developed in the Ministry of Development, Investment and International Cooperation (MDICI) and the South Development Office (ODS) of the Ministry*".

The expected goals of the project to be attained after the Project completion are:

Goal of the proposed plan - "*The regional development plan will be developed through public consultation as a participatory approach"*.

Goal to be attained by utilizing the proposed plan:

a) "*Sustainable regional development is promoted to reduce regional disparity by utilizing available resources and advantages of the Southern Region"*.

b) *"Living environment and quality are improved in the Southern Region"*.

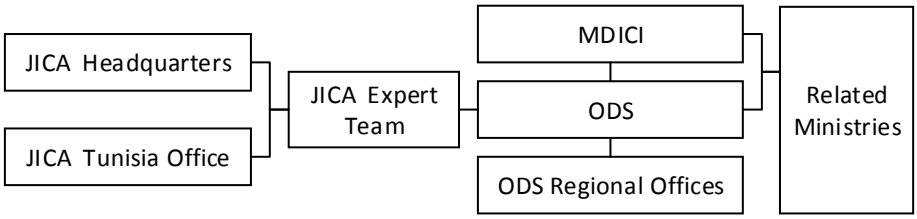
S1103 **The outputs of the Project** are:

i) Formulation of a regional development strategy for the period 2015 to 2035
ii) Formulation of a regional development plan for the period 2014 to 2023, and
iii) Capacity development in planning and administrative management for a participatory approach to the Tunisian counterpart through the Project.

S1104 **The activities of the Project** are:

i) Review of the existing development policies and plans, development projects, studies, public and private investments, and socio-economic data,
ii) Formulation of a future vision and basic concept,
iii) Formulation of a development strategy,
iv) Formulation of a development plan,
v) Selection of priority target sectors,
vi) Formulation of an implementation action plan, and
vii) Technology transfer of development planning and capacity development for human resources.

S1105 Project Organisation is formed as shown below according to the Records of Discussions agreed at the time of the detailed design survey of the Project. MDICI is the responsible agency and ODS is the implementing agency.



Project Organisation

The following three types of meetings have been held. Generally, after the draft reports were prepared by the JICA Expert Team (JET), they were discussed in a Steering Committee (S/C) meeting, Working Group (W/G) meetings, and Public Consultation (P/C) meetings. Comments were provided from the members of the meetings in parallel.

Meeting Name	Functions	Members
Steering Committee (S/C)	1) Monitoring and supervising the entire Project 2) Discussing and approving the reports 3) Coordinating among relevant organisations 4) Reviewing and exchanging views on major issues	Chair: DG* of Regional Development, MDICI Co-chair: DG of ODS Members: DGs of MDICI, Representatives of the related ministries, DPS of ODS, Leader of JET**
Working Group (W/G)	1) Carrying out surveys and analysing the current situation of the Project area 2) Preparing reports for presentation to the S/C 3) Examining and analysing technical aspects of the reports 4) Monitoring and evaluating the Project 5) Coordinating the Project with stakeholders 6) Dealing with any issues instructed by S/C	Chair: DG of ODS Co-chair: Leader of JET Members: Directors of ODS
Public Consultation (P/C)	1) Discussing and providing comments and opinions on the draft reports 2 Providing information to JET and ODS	Members of the National Assembly, Representatives of relevant public administration organisations, Representatives of private sector (business communities, labour unions, etc.)/civil societies (NGOs)

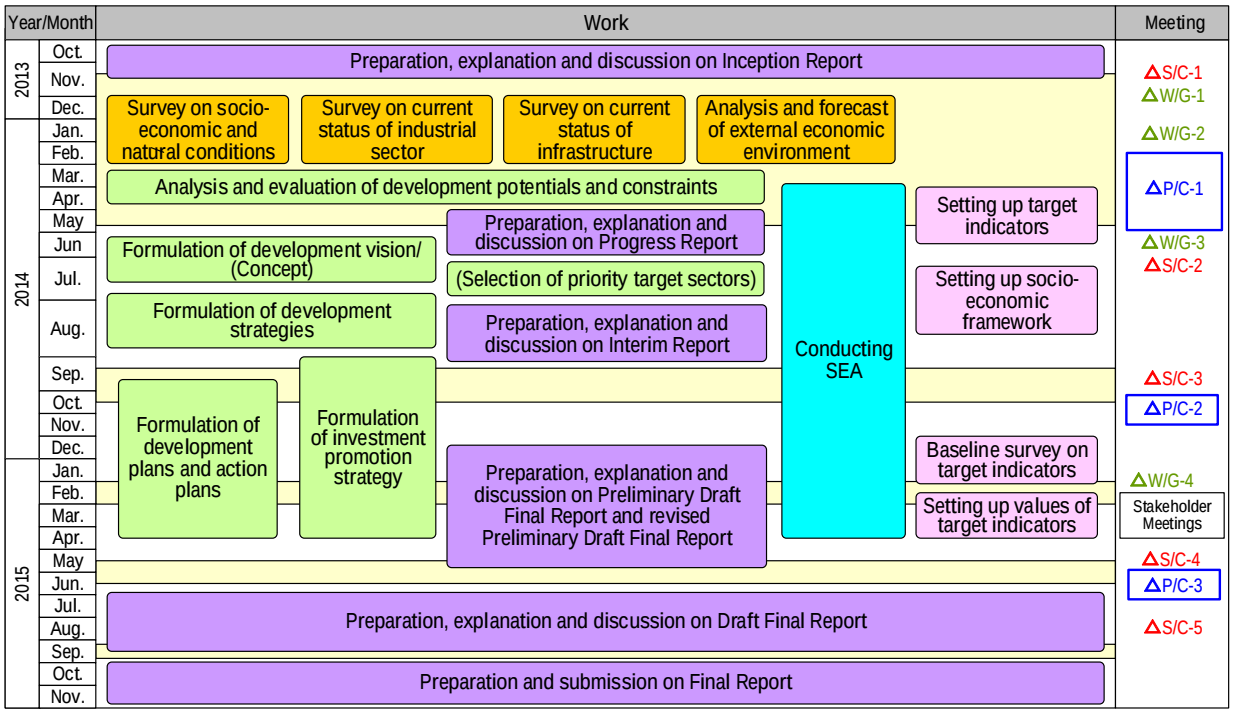
Note: *DG: Director General, DPS: Director of Planning and Statistics, JET; JICA Expert Team
Source: Record of Discussions on the Project

S1106 The **Project area** of the Project is the Southern Region composed of the six Governorates of Gabès, Médenine, Tataouine, Gafsa, Tozeur, and Kébili. The former three consist of the Southeast region and the latter three consist of the Southwest region.

Target sectors contain the followings:

1) Productive sectors; a) agriculture, fishery, livestock breeding and food processing, b) mining and other industrial sectors including renewable energy, c) tourism d) handicraft
2) Infrastructure sector; a) transport, b) water supply/wastewater treatment, c) power supply, d) telecommunications
3) Crosscutting issues; a) regional development administration, b) water resources management, c) investment, marketing, and trade promotion

S1107 **The actual study flow** of the Project is shown below. The original schedule as of the submission of the Inception Report was changed by the delay of holding the public consultation meetings and by the national elections.



S/C means a meeting of the Steering Committee of the Project, W/G means a meeting of the Working Group of the Project, P/C means a Public Consultation meeting

Source: JICA Expert Team

2. CURRENT NATIONAL AND REGIONAL DEVELOPMENT POLICY

S1201 The **XIth** (2007-2011, July 2007, MDCI at that time) **and XIIth** (2010-2014, September 2010. MRDP at that time) **National Economic and Social Development Plans**, **and the Jasmine Plan (Economic and Social Programme)** (2012-2016, September 2011, Ministry of Finance at that time) were analysed i) to formulate the regional development strategy/plan in line with national development plans, and ii) to understand the long-term trends of the objectives, policies, strategies, approaches and actions for economic and social development. Trends of policies/ objectives of those plans can be summarised as follows:

1) Creation of job opportunities, particularly for youth and graduates with higher education,
2) Restructuring of the economy for higher value-added with high technology with private investment, including foreign direct investment,
3) Integration with the global economy and export promotion,
4) Streamlining of vocational and professional training, and the promotion of research and development,
5) Enhanced competitiveness,
6) Balanced regional development and development in less developed regions in the inland of the country
7) Further infrastructure development and delivery of public utility services,
8) Strengthening of the financing sector, i.e., the banking and insurance sectors,
9) Emphasis on sustainable development with optimal use of natural resources and the protection of the ecosystem and biodiversity,

These policies/strategies are considered when the goal and vision are set. Further, it has been

found that the Jasmine Plan, as a national development plan after the revolution, emphasises "Establishing trust through transparency, social responsibility, and the citizen's participation", and "Ensuring all-inclusive and equitable development shared among different strata of the society". The former policy has been applied for the implementation of the public consultation (P/C) in the Project. The latter policy has been applied as a part of the development vision.

In addition, detailed measures and actions to attain the objectives and policies planned in the XIth and XIIth National Economic and Social Development Plans and the Jasmine Plan (Economic and Social Programme) are thoroughly examined as model development plans and action plans for the Southern Region.

S1202 The **"New Strategy for Regional Development"** (the MRDP (MDICI at present) provided at the time to the Detail Design Survey Team) has been formulated in line with the national development plans and has proposed three approaches:

a) Practical; to involve various social actors to echo the population's expectations,
b) Unifying; to call up and affect all actors in the design and development of policy and the implementation, follow-up, and evaluation processes,
c) Partnership; to work among all sectors (i.e., public and private) and all levels (i.e., national, regional and local).

The new strategy proposed for four pillars as follows:

i) Stimulation of public investment,
ii) Incentive programmes to private investors,
iii) Creation of regional competitive clusters, and
iv) Establishment of good governance.

The new strategy for regional development set five allocation keys for the supplementary budget preparation of 2012:

i) Overall coherence with the national strategies/policies and inter-regional cohesion,
ii) Social and economic efficiency of the subsidies provided to the regions compared with the benefits the respective regions receive,
iii) Equity to ensure the same opportunities to escape from poverty and unemployment,
iv) Transparency without any discretionary arbitration and with clear allocation criteria, and
v) Sufficient simplicity to ensure that the people can understand.

These pillars and allocation keys are also kept in mind when the vision and the strategies are formulated.

S1203 **Master plans on territorial development for the economic region of the southeast** (August 2010, 2011-2025) covering the governorates of Tataounie, Médenine, and Gabès **and for the economic region of the southwest** (August 2010, 2011-2025) covering the governorates of Kébili, Tozeur and Gafsa have been studied by the Directorate General of Territorial Planning of the Ministry of Equipment, Territorial Planning and Sustainable Development (Direction générale de l'aménagement du territoire du Ministère de l'équipement, de l'aménagement du territoire et du développement durable). The master plan for the southeast has set the following strategic axes:

i) Reinforced attractiveness of the regional economy

ii) Promotion of favourable conditions for the development of enterprises
iii) Structuring of the territory by a balanced organisation of polarities
iv) Promotion of sustainable development

The master plan for the southwest has set the following strategic axes:

i) Development of Oasis and Irrigated Agriculture
ii) Development of Agriculture in Dry Areas and Pastoral Activities
iii) Better Valorisation of Mineral and Energy Resources
iv) Diversification of the Industrial Structure and Improvement of the Performance of Services
v) Increasing Competitiveness of Saharan and Oasis Tourism
vi) Development of Cities and Improvement of Quality of Life in Urban Areas
vii) Modernization and Reinforcement of Facilities for Transport and Communication
viii) Development of a Potable Water Network
ix) Development of an Electric Network
x) Development of a Gas Network
xi) Updated Mapping of the Region of Southwest
xii) Creation of an Administrative Entity overseeing Capital City Transport and Communication

S1204 The **major international development partners (donors) active in Tunisia** are the World Bank (WB), African Development Bank (AfDB), European Union (EU), and United Nations Development Programme (UNDP). Since the Jasmine Revolution, these donors have assisted Tunisia under interim strategies. Before February 2015, it was expected that the donors would develop long or midterm country assistance strategies upon promulgation of the Constitution and establishment of full-fledged administration through elections based on the new Constitution. At present, however, the donors are waiting for the next round of national economic and social development plans as bases for the assistance strategies they intend to develop.

WB has assisted Tunisia according to Interim Strategy Note for the Period Fy13-14 (May 2012, International Finance Corporation), which contains the following three engagement areas and eight driving objectives:

Area 1: Laying the Foundation for Sustainable Growth and Job Creation
- Driving Objective 1: Supporting macroeconomic stability and economic recovery
- Driving Objective 2: Strengthening the business environment and deepening integration
- Driving Objective 3: Creating an enabling environment for labour market reforms
- Driving Objective 4: Improving active labour market programs for the unemployed

Area 2: Promoting Social and Economic Inclusion
- Driving Objective 5: Improving access to basic services for underserved communities
- Driving Objective 6: Improving the efficiency of social safety net programmes

Area 3: Strengthening Governance: Voice, Transparency and Accountability
- Driving Objective 7: Improving access to information and social accountability
- Driving Objective 8: Increasing the transparency and accountability of institutions

The following are the WB's major programmes/projects related to the Project:

1) Third Governance, Opportunity and Jobs Development Policy Loan (EURO 455.5

million (Equivalent to US$ 500 million), October 2015)

2) Urban Development and Local Governance Programme (EURO 217 million (Equivalent to US$ 300 million), July 2014)
3) Oases Ecosystems and Livelihoods Project (TOELP) (US$ 5.76 million), June 2014)
4) Third Export Development Project (EDP III) (EURO 36.3 million (Equivalent to US$ 50 million), June 2014)
5) Micro, Small and Medium Enterprise Development Project (EURO 72.6 million (Equivalent to US$ 100 million), April 2014)

AfDB has supported Tunisia with the Interim Country Strategy Paper 2014-2015 (Document de stratégie pays intérimaire 2014-2015) (March 2014). With the objectives of promoting the creation of high value added jobs for young graduates and enhancing the economic attractiveness of regions, emphasis is laid on support for inclusive private sector development. This support entails the improvement of i) private sector output (by improving governance) and ii) the provision of production factors (by improving infrastructure).

The Government's thrusts are twofold. First, i) Economic reforms and ii) Infrastructure modernisation are backed by actions carried out under the governance and infrastructure pillars to a) improve the business climate and competitiveness and b) increase value added. Second, iii) Regional rebalancing and iv) Strengthening of the social sectors of education and employment are supported under the governance and infrastructure pillars through actions to c) improve public service delivery in the regions and d) ensure access to employment by developing skills and opportunities in the regions.

The following are the AfDB's major projects related to the Project:

1) Integrated Agricultural Development Project (PDAI) – GABES II (Total Cost: EURO 30.458 million) (November 2014)
2) Gafsa North Integrated Agricultural Development Project (PDAI) (Total Cost: EURO 29.131 million) (February 2013)
3) Rural Drinking Water Supply (RDWS) (Total Cost: UA 90.8 million (Equivalent to EURO 112.1 million as of September 2015) (October 2011)
4) Gabès - Médenine -Ras Jedir Highway Construction Project (Médenine - Ras Jedir Section) (Total Cost: EURO 454.78 million, out of the total JICA is financing EURO 136.47 million) (June 2011)
5) Road Project VI (Total Cost: EURO 336.74 million) (September 2010)

UNDP formulated country programme for Tunisia for the period of 2015-2019 in April 2014. The programme contains four outcomes and ten outputs:

Outcome 1: By 2019, civil, political, and administrative institutions are fully operational with respect to observance of universal principles of human rights, democracy, and gender equality.

Output 1.1: Strengthened capacity of institutions safeguarding the rule of law, providing enhanced access to justice and security, especially for the more vulnerable, in accordance with international norms

Output 1.2: Citizen participation and the capacities of institutions and opposition forces are strengthened, facilitating enhanced accountability to the people

Output 1.3: Improving management of public finance

Outcome 2: By 2019, the State is organized according to new decentralized regional divisions meeting Tunisians' aspirations to a democratic governance model based on citizen participation and accountability to the people.

Output 2.1: A national decentralisation strategy is supported and contributes to an effective local governance system providing better quality services to citizens

Output 2.2: Support is provided to national actors to develop and implement a good governance strategy, including an effective national integrity system

Outcome 3: By 2019, the Government implements a new model of economic and social development which is equitable, inclusive, sustainable, resilient, and able to generate both wealth and employment.

Output 3.1: Planning, monitoring, and evaluation mechanisms are strengthened to support effective and equitable public policies.

Output 3.2: Tools for measuring and analysing poverty and vulnerability are maintained and refined to guide the formulation and implementation of effective, efficient, and equitable public policies.

Outcome 4: By 2019, regional players manage regional resources efficiently and make optimal, sustainable, and inclusive use of them.

Output 4.1: Local development plans taking regional potential into account are drawn up in two pilot areas, and a strategy for replication in the other areas has been formulated.

Output 4.2: Viable plans are developed at the national and local levels for sustainable management of natural resources

Output 4.3: Strategies for low-carbon-emission development based on greater energy efficiency are supported at the national and local levels

Output 4.4: Frameworks and systems for disaster risk prevention and management are developed, enhancing community and ecosystem resilience

UNDP has supported regional development of the Southern Region, including the Governorate of Médenine, and has planned a continuous support programme for 2015-2018, i.e., "Support to an Integrated and Sustainable Local Development through the Articulation of Territorial Platforms in Tunisia" (PATT 2015-2018). The programme has the following three objectives:

Output 1: Establishing a framework to support democratic local governance at all territorial levels

Output 2: Piloting a process of sustainable and integrated local economic development, especially targeting youth and women

Output 3: Promoting the establishment or strengthening of strategic partnerships for knowledge-sharing and capacity building

The EU has supported Tunisia with a single support framework for the country (2014-2015) containing three intervention sectors and ten outputs:

Sector 1: Socio-economic reforms for inclusive growth, competitiveness, and integration

Output 1: Supporting job creation policies and human capital development

Output 2: Supporting the reinforcement of principles of good governance, respect for the rule of law, and transparency in the economic sphere, in order to make the business environment more conducive to investment

Output 3: Improving the management of public finance

Sector 2: Consolidation of the constituent elements of democracy

Output 1: Supporting the process of democratisation and consolidation of a pluralist ……

Output 2: Supporting the formulation and implementation of judicial reform ……

Output 3: Supporting the formulation and implementation of security sector reform……

Output 4: Consolidating the roles of women in society, and contributing to ……

Sector 3: Sustainable regional and local development

Output 1: Supporting the preparation and implementation of a policy and a strategy of balanced regional and territorial development that can reduce regional disparities and combat poverty

Output 2: Contributing to local social and economic development by involving civil society and local actors

Output 3: Supporting the implementation of a sustainable development strategy at regional and local levels based on the growth of a low-carbon green economy

The EU has supported cluster development. The EU helped the Ministry of Industry, Energy and Mining (MIEM) formulate the national strategy for cluster development as well as the five-year action plan for cluster development. The EU has also been assisting with the implementation of the action plan.

Apart from the WB, AfDB, UNDP and EU, the ILO has actively supported the development of Tunisia. The ILO has implemented a "Support Programme for the Development of Disadvantaged Areas (AZD)" co-financed by the EU. The programme aims at supporting the economic recovery and labour market integration of unemployed young people, women, and men, especially those with low qualifications, through the creation and consolidation of decent employment. The programme has included projects for "Milk business valuation support Sidi Aich (Gafsa)" and a "Construction of neighbourhood market in Essourour (Gafsa)".

In addition to the multinational cooperation, the following bilateral cooperation has been implemented:

France – French Development Agency (AFD): As the former colonial power, France has comprehensively assisted the development of Tunisia through the AFD. The AFD has been involved in various programmes/projects of multinational cooperation agencies, such as those for cluster development.

Germany – German Corporation for International Cooperation (GIZ)/German Development Bank (KfW): Germany has been implementing various types of assistance programmes/ projects through GIZ and KfW. With regard to the Southern Region, GIZ assisted with the formulation of a regional environment and sustainable development plan (plan régional d'environnement et développement durable, PREDD) targeting a Médenine Governorate and prescribing a participatory approach to planning by holding roundtable meetings where people could freely participate and express their opinions.

Switzerland – Swiss contact: Switzerland has been engaged in a tourism development project whose main target area extends to the Southeast region, aiming at tourism diversification in the area.

Italy - Italian Cooperation: Italy has been implementing various projects, including a project to support small- and medium-scale enterprises and attract Italian partners.

3. CURRENT CONDITIONS OF TUNISIA

S1301 **GDP per capita of Tunisia** in 2012 was US$ 9,754 (purchasing power parity), meaning that Tunisia is one of the middle-income countries. **Annual GDP growth rates** were: 2010/11, -1.9%, 2011/12, 3.6%; 2012/13, 2.6%; 2000-2009, an average of 4.2%.

S1302 **Unemployment rates in Tunisia** before the revolution (2006-2010) were around 13%. The rates rose to 18.3% in 2011 and dropped to 15.3% in 2013.

S1303 **Sectoral shares in GDP** in 2014 are estimated as: Agriculture/fishery, 8%; Manufacturing, 16%; Non-manufacturing industry, 12%; Services, 42%; Non-commercial services, 18%.

S1304 **Shares in numbers of enterprises** in 2012 were: North-east, 48.6%; North-west, 8.3%; Centre-east, 24.4%; Centre-west, 7.7%; Southeast, 7.0%; Southwest, 4.0%. Although the population of the Southern Region accounts for 15%, the region's share of the number of enterprises is as low as 11%.

S1305 **Tunisia's overall investment performance** stays in the middle range among countries of the Middle Income Country Group. While Tunisia constantly secures between 20-25% of its GDP for investments at home, it has not taken off any significant increase in gross fixed capital formation and has fallen well behind its neighbouring comparator country, Morocco.

S1306 **Foreign direct investment (FDI) inflow** during 2000-2010 has more than tripled from DT 700 million to DT 2,165 million, with an annual growth of 11%. FDI has a strategic implication for Tunisia's economic growth as it contributes to a substantial share of the government budget, 10% of investments in the productive sectors, one-third of exports, and one-sixth of the total employment. As for the distribution of FDI, the primary sector attracts the largest share (61%), followed by the secondary sector (26%) and the tertiary sector (13%). Investments in the primary sector predominantly prevail in the area of energy (petroleum and natural gas). As for the secondary sector, chemical production has become an increasingly attractive field. Two-thirds of FDI come from the EU countries, mainly from the UK, Italy, and France. Non-traditional investors such as Arab nations and emerging countries of the Asia & Pacific region are becoming important sources. Tunisia retains a competitive investment climate, ranking 32nd among 139 countries in the world. Room for improvement remains in several areas, notably, an inflexible labour market, corruption, and regulatory restriction of investments in commerce, air transport, communications, finance, and some professional services.

S1307 **Exports** experienced an upward trend in recent years, except in 2009 and in 2011. Exports of goods have grown steadily in both volume and value, with the total export value reaching DT 27.7 billion in 2013. The major export goods are petroleum oils, apparel, agricultural products (olive oil, dates, citrus, vegetables), phosphates, mechanical and electrical goods, hydrocarbon, and chemicals. The traditionally predominate service exports are tourism, transport, communications, and construction, and ICT is rapidly growing. The largest exporting partners are four EU countries: France, Italy, Germany, and Spain. Tunisia's export destinations have diversified in the past few years because Asian countries and Arab nations such as Libya and Algeria are becoming important partner countries.

4. CURRENT CONDITIONS OF THE SOUTHERN REGION

S1401 **Major agricultural crops** are arboricultural, represented by dates in Tozeur and Kébili, and olives in larger amounts in Médenine and lesser amounts in Gabès and Tataouine. Off-season cultivation, particularly that with hot spring water, has started. **Breeding of livestock** represented by goats and sheep for meat production is prevailing in Tunisia's vast areas of grazing lands, while milk production and poultry are growing. **Fishery** is also an important sector. As natural fishery resources are decreasing, aquaculture has been developed in their place.

S1402 The **Mining** sector is represented by the extraction of phosphate ore in Gafsa. A large volume of phosphate ore has been found in Tozeur, but the extraction has yet to commence. Fairly large-volume reserves of various mineral resources such as gypsum, limestone, marvel, clay, salt and sands, so-called "useful substances", are found throughout the region, some of which have been extracted and processed.

S1403 In **manufacturing,** there is a relative concentration of enterprises in Gabès, Médenine, and Gafsa. The food-processing sector constitutes a significant portion in manufacturing sectors, being concentrated in Gabès, Médenine, and Tozeur. The chemical sector is concentrated in Gabès and the textile industry is concentrated in Gabès and Gafsa. Some agglomerations of firms in the mechanical and metal sector have also developed in Gabès and Gafsa.

S1404 Regarding **tourism**, mass beach tourism has been significantly developed in Djerba and Zarzis. Saharan and oasis tourism is being developed in Tozeur and Douz. The lack of variety in the attractions drawing tourists to the region results in a serious seasonality in tourist activity.

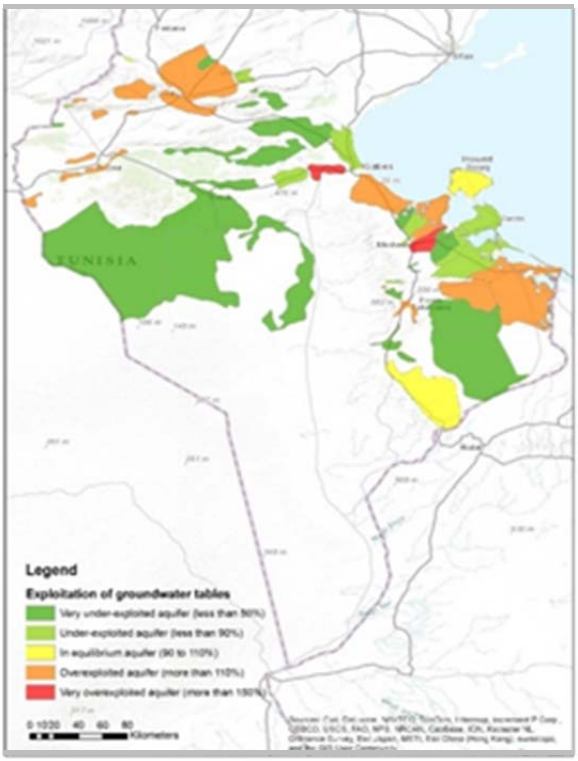
S1405 There would be good **investment opportunities** in the following areas: i) farming with usage of geothermal resources, organic production of olive oil, dates, fruits, and cow milk; ii) cultivation and commercialization of high value added products such as pre-season vegetables and tree fruits, medicinal and aromatic plants, and seaweed; iii) livestock production; iv) aquaculture; v) value addition to useful substances such as gypsum, marble, clay, etc.; vi) plastic and carton industries; vii) Information and Communication Technology (ICT); viii) tourism for different purposes such as congress, medical, cultural, and sports; and ix) other services. In the **Investment Incentives Code**, most parts of the South are classified as the Priority Zone, where the most preferential financial and fiscal benefits are granted. During 2010-2012, the patterns of investments in the South overall differed among the six governorates in the region. Still, **Foreign direct investment (FDI)** in the South is very limited both in terms of the number of companies and the number of jobs generated.

S1406 **Major exportable products** are those derived from commercial agriculture such as dates and olive oil, and those from rich natural resources such as phosphate products, gypsum, marble, and salt products. Products from textile/apparel and electric/electronic industries are exported in small amounts. The Southern Region has the advantage of geographic proximity for trade with Libya, in addition to being favourably located for trade with European countries. Exports are expected to increase, particularly construction materials such as gypsum and brick to Libya, because greater demand is expected to prevail in Libya as its reconstruction accelerates. The most critical issues faced by exporting businesses across different sectors are: i) limited processing capacities to export higher value added products; and ii) underdeveloped transport and export logistics, which lead to constrained shipping and higher transport costs.

S1407 The **Population** of the South reached 1,594,000 in 2011. This is nearly double the population recorded in 1975, but the rate of population growth has decreased significantly over the decades since. Tunisia's share of population in the South has stayed at around 15%. The **population pyramid** changed from an expansive pyramid in 1985 to a constrictive pyramid in 2011 (which indicates low birth and death rates). **The spatial population distribution** is characterised by a triple concentration in coastal areas, compared with the average of the Southern Region. A total of 52.7% of the population lives in the coastal governorates of Médenine and Gabès, while the two governorates share only 18.0% of the surface area of the South. High urbanisation is another key demographic characteristic, with 70.8% of the population living in urban (communal) areas (versus a rate of 66.4% for all of Tunisia).

S1408 Out of the ten **Socio-agro-ecological zones** of Tunisia, the following extend in the Southern Region: Upper Steppes (1%), Atlas Range (8%), Chott (salt lake) (23%), Grand Eastern Erg (sand sea) (33%), Dahar and Matmata (plateaus) (22%), and Jeffara-Oura (plains) (13%).

S1409 **Water resource potentials** comprise 212 million m^3/year (19%) of surface water, 124 million m^3/year (11%) of rechargeable groundwater, and 784 million m^3/year (70%) of fossil aquifers. Critically excessive exploitation can be seen in the areas east to Médenine and around El Hamma (red coloured). Excessive exploitation can be seen in the plains east to Ben Guerdane, areas around Mareth and Beni Khedache, Oases in Tozeur Governorate, and areas over the Gafsa Governorate (orange). Potentials exceed exploitation in a plain east to Tataouine, the western areas of Tataouine, a plain around Zarzis and north-west to Médenine and west to Ben Guerdane, over the northern and western areas of the Gabès Governorate, and over the Kébili Governorate (green). Water potentials and uses are balanced in Djerba Island and areas around Dehiba (yellow), as shown in the right figure.



Source: JICA Expert Team based Ministry of the environment and DRGE of the Ministry of Agriculture

5. CURRENT STATUS OF PRODUCTIVE SECTORS OF THE SOUTHERN REGION

S1501 The following are the major elements identified as **development potentials of the Southern Region** (see the map on the next page).

< Agriculture, fishery, livestock breeding, and food processing >

- Two agricultural products in the region have very high potential to create regional brands for the world market by dint of their high nutritional content and value: Dates and Olives.
- Large areas of the region covered by natural fields to strengthen small-scale breeding of livestock such as sheep and camel.
- Some potential land is being considered for natural-grown herbs and grass-based products for cosmetics and healthcare business.

< Mining and other industrial sectors >

- Large volumes of mineral resources such as limestone, dolomite, silica, marble stone, and gypsum have been identified along the central mountain range stretching through the whole of the Southern Region.
- Natural oil and gas reserves have been identified in the far south area of Tataouine, and profit shares may be bestowed upon the Region by the central government.

< Tourism >

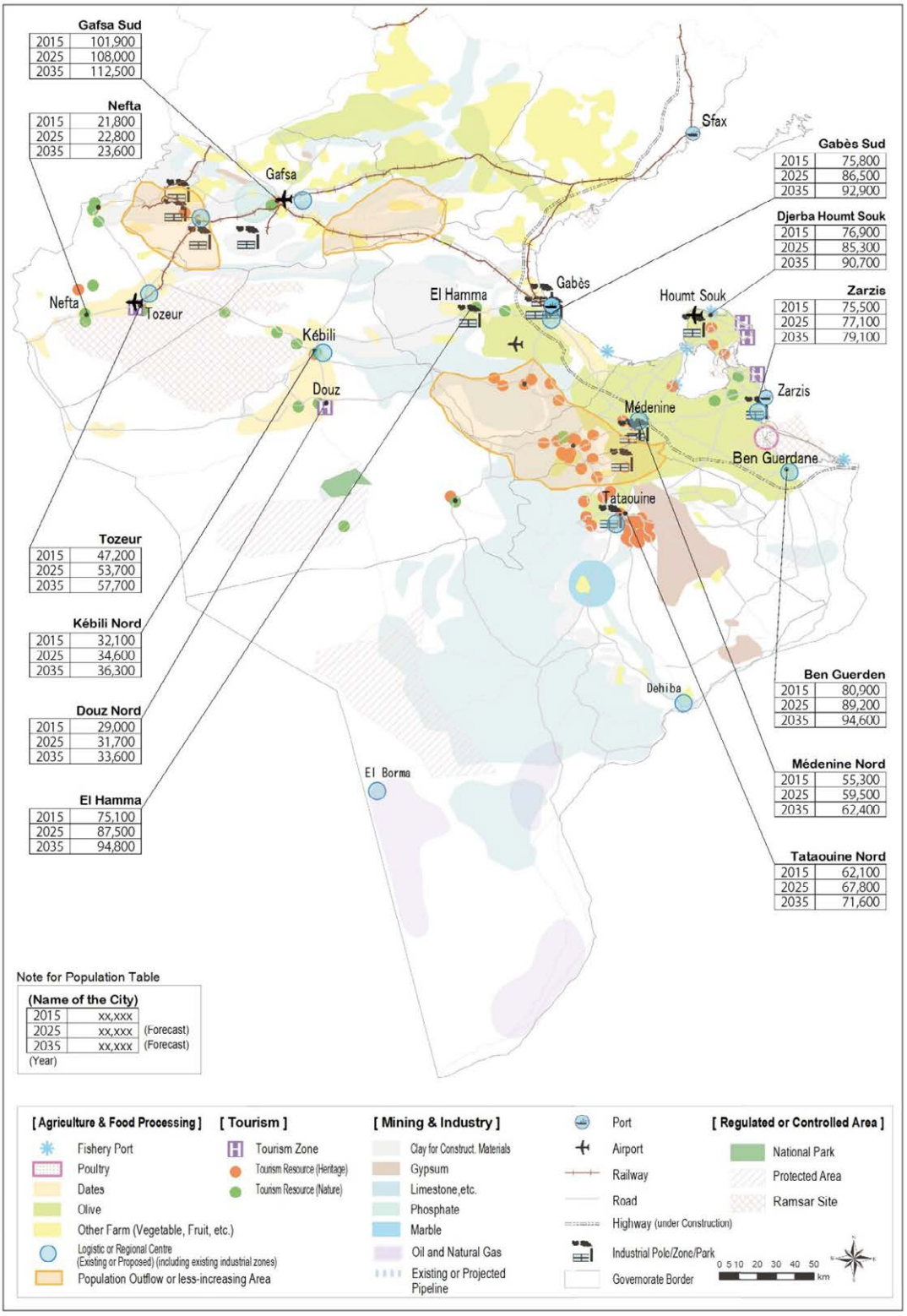
- The Southern Region is a large showcase of natural Saharan beauty and Oasis culture, as well as archaeological and heritage structures and elements spread throughout the Region. These assets should be well treated for more effective utilization as tourist attractions.
- Geothermal resources in Gabès, Tozeur, and Kébili can be used for agricultural purposes such as off-season vegetable production, as well as for touristic purposes such as geothermal therapy.

< Geographic position >

- The Region is at the border of Libya and Algeria, potential neighbouring markets for many products, especially construction materials from the Region.

< Infrastructure >

- Two seaports are located along the Mediterranean coastline, and the cities of Gabès and Zarzis are located near the international gateway for expansion of trading.
- Potential industrial production and/or logistic centres/zones in the Southern Region are being developed or are projected for development by the governorate.
- Existing facilities are established near the borders for international trade with Algeria and Libya, such as the facilities in Dehiba, Tataouine and Ben Guerdane, Médenine.
- Existing airports and seaports and the railway network are targets for upgrade to bring better economic impact to the regional production and industrial activities by realizing higher capacities and more stable transportation of products and goods of the Region.



Source: JICA Expert Team

Map of current status of productive sectors and natural resources of the Southern Region

S1502 Sections S1503 – S1514 below present summary results of analyses and evaluations, as well strategic orientations of the four productive sectors, i.e., 1) agriculture, fishery, livestock breeding and food processing sector, 2) mining and other industrial sectors, including renewable energy development, 3) tourism and 4) handicrafts. Sections S1503, S1506, S1509, and S1512

present analytical results related to factor conditions, demand conditions, related and supporting industries, and firm strategy and rivalry according to Porter's Diamond Model and in terms of international market conditions and competition for the respective four productive sectors. Sections S1504, S1507, S1510, and S1513 present the results of analyses and evaluations of the constraints and potentials of the respective four sectors. Sections S1505, S1508, S1511 and S1514 summarize the current conditions based on the above two types of analyses and the strategic orientations of the respective sectors corresponding to the summaries.

S1503 Following is an analysis of the current conditions of **agriculture, fishery, livestock breeding, and food processing sector** according to Porter's Diamond Model and in terms of international market conditions and competition. Olive oil and dates have good potentials for higher value-added production, and processed livestock and aquaculture products have potential for domestic and neighbouring country markets.

Products	Factor Conditions	Demand conditions	Related and supporting industries	Firm strategy, structure, and rivalry	Markets and competition
Dates	・ Major products represented by Deglet Nour ・ Productivity is lower than in other countries ・ Water consumption needs to be economized	・ Many varieties corresponding to market demand ・ Almost all date exports from Tunisia are from the South	・ Many collecting units and conditioning factories ・ No other supporting industries are located in the South.	・ Typical sales strategy (selling large amounts of products in the Ramadan season) ・ Some point out the need for a national office specialized in dates.	・ World's largest exporter of dates in value ・ Highly competitive in international market
Olives and olive oil	・ Major products along with dates ・ Sufficient capacity of oil mills ・ Production volume is fluctuating due to rainfall conditions ・ Sub products are used as fuel and animal feeds	・ Local and international markets have severe quality standards for olive oils ・ Corresponding to international criteria for olive oil quality	・ Few bottling companies in the South. ・ Supporting industries need to be developed to reinforce the value chain.	・ Export strategy elaborated by exporters with the National Oil Office and Promotion Program for Olive Oil, etc. ・ Discontinuity between production and bottling/export	・ The fourth largest exporter of virgin olive oil in the international market ・ Much value added is lost due to the export of bulk products to Italy and Spain.
Arboriculture (other than olive and dates)	・ Typical products vary by Governorate (figs in Médenine and Gabès, almonds in Gafsa, etc.) ・ Some are produced by triple-layered oasis agriculture ・ Insufficient volume	・ Some have an excellent reputation (e.g., pomegranates from Gabès) ・ Others for home consumption and/or local market	・ Food processing units for arboriculture products are very scarce and scattered in the South. ・ Supporting industries need to be developed.	・ Excluding some products that have had certain production volumes and reputations, the collective activity of farmers needs to be promoted for commercialization	・ As for export, production volume is lower than that of major exporters ・ Better to focus on the domestic market to increase production volume and to improve quality and productivity
Vegetables	・ Production volume is insufficient to satisfy local demand. ・ Some produce vegetables of high value (e.g., tomato in Gabès, winter vegetables in Gafsa) for national market and export	・ Insufficient for local demand in the South	・ Agricultural cooperatives who can supply materials are gradually increasing.	・ Various vegetables are relatively easy to produce according to price variations and opportunities in the market.	・ Producers of off-season vegetables are targeting niche markets of other regions/countries.

Products	Factor Conditions	Demand conditions	Related and supporting industries	Firm strategy, structure, and rivalry	Markets and competition
Livestock Breeding	・ Production of meat, egg, milk, and raw materials for handicraft (wool and leather) ・ Number of sheep, goat, and cattle decreased in the South due to high price of feed ・ Number of hen and cow are stable or increasing because of feed efficiency and attractive selling price	・ High demand of red meat, poultry meat, egg, milk, and dairy products	・ Some agricultural cooperatives provide animal feed at reasonable price ・ Collected milk is supplied to the other Region ・ Only one dairy product factory in Médenine ・ Lack of slaughterhouse	・ Sheep and goat breeding is combined with olive and dates farming for organic agriculture ・ Some company have a marketing strategy to neighbouring countries	・ Local market and international market of neighbouring countries seem to be promising
Fishery, aquaculture, and fish processed product	・ Aquaculture and lagoon fishing are increasing ・ Number of fishermen and fishery infrastructure and the volume of aquatic resource are not necessarily balanced	・ High demand especially in coastal area of Tunisia ・ Fish processing products are promising in domestic and international market	・ Equipment and infrastructure of fishery need to be renewed ・ No supplier of fish feed and medicine ・ Organic waste treatment facilities are needed	・ Difficult for fishermen to collectively engage in fishery promotion due to the lack of cooperatives ・ Some tuna can producers have robust sales strategy	・ Both domestic and international market seem to be promising ・ Some tuna can producers have international standard to export to the US, EU, and Gulf countries.

Source: JICA Expert Team

S1504 **Agriculture, fishery, livestock breeding, and food processing sector** have major **constraints** in terms of resources, value chain, and infrastructure, as shown below.

Categories	Constraints
Resources	1) Limited water resource 2) Limited farmland 3) Limited aquatic resources 4) Limited human resources (skilled labour, trainer, engineer, and young farmer) 5) Lack of collective and modernized agriculture and fishery 6) High operation cost and insufficient opportunity for financing
Value chain	7) Insufficiency of value chain in the South 8) Lack of supporting industry
Infrastructure	9) Insufficiency of infrastructure
Governmental support	10) Insufficiency of governmental supports and delay in administrative procedures

Source: JICA Expert Team

Four approaches are recommended for tackling the constraints above and maximizing value added of proposed products through the use of unique local resources in the South.

- Reinforcement and sophistication of value chain
- Development of an industrial cluster for food processing
- Further promotion of the use of unique local resources
- Introduction of modernized agricultural technology for sustainable development

The following products have high **potentials**. The following approaches are expected to contribute to the promotion of this sector.

Products considered to have high potential	Recommended approaches for promotion considering local characteristics of the South			
	Reinforce-ment and refinement of value chain	Development of an industrial cluster for food processing	Further promotion of the use of prominent local resources	Introduction of modernized technology for sustainable development
1) Dates	○	○	○	○
2) Olive oil	○	○	○	
3) Other arboriculture products	○	○		
4) Off-season vegetables	○			○
5) Newly developing local products			○	
6) Chicken, milk and dairy products	○	○	○	
7) Aquaculture and fish processing products	○	○		

Source: JICA Expert Team

S1505 The results of the analysis of constraints/potentials and Diamond Analysis are summarised in the "Current condition" column of the following table. Corresponding orientations for the formulation of 'development strategies' (refer S2101) are described in the "Strategic orientation" column. Strategic orientations are identified to take advantages of the potentials and overcome the constraints.

Current condition	Strategic orientation
<Dates> - Date export is and will be a promising sector. - Packaging and export are mostly done in the North, at present. - Date production consumes much water and causes over-pumping of groundwater.	* Introduction and promotion of water-saving irrigation is necessary for efficient use of groundwater. * Marketing, quality/design improvement and product development have to be promoted to shift final processing and exportation to the South. * Improvements are required in the business environment and in infrastructure/development in order to attract more investment and enterprises. * Government support focused on financing and strengthened farmer groups is necessary.
<Olive Oil> - Olive oil export is and will be a promising sector favoured by the prominent quality of Tunisian olives. - Currently, bulk export prevails. Processing has been done mainly in Italy, the North, and the Central west.	* Marketing, quality/design improvement and product development have to be promoted to shift final processing and export to the South. * The promotion of the "South Tunisia Brand" will be a key element. * Enhanced research and development (R&D) is necessary to realise the shift. * Improvements are required in the business environment and in infrastructure/development in order to attract more investment and enterprises. * Government support focused on financing and strengthened farmer groups is necessary.

Current condition	Strategic orientation
<Livestock breeding/aquaculture/food processing> - High demand can be expected from the domestic market and markets of neighbouring countries. - The prices of animal feed are high in the South. - The sector can produce organic substances as by-products, which is useful for organic agriculture. - The sector also can produce materials for handicraft production.	* Marketing, quality improvement, productivity improvement, and branding have to be encouraged. * The promotion of the "South Tunisia Brand" will be a key element for sector development * Some strategy/plan is required for cheaper and stable supply for animal feed. * Government support focused on financing and strengthened farmer groups is necessary. * Combined with other agricultural sectors, organic agriculture can be promoted.
<Other promising products> - There are various potential products. - The development of products will contribute to a strong competitive edge with prominent local resources and a diversification of productive sectors.	* Potential products could be medicinal and aromatic plants, arboriculture products, and vegetables made in geothermal greenhouses, honey/derivatives, livestock products (rabbit, quail, etc.), aquaculture products (tilapia, tuna, and shrimp for etc.), etc. * Initially, research will be required for marketing and technology development, followed by establishment/enhancement of farmers' groups and professional groups for the introduction and dissemination of the new technology and other means to promote production.
<Circulated use of local organic substances> - As the Southern Region is arid, organic substances in the soil are scarce.	* Circulated use of local organic substances has to be promoted by enhancing the linkage of farmers with food processing companies and livestock breeders.
<Multifunctional use of agricultural lands> - Oases are a good potential tourist resource because of their scenic beauty and remarkable culture.	* Triple-layered agriculture and the biodiversity of the Oases have to be conserved through facility rehabilitation and the promotion of collective activities.

Source: JICA Expert Team

S1506 Current conditions in the **mining and other industrial sectors** are analysed in terms of factor conditions, demand conditions, related and supporting industries, and firm strategy and rivalry. Sub-sectors other than electricity and electronics have good potential for development.

Sub-sector	Factor conditions	Demand conditions	Related and supporting industries	Firm strategy, structure, and rivalry
Chemical	<Phosphate> Large phosphate processing maker (GCT) and agglomeration of phosphate-related firms and high skilled workers in Gabès. R&D activities in universities and firms. Project for producing purified phosphoric acid. Problems with waste and air pollution. The reserve of phosphate ore in the current pits in Gafsa is expected to be depleted in 20-30 years. It would be desirable to seek more reserves. <Plastic recycling> Recycling firms are operating under-capacity because of the small number of waste collectors.	<Phosphate> Demand for fertilizer is likely to increase.	<Phosphate> Large reserve of phosphate ore in Gafsa.	<Phosphate> The phosphate industry faces keen international competition

Sub-sector	Factor conditions	Demand conditions	Related and supporting industries	Firm strategy, structure, and rivalry
Mining	There are also various other mineral resources that can be exploited further in the South.	The demand for construction material and raw materials for the same is thought to be increasing in the short run.	Most of the firms in this sector have to import their machinery because no machinery makers are locally available.	The number of firms in this sector is small, and competition among the firms in the sector is relatively low.
Construction material	Raw materials used for high-end construction materials such as marble stone, limestone, and gypsum some Some processing firms are in place to process these materials.	High-priced building materials such as decorative natural stone tiles are becoming popular in the Southern Region.	Most of the producers have to import their machinery mainly from Europe because no machinery makers are locally available	Most of the producers in this sector in the South do not have many competitors within their business domains
Textile	There are many firms performing as OEM for foreign brands. The main processing activities are sowing and cutting stages, both of which are highly labour intensive. There are very few design and finishing activities.	The market for the high-quality apparel products in the South and Tunisia overall is small.	No firms produce good-quality fabrics in the South.	The major textile firms in the South are subcontractors or partners of European apparel makers.
Electric and electronic	The production base in this sector is very limited. The productive activities of the Yazaki plant are highly labour intensive and low-tech.	There are no big firms that require large amounts of electricity or electronic parts.	There is virtually no base of supporting industries.	The number of firms is very small in this sector.
Solar Energy	The national energy policy pursues progressive use of renewable energy and establishes benchmarks for the use of solar energy in the renewable energy framework. The Southern Region has untapped resources (solar radiation, silica, and potential qualified human capital)	Demand for solar energy is deemed substantial in accordance with the national energy policies. The energy subsidy cut for the industrial sector will push up their operation costs, which is likely to induce the adoption of solar energy. By 2030, the electricity to be supplied by PV and CPV will total 2,000 MWh and 600 MWh, respectively. The installation of SWH is to reach 2.5 million square meters. Demand for PV in Tunisia's major trade partner countries (Germany, France, Italy, and Spain) shows upward trends.	There are experimental initiatives in the form of academic-public-private partnerships, but they are very limited in number and in scale.	SWH equipment manufacturing is subject to moderate domestic and international competition. The PV market is largely dominated by Chinese and Taiwanese suppliers.

Source: JICA Study Team

S1507 **Mining and other industrial sectors, including renewable energy development,** have various **constraints and potentials** by sub-sector, as shown below. Electric and electronic sub-sectors cannot be target sub-sectors, while mechanics and metal sub-sectors can be developed, depending on large heavy industries such as chemical- or phosphate-related industries.

Sub-sector	Constraint	Potential
Mining sector	Exploitation projects are capital-intensive, requiring investors with large financial capacities. Development requires a structured organization of the promoters and specific technologies closely related to the nature of the substances.	Large reserves of various kinds of natural minerals can be exploited, such as phosphate, gypsum, limestone, marble, and clay.

Sub-sector	Constraint	Potential
Textile sector	The textile industry faces fierce global competition whose main players includes low-cost emerging countries. It would not be easy to attract investors in this sector.	Promotion of design and finishing product activities would move up the value chain of the business.
Chemical sector	Development depends on this sector's ability to deal with environmental problems.	A large volume of reserves of phosphate ore and an agglomeration of chemical sector firms in Gabès (where GCT plays a central role) are big assets.
Construction material sector	There are various producers of construction materials, but their skills and the quality of their products are not high enough to compete with firms outside of the South.	The various raw materials available are a great asset.
Mechanicals and metal sector	The main target customers of the mechanics and metal firms in the South are heavy industrial firms in the South, such as phosphate and chemical companies. As such, the development of this sector largely depends on the development of heavy industry sectors in the South.	
Electric and electronic sector	There are limited production and technological bases for large-scale development of this sector.	
Renewable Energy	Regulatory framework under scrutiny; monopoly of power generation, sales, and distribution by STEG Increasing competition among the global manufacturers; the growth potential of the national manufacturers is at risk (SWH equipment and PV panels)	Abundant solar radiation National policy framework and supporting programs to promote the use of solar energy: i) Specific goals by 2030, ii) Fiscal incentives for investments Positive market prospects based on the outcome of the relevant programs in the past

Source: JICA Expert Team

S1508 The following table describes summary results of the constraints/potentials analysis and the Diamond Analysis and corresponding strategic orientations. The strategies of this sector are to be formulated utilising rich mineral and energy resources, while sustainable development can be realised by solving the existing environmental problems.

Current conditions	Strategic orientation
<Phosphate > - Agglomeration of phosphate-related industries is well developed in the Southern Region. - Phosphate demand for fertiliser is likely to increase. - Phosphate ore reserve in Gafsa will be depleted in 20 – 30 years. Other reserves that have been found in Tozeur are to be developed. - Phosphate-related industries have caused serious pollution in Gabès and Gafsa.	* Phosphate-related industries have further been developed as core industries in the Southern Region. * Qualitative, rather than quantitative, development has to be planned for higher value added. The production of purified acid and derivatives has to be developed. * Pollution control should be carried out strictly. Information on strict pollution control has to be widely diffused to improve the image of the Southern Region.
<Mining> - Rich and various mineral reserves represented by limestone, dolomite, silica, marble stone, gypsum, silica and salt are found over the Southern Region. - Investment in mining is limited. - Many persons in agriculture and tourism sectors fear that mining development will cause pollution and nuisance to their activities.	* Mining and value added to mineral resources would be promising industries given the prominent local resources. * Comprehensive scientific studies on major mineral resources and their sustainable utilisation have to be conducted at first. * Human resource development should follow.

Current conditions	Strategic orientation
<Construction materials> - Investment in manufacturing industries is limited. Value added to local mineral resources is quite limited. - Many persons in agriculture and tourism sectors fear that construction materials production will cause pollution and disturb their activities.	* Processing activities have to be encouraged through investment attraction, business environment improvement, and the promotion of linkages among related organisations. * Environmental Impact Assessment and mitigation measures against negative impacts have to be strictly conducted and implemented.
<Cosmetic products> - There are mineral resources, such as clay and salt, suitable for high value-added cosmetic production.	* Branding is specifically necessary for the promotion of cosmetic production.
<Oil and gas development> - A national project is planned for oil and gas development, gas pipeline construction, and the construction of a treatment plant and LPG bottling plant. This will provide a good opportunity for developing related industries.	* Employment is to be expected for the operation of the treatment plant and LPG bottling plant. * Metallic industry and maintenance services can be promoted.
<Textile> - Many companies in the South are in the textile industry sector. - The sector is currently labour intensive.	* Design and product development in the apparel sector have to be promoted for higher value added.
<Solar energy> - More than 70% of energy used in Tunisia depends on imported fossil energy. - The Southern Region is endowed with abundant solar energy (more than 300 sunny days / year). - There is a strong national policy for the promotion of renewable energy use.	* An institutional framework has to be established for research and development (R&D), training, investment attraction, financing/funding, and supervision. * Studies on local and international markets have to be conducted. * Feasibility studies have to be conducted after pilot projects. * Alliances among relevant organisations have to be strengthened for the incubation and investment attraction. * Pilot projects have to be implemented and business models have to be established. * The production of equipment/components for solar water heating systems and photovoltaic power generation has to be promoted, along with and related services.

Source: JICA Expert Team

S1509 Following is an analysis of the current conditions of the **tourism sector**. The sector has rich and underutilised resources.

Factors	Factor conditions	Demand conditions	Related and supporting industries	Firm strategy, structure, and rivalry
Description	**1. Tourism resources** ・ Beach activities ・ Archaeological sites ・ Berber villages ・ National parks ・ The Sahara ・ Oasis ・ Old Médina ・ Thermal springs	**1. Target segmentation** ・ Lack of products for high-end tourists **2. Sophistication of the demand** Main constraints identified by 50 travel agencies are:	**1. Services and products** Various services and products are provided by local companies, including: ・ 250 hotels with 62,059 beds ・ 46 touristic restaurants	**1. Public sector** <ONTT> ・ Policy making ・ Promotion ・ Quality control inspection ・ Monitoring

	・ Souk ・ Agricultural landscapes ・ Museums ・ Festivals ・ Handicrafts **2. Infrastructure** ・ 3 international airports ・ 2 commercial ports ・ Railway networks ・ Road networks **3. Investment** ・ 53 Million TND (2012) **4. Human resources** ・ 2 hotel schools	・ Regional security ・ Management of tourist sites ・ High quality services in hotels and restaurants ・ Adequate transportation services ・ Qualified workers ・ Environmental pollution ・ Seasonal unprofitability	・ 178 travel agencies ・ 2 Golfs courses ・ 1 Casino ・ Horseback riding ・ Scuba diving ・ Quad riding. ・ Excursions to the Sahara ・ Camel caravans	**2. Private sector** <FTAV> ・ Syndicate composed of local travel agencies for improvement of business circumstances. <FTH> ・ Syndicate composed of local hotel owners for improvement of business circumstances.

Source: JICA Expert Team

S1510 The **tourism sector** has several major **constraints:** i) seasonality of tourism products, including a lack of diversification; ii) a decline in the quality of current products, particularly the aged large-scale hotel facilities and infrastructure; iii) lack of capacity in available training opportunities, resulting in a decline of the quality of services; and iv) the need for new marketing strategies moving away from the image of mass beach tourism and towards the establishment of regional identities.

Potential destinations are as follows:

	Destination	Target Governorate	Orientation of Development	Main Product	Sub-products
1	Bleu - Méditerranée	Médenine, Gabès	"Relax", "Healthy", "Organic"...	Vacation in the beautiful Mediterranean Sea	Sports tourism, Medical tourism, MISE tourism (*), Agro-tourism, Culture tourism
2	Terre - Berber	Gabès, Tataouine, Médenine	"Original", "Traditional", "Tribal"...	Berber culture tourism	Thermal tourism, Agro-tourism
3	Rose - Sahara	Gafsa, Tozeur, Kébili, Tataouine	"Natural", "Peaceful", "Eternal"...	Ecotourism in the Sahara and oasis	Sports tourism, Mechanical tourism, Thermal tourism

Source: JICA Expert Team
Note: (*) MISE: Meetings, Incentives, Conferences and Exhibitions

S1511 The section below summarises the above analyses of the current conditions and describes corresponding strategic orientations. Tourism diversification can be realised by i) destination creation and management, ii) an upgraded service level, iii) conservation of tourism resources. Benefits of the tourism development can be distributed to local people by involving them in tourism development.

Current Condition	Strategic Orientation
<Destinations > - Mass beach tourism is predominant at present. Seasonal variation in employment is high in the sector.	* 'Berber' and 'Sahara' destinations have to be created and promoted for diversification.
<Service level> - Facilities and service levels are deteriorating-	* Service standards have to be defined and maintained through training and infrastructure and facility development.
<Rehabilitation and conservation of tourism resources> - The Southern Region has abundant touristic resources, but many resources are insufficiently or badly conserved.	* Both tangible and intangible tourist resources but have to be well conserved.

Current Condition	Strategic Orientation
<Tourism development for local people> - Tunisian legislation prohibits local people from inviting tourists to their residences. - The benefits of tourism development do not spread to local people.	* The laws have to be revised. * Community tourism has to be encouraged. * Agro-tourism or oasis tourism can be promoted through local community initiatives.

Source: JICA Expert Team

S1512 The current conditions of the **handicraft** sector are analysed as follows in terms of factor conditions, demand conditions, related and supporting industries, and firm strategy and rivalry. The sector has a broad production base of traditional products, but various aspects of the production base have to be improved.

Factor conditions	Demand conditions	Related and supporting industries	Firm strategy, structure, and rivalry
・Important source of employment and income generation ・A broad production base of traditional products is in place (tapestry, carpet, pottery and ceramics, accessories, traditional clothes, etc.). ・Raw materials of some products are readily available. ・Institutional supports, including quality certification (tapestry and carpets), different funding mechanisms, and construction of Handicrafts Villages are in place/underway.	・Local and external markets exist, though export is limited. ・The southern regions have two major touristic circuits around Djerba and Tozeur. Tourism development should enhance the business opportunities of the handicrafts sector.	・The manufacturing of raw materials (treated leather, sheep and camel wool yarn, in particular) is close to in the Southern Region. ・Additional efforts/ expenses are required to give small-scale handicrafts workers access to necessary raw materials. ・(Although limited) Microfinancing is accessible to handicrafts workers.	・Production units are largely very small. They are scalable, but financing is limited partly due to the decline in the domestic markets after 2009. ・Limited operational cash flow and marketing/ promotional capacities. ・Substantial competition is expected with similar products made in other countries that are highly competitive and already internationally recognized in the external markets. ・Moderate to strong rivalry with cheaper import products in the domestic market. ・Strong rivalry with Moroccan handicrafts in foreign markets.

Source: JICA Expert Team

S1513 The **Handicraft sector** has **attractive products,** including tapestry, carpet, accessories, pottery, and ceramics, among others. Some of the products are of exportable quality. The sector has the following **constraints and potentials**. The sector has potential in relations with tourism, traditional skills, and supportive government, while the sector has constraints in production bases and marketing.

Constraint	Potential
Fragmented production base Limited supply chain; Access to raw materials (accessibility, high costs) Weak marketing capacity: i) Producers (limited knowledge of the markets and trends, lack of means of promotion, limited access to finance), ii) Limited support by ONAT (budgetary and capacity constraints)	Proximity to touristic zones Traditional production knowledge and skills Institutional support in place: i) ONAT, ii) Access to finance, iii) Trade fair *<These potentials also need to be improved>*

Source: JICA Expert Team

S1514 The following table presents summary results of the current condition analysis and corresponding strategic orientations. Material procurement, marketing, financing, and business management are to be strengthened.

Current Condition	Strategic Orientation
<Value chain> - It is sometimes hard for artisans to procure materials of good quality at reasonable prices.	* Proper material provision has to be promoted after the needs-assessment studies.
<Marketing> - Artisans have limited or scanty knowledge of the markets. - Artisans have limited measures for sales promotion.	* Government supports for marketing have to be strengthened.
<Financing> - Although the government has prepared various financial schemes for the sector, artisans have limited access to financing.	* Micro-financing to artisans has to be enhanced. * The basic business management skills of artisans have to be improved.

Source: JICA Expert Team

6. CURRENT STATUS OF PHYSICAL INFRASTRUCTURE OF THE SOUTHERN REGION

S1601 The following shows the **main transport infrastructure** currently located in the Southern Region, such as roads, railways, ports and airports.

Source: Study Team

The transportation sector is faced by the following tasks and **challenges**:

* Improve/develop infrastructure in six Governorates and their cities (develop, operate, and maintain public transport & infrastructure)
* Maintain/expand the road infrastructure (highways, territorial continuity) with a focus on road and pedestrian safety (incl. detour roads)
* Maintain and expand the rail infrastructure, both for goods and for passengers (termination of section of lines; possibility of new lines)
* More logistic areas, in particular nearby ports, airports, and border crossing points
* Develop the capacity of commercial Ports, in particular Zarzis and Gabès
* More border crossing points
* Develop air traffic: more traffic in airports, or extensions, if appropriate

S1602 The following summarizes the current situation in the **water supply and wastewater treatment sector**:

* 75% of water is used for agriculture, 20% for domestic use, and 5% for industry/tourism.
* Most of the water resources contain high salinity (1-5g/l).
* Low connection ratio (60%) to the pipeline network for wastewater treatment.

New water resources have to be developed by creating new wells and extending the network with desalination plants.

1) South East (Gabès, Médenine, Tataouine)
   - Djerba and Ben Guerdane desalination plants and the network of Djerba - Ben Guerdane,
   - Zarat desalination plants and the network of Gabès – Médenine - Tataouine
2) Southwest (Kébili, Tozeur, Gafsa); Construction of desalination plants

The following issues remain to be solved in the sector:

- Well-water resources are limited; new water resources must be found;
  Seawater (desalination), reuse of wastewater (additional wastewater treatment process, revision of law), and the transmission of water inland from the seaside,
- Increased connection ratio for the wastewater collection pipeline

S1603 Following are the major issues facing the **power supply sector** in Tunisia:

1) Energy demand continues to expand at 4% every year and power generation depends mostly on fossil fuels such as natural gas.
2) Power generation with fossil fuels discharges greenhouse gas, which impacts the environment.
3) However, since the energy consumption is closely related to the economy of Tunisia, the restriction of the power demand is difficult.
4) The introduction of renewable energy and the enhancement of energy efficiency are therefore major challenges for the future.

Following are the major power supply issues facing the Southern Region:

1) The electrification ratio exceeds 99% in all six governorates of the Southern Region, which means that the power grid is well developed and meets the loading needs.
2) New plants are to be connected to the distribution network when they are built, when such is requested.

S1604 Following are the major issues facing the **telecommunications sector**:

1) The diffusion rate of telephone lines surpassed 100% throughout the Southern Region. The rate in the region dropped, however, during 2011 – 2012.
2) Mobile phones can be used in almost the whole of the Southern Region, excluding some areas where few or no people live.

"The Global Information Technology Report 2012" of the World Economic Forum was reviewed to understand how internet usage is diffused and how the internet can contribute to social and economic improvement. Tunisia ranked as follows out of 142 countries according to the report.

1) “Impact of ICT on access to basic services”: 35th
2) “ICT use and government efficiency”: 36th

Despite its high ranking on the above, Tunisia still ranks low in the following:

3) “Individuals using Internet”: 71st.
4) “Households with personal computers”: 92nd.

5) "Mobile broadband subscriptions": 112nd.
6) "Accessibility of digital content": 79th,
7) "Secure Internet servers": 78th

Improvement or encouragement on the above points will be required to improve internet service for regional development.

7. EXISTING DEVELOPMENT STRATEGIES OF THE SIX GOVERNORATES

S1701 **The existing development strategies of the six governorates in the Southern Region** were formulated in February 2012 in collaboration with MRDP, ODS, and advisory committees for the development of the respective governorates. The development strategies are composed of three chapters: i) Resources; ii) Opportunities; and iii) Strategic Economic Activities/Sector (*filières économiques*). A summary of the chapters follows below.

As analysed in the strategies, the Southern Region is endowed with the following prominent resources

a) Favourable climate (over the region) for early or off-season cropping
b) Geothermal resources (Gabès, Tozeur and Kébili) for early or off-season cropping and spa/rehabilitation tourism
c) Rich and various mineral resources (over the region) for related chemical, manufacturing and processing industries
d) Various significant natural resources and cultural heritages to be utilised for tourism promotion
e) Geographically, the region is located in a good position for trades with the neighbouring countries of Algeria and Libya

Besides, serious constraints in water resources affect most of the region, excluding some areas of Tataouine Governorate. Most of the groundwater potential is fully or over used.

Strategic economic activities/sectors are generally nominated well in consideration of the utilisation of the prominent resources of the respective governorates. There are, however, several strategic economic activities/sectors whose competitiveness might not be sufficiently discussed. For this reason, the JICA Expert Team (JET) proposed discussions on competitiveness in the first public consultation meeting before participants reviewed strategic economic activities/sectors.

Summary of the existing regional development strategy of the six governorates

Governorate	Resources	Opportunity	Strategic economic activities/sectors
Gabès	Agricultural lands: 599,300 ha (169,600 ha-fertile land, 416,600 ha-rangelands, 13,100 ha-forest) Agricultural products: dates, pomegranates, olive oil, henna, tomatoes, melons, cucumbers, peppers, apricots, etc. Livestock: Sheep, goats, cattle for milk and meat Construction materials: sand, white cement clinker, etc. Hot geothermal and mineral water for health tourism Coastline for aquaculture, natural and coastal tourism, and the richest fisheries in Tunisia Favourable climate for early agriculture Alternative energy (solar, wind, etc.) Handicrafts: 15,000 artisans for 'mergoum,' basketry, rugs, kilim, 'medhalla,' palm fibre, etc. Institutions: National Institute of Agricultural Engineering and National School of Engineers, Higher Institute of Computer Science and Multimedia, Applied Science and Technology, Technological Studies, Industrial Systems, Legal Studies, Management, Arts and Crafts, etc.	Investment opportunities: 1. Heavy Industries 2. 1. Agriculture and Agro-food processing (fruits, vegetables, and flowers in the European off-season, etc.) - Development of processing and packaging activities (including drying, dehydration and freeze-drying, and preserves and semi-preserves) - Possibility of production of essential oils, flavours and fragrances 3. Handicrafts - Promoting wood, plants, and woven products, stone sculptures, pottery and silver products 4. Manufacturing textile products, clothing, leather, wool, and skins 5. National and international outsourcing 6. Tourism - Possibility of developing health/rehabilitation tourism, agro-tourism, cultural, nature and oasis tourism 7. Information and communication technology, and telecommunication services	- Cropping with geothermal water for export - Organic agriculture - Extensive breeding of sheep/goats, beekeeping - Agro business with domestic partners - Intensive cattle breeding and dairy products - Introduction of new species (goose, quail, etc.) - Aquaculture for local/international markets - Aromatic and medicinal plants - Floriculture - Processing of agricultural and fishery products - Industries utilising useful substances - Products made from plastics and cardboard - Manufacturing of textile, mechanical, electrical and electronic products - Services of information and multimedia - Coastal tourism, integration of tourist circuits - Promoting geothermal tourism zone - Rehabilitation and health tourism - Upgrading of environment management and pollution control
Médenine	Agricultural and fishery resources: 201,300 ha arboriculture, 600,000 ha of rangelands, Annual fishing production of 17,000 tons, 80,000 ha for aquaculture Mineral Resources: clay, stones, brine Industrial and tourism resources: 113 industrial companies (60 - Agro-food processing), internationally renowned tourist attraction with 166 hotel units, 1,500 units of production and sales of handicrafts, 30 exporting Archaeological sites: Jiktus, Meninx, Henchir Bourgou, Haribus, Ghizen, Zita Palaces, etc. Institutions: Institute of Arid Region, a business incubator, Institutes of higher education specialized in biology, technology, information/ multimedia	Investment opportunities - Organic agriculture and early production - Medicinal and aromatic plants - Food processing (olive oil, fish products, etc.) - Ceramic industry - Chemical industry (salts) - Electrical, mechanical, and electronic industries - Tourism (cultural tourism, conference tourism, rural tourism, desert tourism, sports tourism, spa tourism, ecotourism, etc.) - Activities related to the knowledge economy - Handicrafts of all kinds - Development of the business park Zarzis for foreign trade, the export of products of the Southern Region, and supply to operating oil and gas companies	- Olive oil production - Fishing and aquaculture - Production of ceramics - Salt products - Production of red and white meat - Animal products (hair, wool and leather) - Handicrafts - Alternative tourism - International trade - Information technology and communication - Mechanical and electrical industries

Governorate	Resources	Opportunity	Strategic economic activities/sectors
Tataouine	Water resources: Potential-117.2 million m^3/year, exploitation rate - not more than 35%) Land: Surface area-38,889 km^2 (25% of national total and 43% of the Southern Region), agricultural lands: 1.7 million ha (rangelands -88%, areas of arborculture-11%, cultivable lands -1%) Infrastructure: Roads (1,200 km), industrial zone (10 ha, another developed zone of 14.7 ha), modern telecommunications network Institutions: Development associations, professional chambers, higher institute of technological studies, higher institute of art and crafts, Research institute in the arid region Mineral resources: Gypsum, marble rocks, clay, dolomites, silica-rich sands, brine, oil fields, mineral waters Landscapes and monuments: Saharan Ksars, Berber villages, Saharan circuits, natural parks and archaeological and geological sites, Sand dunes	Economic development: - Early production of several tree species and off-season vegetables (potatoes) - Livestock breeding (camels, goats and sheep) - Cropping in irrigated perimeters - Mining and processing mineral resources - Bottling of mineral water - Industries related to salts - Industries/services related to the petroleum sector - Alternative energy sources (solar energy, 288 days of sunshine per year) - Diversified tourism with rich heritage, archaeological and geological sites - Cultural events, Festival of Popular games - Diversified handicraft activities - Trade with Libya and Algeria	* Livestock breeding (cows, camels, rabbits, poultry) * Cultivation of aromatic, medicinal, and other industrial plants and essence extraction * Meat production/processing * Wool spinning * Gypsum/plaster/marble mining/manufacturing /processing * Bricks/ceramics manufacturing * Cement manufacturing * Mineral water bottling * Hotels and camps in desert/oasis * Rest station, animation unit * Multidisciplinary clinic * Travel agency, car rental * Agricultural machinery maintenance/repair * Equipment maintenance for petroleum companies
Gafsa	Agricultural Lands (521,000 ha, 318,000 ha – rangelands, 111,000 ha- fruit trees, 1,400 ha – oasis) Water Resources: Groundwate-128 million m^3/year (33 million m^3/year - shallow aquifer, 95 million m^3/year - deep aquifer (about 80 million m^3/year are exploited) Phosphates: Métlaoui, Kalaat Khasba Redeyef, Moularès, Shib M'rata, Moularès, Kef Shfaier, Oum Lakhcheb, Oued El Kef, Khasfa Eddour, Redeyef, Jellabia, Annual production 8 million tons, 5th largest in the world Useful Substances: Gypsum, quartz sand, feldspathic sand, white dolomite, brick clay, pottery clay, marble stones, calcium carbonate, chert, bentonite clays Archaeological Sites: Roman Pools, El Borj (La Kasba), Archaeological Museum, Escargotière, Jebel Mida, Orbata Park	- Natural resources to develop - Trade with Algeria - Trade utilising the airport and railway network - Highway Project of 250 km between Gafsa and Enfidha - Expanding network of natural gas to industrial areas - Several industrial projects (completed or in progress) - Plan for a technology park next to the airport - Project for a logistics platform near the airport - Industrial Zones extended - Improved entrepreneurial culture - Actors confident in the future of their region - High degrees of motivation, commitment, and ideas to support structures for investment - Diversification of industrial structure - Compagnie des Phosphates de Gafsa (CPG), Yazaki, Benetton, ICT companies, chemical group	- Automotive components - ICT (information and communication technology) - Electronic Industry - Renewable energy - Agro-business - Handicrafts - Cultural and ecological tourism

Governorate	Resources	Opportunity	Strategic economic activities/sectors
Tozeur	Land: - Total area- 559,287 ha, 233,226 ha of Chott, 326,061 ha -agricultural land (SA.U), 83,603 ha - irrigated oasis, 14,330 ha - arable land National Lands-352,893 ha (97%), Collective Lands - 9,258 ha, Private Land - 3,930 ha Agricultural resources: Dates (37,000 tons/year, annual export of 8,000 tons or Dinar 17 million (30% of the national export) Farmers' organisation: Number of farmers; 8,300, Number of breeders; 2,700, (800 landless), Number of farmers' groups; 81 Geothermal resources: Hot springs Mineral resources (useful substances): Phosphates, Salts, Carbonates (limestone), Sands Energy resources: Alternative energy (solar, wind) Cultural heritage: Sahara oasis landscape, archaeological heritage, culture and traditions, rich handicrafts, nomadic and sedentary heritage, mountain oases, nature (fauna and flora), geographical and geological aspects	- Organic agriculture - Preservation of native species and product development - Integration of livestock into oasis agriculture - Geothermal agriculture - Agricultural by-product industries - Utilisation of various salts - Utilisation of carbonates and sands - Industry related to solar energy - Industries related to phosphates and other useful substances - Textile, garment and leather sector - Restoration of old medinas in Tozeur/Nefta - Cultural, spa, sports, ecotourism - Agro-tourism in oases - Improving Saharan tours in Tamaghza/Nefta - High-end tourism - Local handicrafts - Software, telecommunication services, etc. - Call centres, customer support service, etc.	- Extraction, exploitation and processing of materials such as clay, sand, and gypsum - Exploitation of carbonates represented by limestone - Extraction and exploitation of mineral substances and conversion of phosphate reserves - Extraction and exploitation of minerals (sodium chloride, potassium, palite, sylvite, magnesium, bromide, sulfate salts, etc.) - Exploitation of geothermal water in the tourism sector - Utilisation of solar energy - Utilisation of wind energy
Kébili	Location: Heart of the South, Border with Algeria Land: Agricultural lands - 621,000 ha (50,502 ha is ploughed, 23,000 ha - palm oases, 567,600 ha - natural rangelands Water resources per year: Surface water -27 million m^3, shallow ground water - 5.49 million m^3 deep groundwater; 236.7 million m^3) Useful substances: Red clay, stone, sand, salt, etc. natural and cultural heritage: oases, zoos/national nature reserves, Islamic and roman monuments - Festivals and cultural events Infrastructure and collective facilities: - A higher institute of technological studies and 10 vocational training centres - A road network of 1,641 km	Enterprises to be established: - Export of electric energy to European markets - Processing of dates - Cold storage of dates - Export of dates - Production of vegetables and fruits - Production and sale of camel milk - Collection of palm waste and production of compost - Manufacturing of palm wood furniture - 3-star hotel - Tourist animation centre - Brick factory - Production of traditional handicrafts from camel hair - Production of fodder from dates/palm waste	- Valorisation of palm products (manufacturing: jam, forage from date waste, wood, and palm trees furniture, pulp and paper, dates pastry for delicacies, compost from palm waste, medicines, sugar, etc.) - Diversification of agricultural products through organic agriculture (dates, fruit, livestock, etc.) and medicinal, aromatic, and ornamental plants - Use of geothermal water for spa tourism and the production of vegetables and fruits, as well as for aquaculture - Valorisation of useful substances (rose of sand, gypsum, red clay, crystal sand, etc.) - Renewable energy (solar) for the production and export of electricity - Saharan tourism (adventure, camel race, hunting, etc.)

Source: Strategies of the governorates of Southern Region (February 2012), summarised by the JICA Expert Team

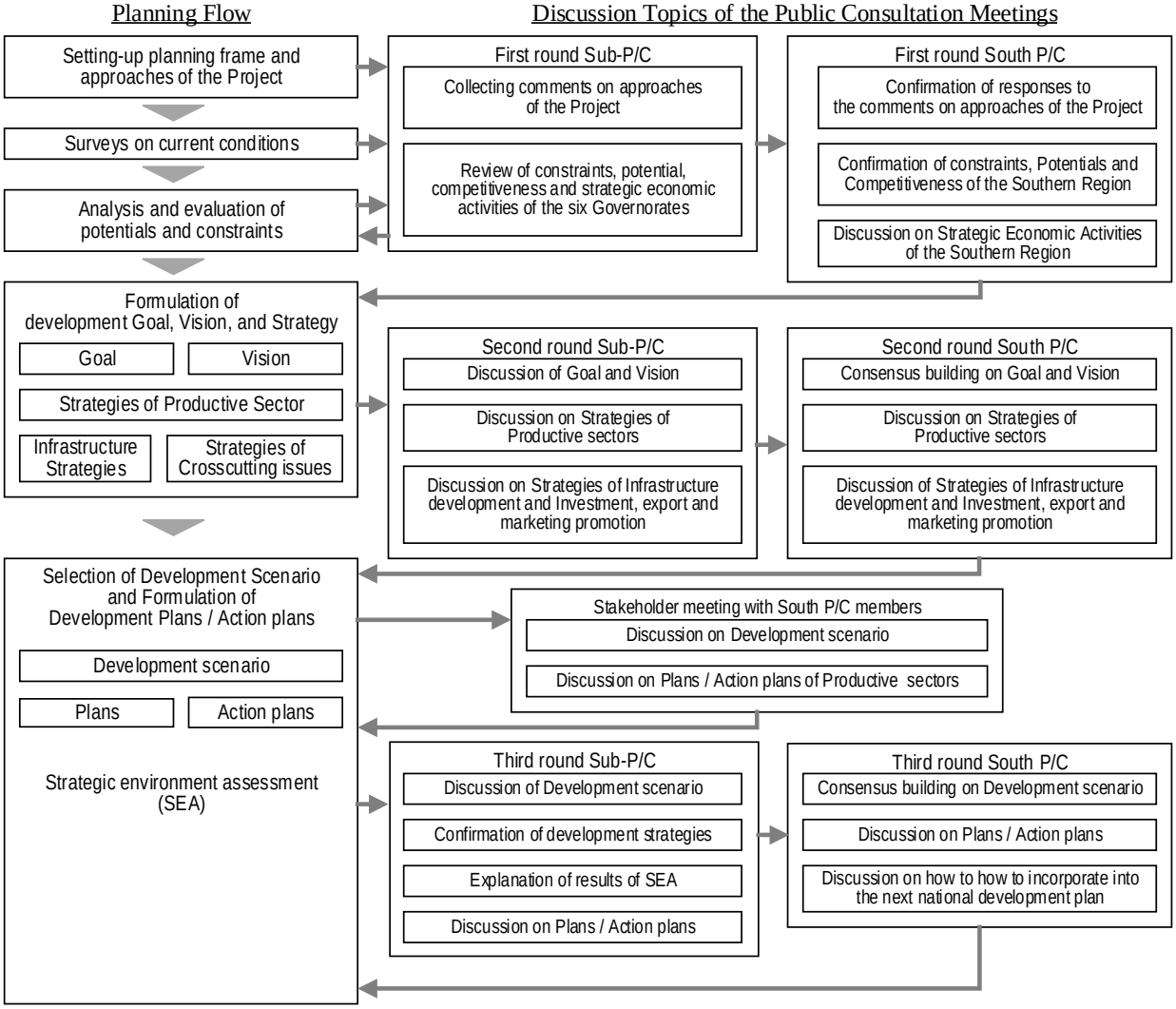
8. HOLDING PUBLIC CONSULTATION MEETINGS

S1801 The application of a **participatory approach** has been agreed by both Tunisian and Japanese sides since the beginning of discussion on the Project. Both parties intend to make the regional development planning 'transparent and socially responsible', and thereby fulfil the most important target of public administration raised in the Jasmine Plan. JICA also intended to contribute to the historical transition of Tunisia to a democratic society after the Jasmine Revolution.

The Japanese side proposed that the Project adopt a participatory approach that had been previously applied for regional planning in the national spatial planning of Japan. MDICI (then MRDP) and ODS both agreed to the proposal. At public consultation (P/C) meetings in the Project, selected members have profoundly discussed the draft proposals prepared and presented JICA Expert Team (JET) and ODS. In other more open public consultation meetings where anyone could participate, freely discuss issues, and give opinions, the opinions aired were not necessarily acted upon or reflected in the plans. The planning flow and discussions actually covered in the P/C meetings for the Project are illustrated below. As the planning progressed, important elements of such as "Goal", "Vision", "Strategies", "Plans" and "Action plans", the development scenario, and the progress and results of strategic environmental assessment (SEA) were discussed to reach consensus and reflect the results into the planning. When no consensus could be reached, JET continued examining the comments and sent back replies explaining how the comments/opinions were or were not incorporated, with reason(s). This was done for all remaining comments before JET finalised the planning.

Upon the determination of the application of the participatory approach, 'capacity development of MDICI and ODS on regional development planning' has been set as the Overall Goal of the Project; 'regional development planning through public consultation as a participatory approach' has been set as one of the Expected Goals to be attained after Project completion; 'capacity development of planning and administrative management for a participatory approach to the Tunisian counterpart through the Project' has been set as one of the Outputs of the Project; and 'technology transfer of development planning and capacity development of human resources' has been set as one the activities of the Project.

For the capacity development of ODS as an implementing agency, JET asked ODS to manage and administer the P/C meetings at its own initiative and offered full support for management and administration. The preparations for the P/C meetings have been carefully handled by ODS and JET; the presentations and facilitating activities have been handled by ODS with support from JET and auxiliary participation by MDICI; and the results have been reviewed/evaluated and fed back to the next meetings by both ODS and JET.



Source: JICA Expert Team

Relation between regional development planning and public consultation

S1802 **Public consultation (P/C) meetings** have been held at the **level of the governorate (Sub-P/C)** and the **level of the Southern Region (South P/C)** on three occasions to explain and discuss reports during the Project implementation: once for the Inception Report, once for the Interim Report, and once for the revised preliminary Draft Final Report. Summaries of discussions of Sub-P/C are forwarded to the South P/C and recommendations for the Project are compiled in South P/C meetings. Sub-P/C meetings have been held with participation of i) members of the National Constituent Assembly (later changed to the Assembly of the Representatives of the People, ARP), ii) representatives from relevant public administration organisations, and iii) persons from the private sector (business communities and labour unions, etc.)/civil societies (NGOs), and others (research institutes, development banks, etc.). In each Sub-P/C meeting of the first round, three members (including the Regional Director of ODS, who chairs the Sub-P/C meetings as chief representative) have been selected to represent the Sub-P/C in the P/C meetings of the South.

S1803 The objectives of the **capacity development of ODS** are defined in detail as follows. To achieve the objectives, the following activities have been conducted and the following results have been attained.

Objective	Activities	Results
Organising public consultation meetings	- Select members - Select a venue - Invite and register members - Prepare and distribute meeting minutes - Conduct review meetings, especially after first round meetings	* ODS can administer P/C meetings well, in general. * A remaining problem is the attendance rate, which drops to as low as around 70% even when deputies attend. * The comments by participants can also be problematic. Specifically, their comments sometimes seem not to represent their organisations. * Some are of the opinion that P/C meetings have to be organised in a fashion that allows any citizen to attend them.
Draw ideas, aspirations, recommendations from participants	- Prepare draft plans - Prepare presentation materials - Rehearse presentations - Conduct presentations	* ODS staff can conduct the presentations very well. * ODS needs abundant support for the preparation of draft plans and presentation materials.
Facilitate consensus	- Facilitation in P/C meetings by regional directors of ODS	* Some regional directors can facilitate well and get consensus among the participants. Others cannot.

(Source: JICA Expert Team and ODS)

Following are several recommended solutions to the remaining problems. The recommendations are embodied in strategies, plans, and action plans, mainly those for regional development administration as proposed in S2304 and S2305.

Remaining problem	Recommendation
ODS needs abundant support for preparation of draft plans and presentation materials	* ODS can collaborate in future planning with other public administration organisations in charge of respective sectors that are to be members of the recommended regional development taskforces that administer regional development. Meanwhile, a public consultation mechanism is to be separately set up to get comments from the private sector and civil societies. * ODS can self-develop presentation skills by continuing/reviewing presentations by itself. The capacity of ODS for presentation has reached a "practice makes perfect" level.
The P/C meetings have a low attendance rate.	* It will be necessary to officialise/formalise a regional development taskforce and public consultation mechanism and membership. Members with specific functions will have to be officially requested to participate by a relevant authority. * ODS has to request members to discuss on the topic within their organisations before attending the meetings and ask them to express the comments/opinions of their representing organisations.
Some are of the opinion that P/C meetings have to be organised in a fashion that allows anyone to attend them..	* It is recommended that public consultation meetings be continuously held with functions for deliberative discussion and recommendation, and that the discussion be profound. * Besides, opportunities must be provided to allow any person to raise any comments/opinions in response to the drafts published for public inquiry.
Some regional directors can facilitate well and get consensus among the participants. Others cannot.	* Regional directors of ODS have to be told not to express their own comments/ opinions in the meetings while they are facilitating, but to listen to the comments/opinions of participants and to concentrate on getting consensus. * Regional directors of ODS who lack experience in facilitation should have opportunities to observe the facilitation by experienced persons.

(Source: JICA Expert Team and ODS)

S1804 The first round P/C meetings were held in January-June 2014 with the following objectives: i) to collect comments/opinions on the methodology and technical approaches taken by the Project, and ii) to discuss the a) constraints/development issues (problématiques), b) potentials, c) competitiveness, and d) strategic economic activities/sectors (filières économiques) of the respective governorates. Major comments and responses to the comments raised in the

Sub-P/C meetings and conclusions of the South P/C meeting are summarised below. Regarding the comments on the approaches of the Project, JET/ODS has responded during the implementation of the Project as discussed in the Sub-P/C meetings and confirmed in the South P/C meeting.

Sub-P/C meetings

Agenda	Comment	Response*
Methodology and technical approaches for the Project	JICA Expert Team and ODS have to take account of the results of all existing studies.	ODS provided documents/reports of the past studies and JICA Experts referred to those documents/reports.
	The locations of the international and local poles and production bases presented are not agreeable.	Locations are shown in the presentation to explain the concept of networking and are to be discussed later. (When the JICA Expert Team proposed concentration of development in the coastal areas due to the existence of ports, participants, especially those representing inland areas, were strongly opposed to the proposal.)
	How does the JICA Expert Team recognise the roles of research and development (R&D) institutes?	R&D institutes will be analysed as potentials or development issues (constraints) depending on their status. Reinforcement or improvement of the institutes will be proposed as a strategy or a plan, if necessary.
	There have been many studies whose results have yet to be implemented.	To secure implementation, incorporation into the five-year development plans, the establishment of a budget allocation mechanism for implementation, and the establishment of a monitoring/evaluation regime by regional a development taskforce and P/C meetings are essential.
	How is climate change dealt with in the study?	Effects on and of the climatic change will be analysed based on the results of research and studies conducted so far and taken into account during the formulation of the strategy and action plans. It should be noted, however, that the effects will occur over very long periods of time and that climate change is not a major focus in the environmental and social aspects of the Project.
Constraints, potentials, competitiveness (competitive sectors/aspects), and strategic economic activities/sectors	They are discussed with cards on the boards. All constraints, potentials, competitiveness (competitive sectors/aspects) and strategic economic activities/sectors raised at Sub-P/C meetings were recorded.	Recorded constraints, potentials, competitiveness (competitive sectors/aspects), and strategic economic activities/sectors have been taken into account in the formulation of strategies, plans, and action plans.

South P/C

Agenda	Conclusion
Methodology and technical approaches for the study	The responses discussed in Sub-P/C meetings have been confirmed.
Constraints, potentials, competitiveness (competitive sectors/aspects), and strategic economic activities/sectors	* Constraints, potentials, competitiveness, and strategic economic activities/sectors discussed in each Sub-P/C meeting were presented by the respective regional directors of ODS. Afterwards those of the Southern Region were summarised (see below). * Strategic economic activities/sectors were discussed based on the summary table of discussion results in Sub-P/C meetings and reviewed. * The strategic economic activities/sectors reviewed are considered for the formulation of the strategies of the productive sectors.

Note: *: The response includes not only that made at time of the commenting but also that made later by the end of the Project.
(Source: JICA Expert Team and ODS)

S1805 "Problems", "Potentials", and "Competitiveness" of the governorates in the Southern Region discussed in Sub-P/C meetings were presented and summarised as follows as those of the

Southern Region. Members of the South P/C stressed that the most important constraints were "insufficient financing for investment projects" and that it would be necessary to improve legislation in the form of an Investment Code" or the like.

<Problems of physical factors>

- Water resources: Quality deterioration, lack of management, and groundwater depletion
- Insufficient infrastructure: Lack of effective ports, highways, railways, and industrial zones
- Logistic problems: Long distance from commercial ports and higher cost for logistics
- Need for new programmes: Programs in each productive sector aiming toward further economic development (agriculture, processing, tourism, mining, handicrafts, etc.)
- Need for further strengthening of the productive sectors: agriculture, tourism, and handicrafts

<Problems of human and institutional factors>

- Need for job creation
- Need for strengthening of the actual implementing organization: for marketing, investment promotion, land issues, etc.)
- Lack of research: Food processing, water/mineral/other resources, construction materials, transport, etc.
- Environmental issues: Contamination, desertification, and industrial pollution
- Need for the establishment of functional government administration: Lack of proper laws, lack of planning, lack of implementing organisations

<Potentials of physical factors>

+ Potentials for unique agriculture
+ Prominent resources and properties available for tourism
+ Availability of mineral resources
+ Capability to produce/manufacture products utilizing local advantages
+ Available natural resources
+ Proximity to international borders and potentials for becoming logistic centres

<Potentials of human and institutional factors>

+ Knowledge in productive sectors (agriculture, handicraft production, chemical, manufacturing, etc.)
+ Existence of research institutes

Out of the above-mentioned potentials, competitive points of the Southern Region was analysed and selected through a comparison with other regions.

<Competitiveness of physical factors>

+ Potentials for unique agriculture
+ Prominent resources and properties available for tourism
+ Availability of mineral resources
+ Availability of natural resources
+ Proximity to international borders and potentials for becoming logistic centres

<Human resources/institutional factors>

+ Knowledge in productive sectors (agriculture, handicraft production, chemical, manufacturing, etc.)

The results of the discussion on a) constraints/development issues (problématiques), b) potentials, and c) competitiveness were taken into account when JET examined the

development strategies, plans, action plans, and results of its own analyses of the current status of the productive sectors.

S1806 "*Strategic economic activities/sectors* (*filières économiques)*" of the governorates in the Southern Region have been compiled. They are summarized in the following table.

<Agriculture, Livestock breeding, Fishery, Agro/fishery -processing>

Strategic economic activities	Tat.	Méd.	Gab.	Kéb.	Toz.	Gaf.
Organic agriculture (traditional oil olive, figs, henna, honey)	□	○	□	□	○	○
Agriculture: focussing on the development of gardening for tomato, potato, and lettuce and arboriculture for oil olive, table olives, pistachios, and almonds	□		○	○	○	□
Geothermal agriculture (premium products using geothermal hot water)			○	○	○	
Intensification of sheep and goat breeding in oases and in irrigated perimeters	□	○	□	□	□	
Aquaculture		○	○			
Aquaculture in fresh water				□	○	
Development and modernisation of oasis agriculture				□	○	
Fishery		○				
Production of caviar					○	
Poultry			○			
Creation of irrigation perimeters in rural agricultural areas			○			
Revitalisation of the credit system to develop camel breeding	○					
Mobilization and use of hot water resources: Spas, aquaculture, production of premium products				○		
Agro-food processing (milk and derivatives, olive oil, fish, canned foods, etc.)	□	○	○	○	○	○
Industrialisation of palm products; packaging, cold storage, and processing of dates and palm by-products; palm wood furniture, etc.			○	○	○	
Olive oil		○	○			□
Aromatic and medicinal plants	□	○				□
Labelling of agricultural products	○					○
Livestock breeding (red meat) and valorisation of livestock products	○	○				
Milk production			○			
Products of drawers (honey, olive oil, olives, figs, dates.)			○			

<Mining and Manufacturing>

Strategic economic activities	Tat.	Méd.	Gab.	Kéb.	Toz.	Gaf.
Valorisation of available useful substances (marble, limestone, clay, gypsum, silica sand, magnesium, sodium, potassium, bicarbonate calcium, etc.)	□		○	□		○
Useful substances (red or terracotta products)	□	○				□
Industry of palm by-products (production of paper pulp, medical alcohol, biomass, wood processing, furniture, etc.)			○	○	○	
Phosphate and its derivatives (chemical Industries)			○			○
Salt and brine (high value-added by processing)		○			□	
Creating a pole for extractive industry and mining	○					□
Creating a pole for petrochemical industries (Sahara)	○			□		
Industry of fine and pharmaceutical chemistry			○			
All other industries that meet the needs of Libyan and African markets	○					
Automobile component industry: existence of Yazaki, CPG, ICG and regional transport companies						○
Mechanical industry and manufacturing			○			
Improvement of packing activity (quality, technique, shapes)						○
Military industry sector	○					

<Tourism>

Strategic economic activities	Tat.	Méd.	Gab.	Kéb.	Toz.	Gaf.
Alternative tourism	□	○		□	○	○
Beach tourism, cultural and ecological tourism	□		○	○		
Diversification of tourism	□	○		□	○	□
Cultural tourism	□				○	○
Investment in Saharan tourism (natural environment such as mirages, oases and deserts): excursions, camel racing, motorcycle rally, balloon riding, cinematographic activities, etc.)	□		○	○		□
Developing and sustaining artistic and cultural events to attract tourists	○			□		○
Thermal and cultural tourism (spa, oasis, mountain and Sahara)	□	○				
Eco- and cultural tourism (mountains, troglodyte houses and Ksars)			○			○
Creating an archaeological centre with a regional museum function	○					
Specificity of handicraft products	○	○		□		□
Handicraft sector that allows rural families to improve their income and help curb rural emigration	○	○		□		

<Others>

Strategic economic activities	Tat.	Méd.	Gab.	Kéb.	Toz.	Gaf.
Renewable energy (wind and solar energy, generation and commercialisation for domestic use, for STEG and water desalination)	□	○	○	□		○
International trade (logistic activities)	○	○	○			
Creation of an academic and technological pole of energy	○			□		
Further development of ICT and the international economy	○					□
Film villages in Matmata, Beni Zelten, and Ksar Haddasa	□		○			
Neighbourhood services (social services)			○			□
Logistics for value added (creation of wealth and employment)					○	□
Information system for good territorial governance					○	□
Improvement in quality and the quantity of water				□	○	
Ecological labelling of the region in all sectors	○					
Alternative medicine	○					
Facilitation for the creation of micro-business with moderate costs for main income and side income generation	○					
Extension of railway infrastructure to the whole of the Southern Region (Southeast and Southwest)	○			□		□

Note: Strategic economic activities marked with □ have been added at the request of the representatives from the respective governorates. Strategic economic activities marked with ○ have been agreed upon in the respective Sub-P/C meetings.
Strategic economic activities shown in red, blue, and green are included in more than three governorates, in two governorates, and in one governorate, respectively.

Source: Elaborated by ODS and JET based on discussions in the Sub-P/C meetings of the six Governorates and P/C of the South

The results of the discussion on strategic economic activities/sectors (filières économiques) as listed in the above table were taken account when JET members prepared the draft development strategies.

S1807 At the last stage of the South P/C of the first round, discussions were held on what kind of activities are necessary to generate synergy effects of 1) higher value-added, 2) job creation, and 3) sustainable development, that is, the factors identified in the Inception Report as the most important factors for the regional development of the Southern Region, through integration among regions, sectors, and institutions. The results of the discussion were further analysed by the JICA experts and taken into consideration when strategies for regional development were

formulated.

S1808 P/C meetings of the second round were held in September 2014 with the following agenda.

Agenda-1: Development goal and vision

Agenda-2: Strategies and plans for productive sectors (agriculture, fishery, livestock breeding and food processing, mining and other industries, including renewable energy, tourism, and handicrafts)

Agenda-3: Strategies and plans for infrastructure development (transport, water supply and wastewater treatment, power supply, and telecommunications), the promotion of investment and exports, and the improvement of marketing

Major comments raised in the Sub-P/C and South P/C related to the development goal, vision, and strategies are shown in the table below. Many comments at the meeting favoured the development goal, vision strategies, and plans proposed by JET/ODS. Many of them are omitted from the below table, however, as they were not extensively examined for the revision of the goal, vision, and strategies. In the South P/C, the respective regional directors of ODS summarized the discussions of each Sub-P/C meeting to the participants from other governorates. After the summaries were presented, comments on the draft proposals were discussed as they had been in the Sub-P/C meetings. The comments discussed in the South P/C meeting were quite similar to those discussed in the Sub-P/C meetings. Generally, participants were more interested in detailed approaches, i.e., plans and action plans to promote the productive sectors of their own governorates. After the second round South P/C, JET modified the development goal, vision and strategies as they are at present according to the comments as shown below. The following table summarizes how JET has reflected the comments into the final development goal, vision, and strategies.

The revised goal, vision, and strategies were finally confirmed in the third round Sub-P/C meetings of the six governorates. Comments on plans were also recorded and examined for the revision of plans and formulation of action plans

Comments on the development goal, vision, and strategies in the second round P/C and how the comments were reflected in the planning

Agenda	Comment	Reflection
Development Goal	- The "reduction of regional disparity" seems to be a goal of the national development plan but not of the regional development plans. - The reduction of disparity versus advanced regions of Tunisia is important. - There are many types of regional disparity. There are regional disparities within the Southern Region and even within a governorates in the coastal area. - The goal should be assessed with an indicator to show the progress of the regional development. - Regional disparity should include social disparity.	* The final conception of regional disparity encompasses disparity between the Southern Region and advanced regions of Tunisia, as well as disparity among areas within the Southern Region (see S2103). * The target indicator to measure the achievement of the development goal is set as 'household consumption per capita.' The target values for 2025 and 2035 are also set (see S2501 and S2511).

Agenda	Comment	Reflection
Development Vision	- The vision is framed as a set of aims of regional development. There cannot be any priority among the three elements of the vision, as all three are related to each other. - It will be important to set a vision that can be realised through enhanced linkage among the six governorates, inter-sectoral linkage, and linkage with neighbouring counties. - To achieve the vision, we have to change the development model from a conventional one. - There are few comments on the development vision. Participants wanted to hear concrete proposals on actions for infrastructure development and productive sector promotion and to realise the vision.	* The development vision has remained as it is at present. * Strategies are formulated to enhance linkage among the six governorates, inter-sectoral linkage, and linkage with neighbouring counties. * The need to change the development pattern is considered when the development scenario and strategies are formulated
Common Strategies	- Legal and institutional aspects should be included in a common strategy. - 'Human Resources Development' with education and training to meet the needs of the regional economy should be included as another common strategy. - Water resources management should be one of the common strategies, as water resources in the Southern Region are scarce and optimal use of the resource is essential important for productive sector promotion. - The promotion and decentralisation of research and development (R&D) is an essential strategy for all sectors. R&D has to be included as an action plan for all productive sectors. - Decentralisation of R&D is necessary	* Common strategies have been revised to the following crosscutting issues in consideration of the comments. Issues a), e), and g) are separately discussed in the respective sections, while the others are discussed in the sections for the productive sectors. a) Regional development administration, b) Legal and regulatory arrangements, c) Human resource development, d) Research and development, e) Water resources management, f) Environmental conservation, g) Investment, marketing, and export promotion
Strategies for agriculture, fishery and food processing	- Problems of land tenure have to be solved for the promotion of agriculture. - Financing for agriculture promotion has to be included as a strategy. - The solution of water resources has to be included in the Project. - Livestock breeding should be included as a strategy. - The recovery and preservation of triple-layer agriculture in oases have to be included in the strategies. - The potential of aromatic and medicinal plants has to be considered. - Tunisia has had bad experiences with agricultural cooperatives. It would be better to review the strategy on agriculture. - The linkage between the agriculture sector and tourism sector has to be strengthened.	* The strategies of this sector have been reshuffled from operation-wise to product-wise. * Recommendations have been formulated on capacity development, modification of legislation, and financial supports to farmers (including farmers facing land/mortgage problems). * Water-saving agriculture has been proposed from the beginning, while water resources management is comprehensively discussed as a crosscutting issue. * A strategy for livestock breeding and related processing has been additionally formulated. * The strategy on oasis agriculture has been totally reviewed aiming at preservation and sustainability. * The development of promising products and promotion of their potential are proposed as strategies. * Strengthening of farmers' groups is included as a plan or an action, as collective activities by farmers' groups are essential for promotion of the sector. * Enhanced linkage between the tourism sector and handicraft sector is recommended as a strategy.

Agenda	Comment	Reflection
Strategies for mining, and other industries, including renewable energy	- The high potential of alternative energy development in the Southern Region should be considered in strategy formulation. - As a national project is planned for natural gas development, a strategy should be formulated for development of related industries. - A strategy related to the petroleum sector has to be added. - A strategy for environment-friendly industrial development has to be included in this sector.	* The strategy of renewable energy development continuously constitutes the strategies of this sector. * The promotion of oil- and natural-gas-related industries is added as a plan (sub-strategy) under a strategy for higher value-added production utilising abundant mineral resources. * Environment-friendly industrial development is an important strategy of the sector.
Strategies for the tourism sector	- Local resources have to be utilised effectively. - Medical tourism has to be promoted. - Laws/regulations prohibiting tourists from visiting the homes of local people have to be revoked/revised. - Linkage with agricultural sector has to be enhanced.	* Instead of recommending specific destinations and types of tourism, a strategy for destination management (including development) is proposed. * Modification of the law is proposed as a plan under a strategy. * The promotion of agro-tourism and enhanced coordination with the agriculture sector are two strategies of this sector
Strategies for the handicraft sector	- A strategy to improve the procurement of raw materials for handicraft production should be formulated. - Strategies for establishing artisans' groups and marketing are required. - Supports to micro- and small-scale enterprises have to be included in the handicraft sector strategies. - Financial supports are very important in the sector.	* Measures to strengthen the value chain with the livestock sector are proposed as a plan. * Reinforcement of marketing and commercialisation is included as a plan. * The establishment of enterprises is encouraged in the plans and actions of the sector strategy. * A plan is formulated to strengthen micro- and small-scale enterprises with technical and financial assistance.
Strategies for the transport sector	Instead of commenting on the strategies of the sector, participants requested/proposed various projects for port, road, railway, and airport development.	JET has replied that the implementation of requested/ proposed projects has to be determined after checking the economic validity of the projects.
Strategies for water supply/ wastewater treatment	Apart from one proposal for water conveyance from the northern region, there were no new strategy requests or proposals.	* As for the water conveyance, JET told meeting participants that the people in the northern region may not agree, as they can use their local resources for themselves. The expert in charge said that the conveyance would be costly and that he would recommend brackish groundwater desalination in the Southwest region.
Strategies for power supply	The only comment provided was that to support power generation using solar energy, including off-grid use for desalination in farms.	Power generation using renewable energy has remained one of the strategies.
Strategies for telecommuni-cation sector	Development of telecommunication is quite important for the regional development and has to be promoted in less developed areas.	Introduction of universal service is recommended as a strategy of the sector.

Source: JICA Expert Team and ODS

S1809 P/C meetings of the third round were held in May-June 2015 with the following agenda.

Agenda-1: Development Scenario

Agenda-2: Action Plans of Productive Sectors and Strategic Environmental Assessment (SEA)

Agenda-3: Action Plans of Infrastructure Sectors and SEA

Agenda-4: Action Plans of Investment, Marketing, and Trade Promotion (South P/C only)

Major comments and responses to the comments raised in the third round Sub-P/C meetings on the development scenario and how they were reflected into the final version are shown in the below table. As the development scenario was preliminarily discussed in meetings with the South P/C members in February 2015, participants of the Sub-P/C meetings agreed upon the proposed scenario within a short time and the ensuing discussions focused on how the selected scenario could be implemented.

Agenda	Comment	Reflection
Development Scenario	Scenario 3 is agreeable. The regional development should proceed with public-private partnership (PPP) and participatory approaches with secured transparency.	Strategies on regional development administration and investment/marketing/trade promotion encourage PPP and participatory approaches.
	For effective development under Scenario 3, capacity development of public administration is essential.	The main approach proposed by the Project is to integrate efforts of public administration through coordination mechanisms to maximally use the existing capacities of related ministries and state agencies.
	Substantial support from public administration is vital for legal arrangements, financing, infrastructure development, research and development (R&D), and other improvements in the business environment.	Supporting actions are proposed mainly in the action plans of the productive sectors and plans for infrastructure development.
	The distribution of clusters has to be carefully examined to achieve balanced job creation.	JET also recognised balanced job creation as one of the most important key elements. The locations of the clusters should be discussed and proposed by the regional development taskforce, and also in the P/C meetings.

Source: JICA Expert Team and ODS

There were many recommendations/proposals for additional actions to include in the action plans for the productive and infrastructure sectors. JET/ODS tried to respond to these recommendations/proposals as much as possible within the meetings. JET also requested ODS to collect all comments that the Sub-P/C members still had and to send them to JET. Working with all of the comments submitted, JET has examined how to respond and prepare tables that describe responses to all of the comments. The table explains why certain comments are not reflected, for cases where no revisions or modifications were made by the expert charge to address those comments.

S1810 For discussion in the South P/C meeting of the third round, JET proposed specific discussion points to finalise the action plans of the respective sectors, instead of summarising the comments raised in the Sub-P/C meetings. As for the agriculture, livestock breeding, fishery, and food processing sector, JET/ODS asked for points regarding public-private partnership (PPP) and suggestions for financial support and solutions for land issues. Though participants could not reach definite answers to some questions, the opinions mentioned in the meeting were fully taken into account when the JET member finalised the proposals.

Agenda	***Action plans for agriculture, livestock breeding, fishery and food processing***
Discussion points	1. Regarding Public-Private Partnership and capacity development of relevant organisations: * Which organisations are relevant and to be included in the PPP? * Which organisations have priority for capacity development? 2. Recommendations of laws and policies to help farmers, farmer's groups and private companies including: * Suggestions for providing further financial support * Suggestions for solving real estate issues
Opinions/conclusion	
- Regular association activities and PPP are the bases for cluster development. - Decentralisation, legal arrangements for approval of PPP, and solutions for land problems are required for the development of agriculture. - Professional organisations should play important roles and have priority in capacity building. - Farmers, especially those in remote villages, lack know-how in commercialisation and marketing. Supports by the state are necessary. - Financing/credit to farmers groups and the organisation of inter-governorate coordination is necessary. - For cluster formation, the private sector should participate from the planning stage. - A legal framework has to be established on agricultural cooperatives/groups. - Incentives and supporting measures focused on strategic economic activities (filières économiques) have to be provided.	

Source: JICA Expert Team and ODS

Regarding mining and other industrial sectors, including renewable energy, discussions focused on 'how to promote renewable energy development' and the 'redistribution of benefits from local natural resources development to local people.' Answers were taken account when the JET member finalised related plans and action plans.

Agenda	***Action plans for mining and other industrial sectors, including renewable energy***
Discussion points	1. Regarding renewable energy (how to lower costs and how to increase sales of electricity): * How do we promote renewable energy development? * How do we expand the markets for renewable energy? * How can we increase the volume of energy generated? * A new national law on "Redemption Price" was approved. What can we do, and how can we ask the state to make the legislation effective for the national energy market? 2. Regarding the management of mineral resources development: * Some argued that we need more local autonomy in the development of certain natural resources (such as oil and phosphate), or that resource development should be oriented to benefit more local people. * Some ideas for tackling these problems have been proposed. * Creating development funds financed by revenue from oil extraction (this will be described in Investment section) * Modify tax flow for the mineral development business * Should we include these proposals, or do you have any other ideas?
Opinions/conclusion	
- We can use renewable energy for water desalination. - Establishing an R&D Centre on renewable energy is recommended based on the existing higher institute of energy. - R&D can be specialised in renewable energy, and the developed products or know-how can be exported. - The energy balance of Tunisia has fallen to a 75% deficit. The use of renewable energy, such as solar and wind energy, has to be encouraged. - A share of revenue from natural resource exploitation can be destined for the development of productive sectors. - The benefits from resource exploitation can be used for the whole Southern Region development.	

Source: JICA Expert Team and ODS

As for tourism, destination management and the introduction of tourism tax were discussed. Participants gave clear answers to the former topic while providing only partly formed ideas for the latter topic. Their answers were used for the finalisation of the action plans for this sector.

Agenda	***Action plans for the tourism sector***
Discussion points	1. Regarding the tourist destination approach at the level of the proposed action plans (TM-1-1; Establish the destination management organisation (DMO), TM-1-2; Promote the destinations): * Is the government responsible for implementing the plans? * Who should implement the plans? 2. Regarding the proposal for the mobilisation of the budget (TM-1-2; Establish destination contracts, TM-1-4; Create a taxation system, TM-2-4; Mobilize budget for improvement of tourism services) * Where will the budget come from? Is this an effort only by the private sector without state intervention? * At what level can a taxation system be created?
Opinions/conclusion	
- With the destination management approach, tourism in the Southern Region can be promoted. Desalination is expected to create related employment, such as travel guides, restaurant workers, etc. - DMO is to be composed of the Tunisian Hotel Federation (FTH), Tunisian Federation of Travel Agencies (FTAV), Tunisian National Office of Tourism (ONTT), and local NGOs. - Tourism development can be achieved through cooperation between NGOs, the Ministry of Tourism, and professional organisations. - A taxation system can be established at the national level and distributed to regions. - Taxation is done at the local level in Italy. Many types of taxation can apply in the Southern Region.	

Source: JICA Expert Team and ODS

Regarding the handicraft sector, JET/ODS neglected to prepare specific questions for the South P/C, in the interest of time. Instead, the South P/C meeting focused more on discussions about the other sectors. Comments on the plans and action plans for the sector were collected, examined, and considered at the time of the draft final report preparation.

For the infrastructure sector, discussion in the South P/C of the third round focused only on the transport sector. Instead of proposing specific discussion, the JET member in charge explained the general concepts of the infrastructure development programmes. After the explanation, participants repeated the requests/proposals. JET provided the answer shown in the table below, in addition to asking for comments and promising to send replies to all comments.

Agenda	***Action plans for the infrastructure (Transport) sector***
Discussion points	* Enhancement of road networks (freeways, 4x4 lanes roads, improvement in alignment in sections with frequent accident, tourist roads, regional/rural roads) * Extension of railways * Expansion of ports * Improvement of airports * Improvement of urban transport
Opinions/conclusion	
- There were many proposals and recommendations for specific infrastructure development, especially from the participants from Tataouine and Kébili. JET explained, "All of the proposals/recommendations at the meeting, as well as those raised in Sub-P/C meetings, will be examined, and responses will be sent back to the participants." - The JICA Expert Team mentioned that decision-making for specific infrastructure projects would be made by the Tunisian people and that the JICA Expert Team would propose the strategies, plans, and action plans from a technical point of view. - The JICA Expert Team expects that any infrastructure development projects will be implemented after feasibility studies prove the validity of the projects.	

Source: JICA Expert Team and ODS

As for the investment promotion, export promotion, and marketing improvement, actions to be taken after the promulgation of the Investment Code and marketing improvement were discussed. Although questions were raised about the actions to be taken by people of the Southern Region, most of the answers were requests to the central government.

Agenda	***Action plans for Investment Promotion, Export Promotion and Marketing Improvement***
Discussion points	1. Regarding investment attraction, revised Investment Code and Investment Law are going to be promulgated: * What can we do on our own in the South? 2. Regarding marketing improvement: * What areas shall we take collective actions to grow together? * Which markets are good targets for us? * Introduction of standardised quality certificate? * Establishment and adoption of regional brand "label"? * Do we want packaging material industry in the region? * Collective logistic infrastructure/transport?
Opinions/conclusion	
- It is important to provide more advantages to inland areas especially for employment generation projects. - We have to examine whether and how the revised investment code will bring more encouragement and advantages to the Southern Region. - We cannot do anything for marketing of Southern Region products before establishing Southern Region Development Committee. - We are waiting for reforms provided in the revised investment code, financial legislation and system, and basic infrastructure. - Decentralisation and establishing regional offices of FIPA are necessary. - It is important for coastal and inland areas to have same chances and opportunity to develop. Current uneven conditions, such as infrastructure development, have to be resolved.	

Source: JICA Expert Team and ODS

Results of the SEA were presented in the six Sub-P/C meetings. The comments were focussed on the environment-friendly development of the productive sectors. The comments on that theme were considered when the plans and action plans of the productive sectors were finalized. JET requested the ODS Regional Directors to collect comments on the results of SEA from the Sub P/C members and send them to JET. JET responded to all comments, just as it did for other sectors.

In addition to the above agenda, the participants of the South P/C meeting discussed "how to include short-term development plans and action plans in the next five-year National Economic and Social Development Plan". Participants gave the following recommendations to ODS, JET and JICA. JET followed the recommendations fed back to JET during the mission period for the explanation and discussion of the draft final report.

Agenda	***Inclusion of the plans and action plans in the next five-year National Economic and Social Development Plan***
Discussion points	* What should we do for our plans and action plans to be included in the next five-year National Economic and Social Development Plan (NESDP)?
Recommendations	
- The NESDP is composed of sector development plans and regional development plans. It will be necessary to explain the strategies, plans, and action plans to the governorates and relevant ministries. - It will be necessary to explain the strategies, plans, and action plans formulated by the Project to the members of ARP and the President's Office to ensure implementation at the national and legislative levels. - ODS should have opportunities to explain the results of the Project to the Governors and Delegations. - The National Committee for Cluster Development has been established, and the formation of a dates cluster in Gabès, Kébili, Tozeur and Gafsa has been planned. It is recommended that JET meet with the national committee. - Outputs of the project have to be incorporated in the national development plan through the collaboration of public administration organisations, professional organisations, and NGOs.	

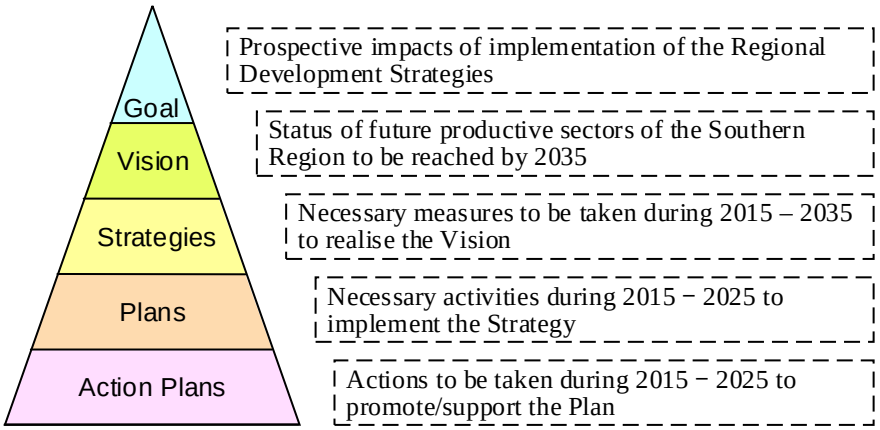
Source: JICA Expert Team and ODS

PART 2: DEVELOPMENT PLAN OF THE SOUTHERN REGION

1. PLANNING FRAME AND SOCIO-ECONOMIC FRAMEWORK FOR REGIONAL DEVELOPMENT

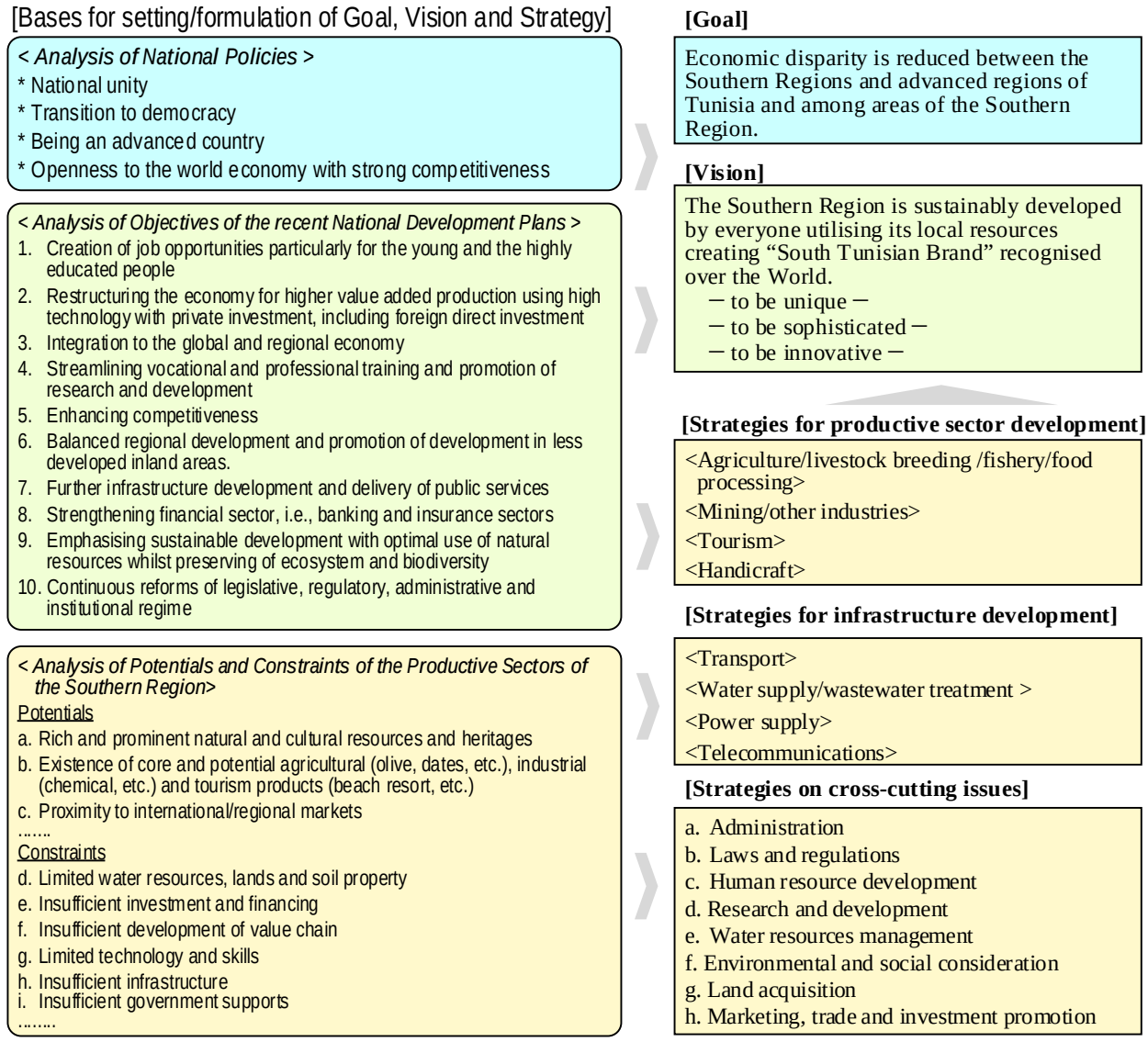
1.1 Planning frame

S2101 The **Planning frame** for the development of the Southern Region is set as shown below. After the development goal was initially defined, a vision was set by deliberating the status the productive sectors would have to realise to achieve the goal. The relation between the goal and vision is one between an objective and means. When the vision is attained, the goal will also be achieved. Yet the goal will be achieved not only through the attainment of the vision, but through other factors, as well. The same relations exist between the vision–strategies, the strategies–plans and the plans –action plans.



Source: JICA Expert Team

S2102 The goal and the vision are set **based on** the 'national policies' and 'objectives of the recent national development plans' with a recognition that even the goal and vision for regional development should be set in line with the policies and objectives at the national level. Besides, the strategies are formulated based mainly on the results of analyses of 'potentials and constraints of the Southern Region', considering that effective implementation of the strategies and achievement of the vision are highly influenced by the circumstances of the Southern Region.



Source: JICA Expert Team

S2103 The **goal** of the regional development is set as follows:

> *Economic **disparity** is reduced between the Southern Regions and advanced regions of Tunisia and among areas of the Southern Region.*

Balanced regional development would be the most important policy of every nation of the world for its unity as a nation. In addition, in the context of Tunisia, imbalanced regional development and the frustration caused by it could be recognised as triggers of the Revolution. Every development policy in Tunisia emphasises balanced regional development and allocates more resources to less developed regions.

S2104 The development **vision** is set as follows:

> The Southern Region will be *sustainably* developed with *more employmen*t for everyone creating *higher value* and keeping *strong competitiveness* in the world economy. — to be *sophisticated*, *unique*, and *innovative* —

The vision implies three elements of i) ***sustainable development***, ii) inclusive development with less unemployment and ***more job creation***, and iii) ***strong competitiveness*** in the world economy ***with higher value-added***.

Sustainable development is regularly set as an important objective in the recent national economic and social development plans and other development plans in Tunisia. Target indicators of this objective are i) those related to use of water resources, which are quite limited in the Southern Region, and ii) share in use of renewable energy for power generation to the national total because of the current high dependence of imported fossil energy and sincere efforts of the Government to promote renewable energy use. Considering proposed strategies, plans and action plans, target indicators related to a) pollution control, b) environmental conservation, c) water resources (i.e. groundwater in the Southern Region) and d) renewable energy were examined as candidate indicators for sustainable development. Compliance with regulations/norms/standards is recommended as a target indicator for a) and b) above, and indicators related to c) and d) above are specifically proposed (see S5101).

More job creation is always placed as the top priority in the recent national economic and social development plans, as well as in the regional development policy and strategies. The target indicator on this objective is the 'number of jobs created per economically active person'.

Tunisia's policy has been inclined to open its economy to the world economy. This openness offers opportunities for exports and at the same time exposes the economy to harsh competition in all exportable and importable goods and services. The Tunisian economy has to keep ***high competitiveness.*** The economy of Tunisia, as well as that of the Southern Region, has to ***increase value-added per capita*** and has to be upgraded ***to a more unique, sophisticated, and innovative*** economy.

Despite the importance of high competitiveness and higher value added, target indicators on these elements of the vision have not been set because appropriate indicators have not been found and monitoring requires regular data released from statistical or research institutes,

The target productive sectors have been determined finally as a) agriculture, fishery, livestock and food processing, b) mining and other industrial sectors (including renewable energy), c) tourism, and d) handicrafts. The target sectors and sector strategies have been identified based on the potentials and constraints analysed by JET members, proposed in the existing strategies of the six governorates, and discussed in the first round public consultation (P/C) meetings.

At the time of the preliminary design survey of the Project, a), b) (to say exactly, listed just as 'industry'), and c) above were nominated as the target productive sectors. In the existing strategies of the six governorates and discussions of the first round P/C meetings, d) handicrafts, e) renewable energy, f) information and communication technology (ICT), and g) electric and electronic manufacturing were proposed as additional target productive sectors. After analysis of the potentials and constraints, JET agreed to add d) and e) above as targets. However, JET

proposed not to include f) above as a separate target sector and recommended the use of ICT commonly for their promotion of all sectors. JET has not recognized g) above as a promising sector, as the Southern Region might lack specific advantages for promotion compared to the other regions of Tunisia or other counties.

1.2 Setting socio-economic framework

S2105 Turning to the socio-economic framework, the **population** of Tunisia and population of the Southern Region for the target period (i.e., for the year 2015-2035) have been estimated based on the 2014 population census. By 2025 and 2035, the population of Tunisia is estimated to increase by 11% and 16%, compared to the actual 2014 population. The rates of increase for the Southern Region will be 7% and 12%, respectively. The populations of Médenine, Tozeur, and Kébili will grow faster, with growth rates near that of Tunisia overall. The populations of Tataouine, Gafsa, and Gabès will grow more slowly than the average for Tunisia overall. In some delegations, populations have decreased with considerable negative growth rates. For those delegations, specific measures should be taken to stop the population outflow.

(Unit: thousand persons)

	2014 (Census)	2015		2025		2035	
Tunisia	**10,982.8**	**11,147.1**	**1.01**	**12,148.8**	**1.11**	**12,776.6**	**1.16**
Southern Region	**1,605.5**	**1,617.8**	**1.01**	**1,723.0**	**1.07**	**1,801.7**	**1.12**
- Gabès	374.3	377.5	1.01	404.5	1.08	424.0	1.13
- Médenine	479.5	484.2	1.01	523.5	1.09	550.9	1.15
- Tataouine	149.5	149.9	1.00	154.8	1.04	159.8	1.07
- Gafsa	337.3	338.6	1.00	350.5	1.04	362.0	1.07
- Tozeur	107.9	109.1	1.01	118.6	1.10	125.1	1.16
- Kébili	157.0	158.5	1.01	171.1	1.09	180.0	1.15

Source: elaborated by JICA Expert Team based on INS data

S2106 Based on the above-mentioned population estimates, **economically active population** (EAP) are estimated as follows. Gabès, Médenine and Gafsa have comparatively larger numbers of economically active persons, while Tataouine, Tozeur and Kébili have somewhat smaller figure. EAP in the Southern Region is estimated to grow 1.22 times during the period of 2015-2035. In the period, EAP of the Southern Region will increase by 119 thousands.

(Unit: thousand persons)

year	Southern Region	Gabès	Médenine	Tataouine	Gafsa	Tozeur	Kébili
2015	551.7	137.1	159.0	44.7	112.1	40.1	58.7
2020	588.2	147.2	169.0	47.5	117.6	43.1	63.8
2025	617.6	155.9	176.5	49.6	122.2	45.5	67.8
2030	647.9	165.2	182.8	52.8	127.9	47.8	71.4
2035	670.5	172.9	186.5	55.5	132.1	49.6	74.0
(2035–2015)	118.8	35.8	27.5	10.8	20.0	9.4	15.3
(2035/2015)	1.22	1.26	1.17	1.24	1.18	1.24	1.26

(Source) Elaborated by JICA Expert Team

S2107 The growth rates of the total factor productivity (PGF), employment factor, and potential production estimated in a paper issued by Tunisian Institute of Strategic Studies (ITES) are applied for estimation of the GDP, GDP per capita, and unemployment rate in 2025 and 2035. The **GDP growth rates** estimated for the moderate case in the paper are somehow similar to

those estimated by the EIU (Economist Intelligent Unit) in the Interim Report of this Project, i.e., 4.1% for 2013-20 and 4.9% for 2021-2030. According to the estimate with the population projection shown in S2101 above, the GDP of 2025 and 2035 is forecast to grow 1.7 times and 2.7 times, respectively, versus that of 2013, while the GDP per capita is expected to grow 1.5 times and 2.3 times, respectively, versus that of 2013, in the moderate growth case. In the same case, unemployment rates in 2025 and 2035 will fall to 12.9% and 10.4% from 15.3% in 2013. *Note that the JICA Expert Team applies the above-mentioned estimates to provide a socio-economic context for the planning of the Southern Region development while factoring in external conditions for the Region, and that the figures do not show any estimates of targets for the economic development of Tunisia or the Southern Region.*

Factor	***Growth of the PGF (%)***			***Growth of the employment factor (%)***			***Growth rate of the potential production (%)***		
Case	rapid	moderate	slow	rapid	moderate	Slow	rapid	moderate	slow
1983-1990	0.8			2.7			3.5		
1991-2000	2.2			2.7			4.9		
2001-2010	2.0			2.5			4.5		
2011-2020	2.6	2.2	2.0	2.9	2.5	1.8	5.5	4.7	3.8
2021-2030	3.4	2.5	2.0	2.6	2.1	1.6	6.0	4.6	3.6
2031-2040	4.0	3.0	2.0	2.4	1.8	1.3	6.4	4.8	3.3

Source: Quelles Perspectives de Croissance a Long-Terme, ITES, September 2014

Indicator	**Growth case**	**2013**	**2015**	**2020**	**2025**	**2030**	**2035**
GDP	Rapid growth	1.00	1.11	1.45	1.95	2.61	3.55
	Moderate growth		1.10	1.38	1.73	2.16	2.73
	Slow growth		1.08	1.30	1.55	1.85	2.18
GDP per capita	Rapid growth	1.00	1.08	1.34	1.73	2.25	3.00
	Moderate growth		1.06	1.27	1.53	1.87	2.31
	Slow growth		1.04	1.20	1.38	1.59	1.84
Unemploy-ment rate	Rapid growth	15.3%	14.9%	13.4%	11.9%	10.4%	7.9%
	Moderate growth		14.9%	13.9%	12.9%	11.9%	10.4%
	Slow growth		15.1%	14.6%	14.1%	13.6%	13.1%

Source: elaborated by the JICA Expert Team

S2108 The following examines indicators of gross capital formation, foreign direct investment (FDI), and foreign exchange rate, as well as their implications for the economic development of the Southern Region, in the estimated economic growth scenarios:

Gross capital formation is a source of economic growth and there is a relation between GDP growth and gross capital formation. As capital formation, especially private investment, is required for the economic development of the Southern Region, measures to improve the business environment and provide incentives would be essential for the development of the Southern Region.

FDI inflow has a relation with GDP growth. FDI is expected to create more jobs and to induce renovation of local businesses. Strategic and collaborated attraction, as well as development of financial markets and human capital, will be necessary to attract FDI and take full advantage of FDI. The *foreign exchange rate* has no or little direct relation with economic growth. It may, however, affect export and tourism. The development vision of higher value added and high competitiveness is set to cope with a strong Tunisian dinar, which could possibly occur under the rapid economic growth projected in the coming two decades.

2. DEVELOPMENT SCENARIO AND SPATIAL DEVELOPMENT STRATEGIES AND PLANS

2.1 Development scenario

S2201 **Conventionally,** the regional development of the Southern Region has focussed on the promotion of primary productive sectors such as agriculture, livestock breeding, and mining. The processing of these primary products to final consumption goods, however, has yet to grow much. Tourism in the Region is biased towards mass beach tourism. Foreign enterprises operating in the Region have merely procured labour forces instead of developing supply chains with local companies. As a result, value added remains low and job opportunities, especially those for graduates of higher education, are limited. There is large seasonal variation in the labour market. Groundwater over-exploitation and serious pollution have spread in the region.

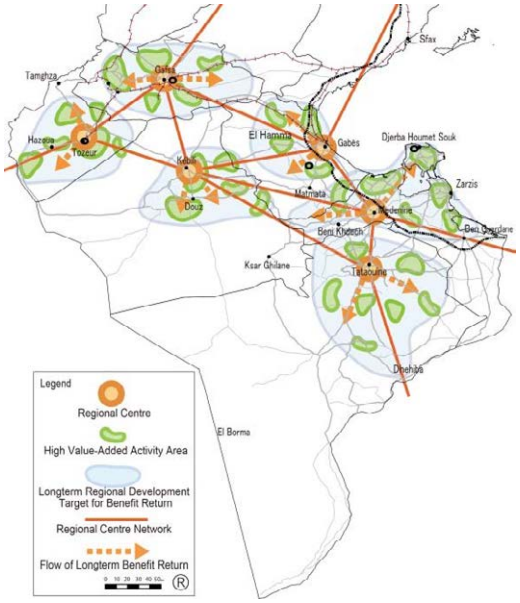
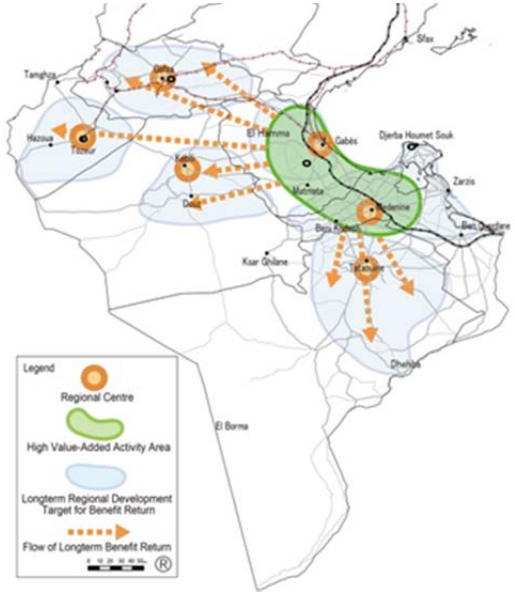
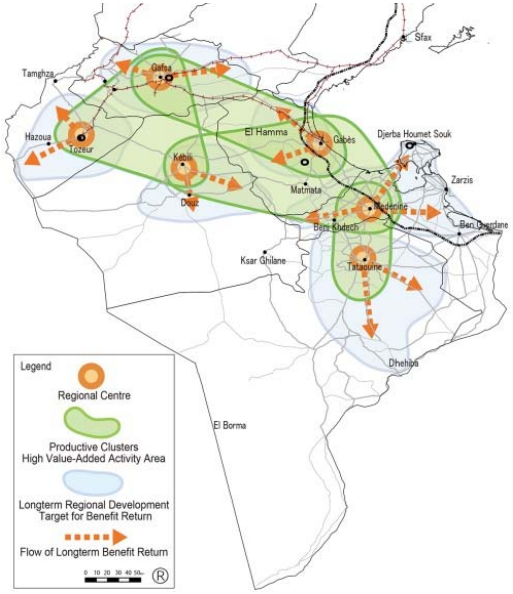
For the future, the **development paradigm** has to change to those as follows to catch up with advanced areas of Tunisia, to reduce disparities among areas within the Region, and to achieve the development vision.

1) Optimal use of limited and prominent resources such as water, mineral, and tourism resources
2) Promotion of processing of local primary products to final products and subsequent export
3) Strict pollution control and dissemination of information on pollution control
4) Tourist destination development and upgraded services
5) Attraction of investment/enterprises and the promotion of local industry involvement in the supply chains of multinational enterprises
6) Establishing a Southern Region brand

S2202 **Alternative regional development scenarios** are set to find the best set of approaches with which to commonly achieve the development goal and vision. The scenarios address the following choices: a) whether regional development should be promoted with *private or public initiative*, and b) whether *population outflow* from less developed areas in search of jobs should be accepted to a certain degree, or whether it should be strictly avoided. Three alternative scenarios are set and compared (see below) with respective approaches for middle- to long-term development to achieve the development goal.

At the early stage of the regional development, the following will be necessary under all three of the alternative scenarios: i) to develop basic infrastructure, such as that to support primary production and that to connect primary production areas with respective regional centres; ii) to strengthen existing research and development (R&D) centres; iii) to prepare for investment/enterprise attraction; iv) to establish/enhance financing institutions in all governorates; and v) to strengthen guidance for management improvement in order to establish a solid base for future development. Under any scenario in the long-term, the productive sectors of the region have to include final processing and export services to realise the development vision. Infrastructure development to reduce transportation costs and to promote exports has to be implemented for exports directly from the Southern Region.

Alternative regional development scenario

Scenario 1: Private initiative/cluster development	Scenario 2: Private initiative/concentrated development	Scenario 3: Public initiative/cluster development
Approach: With ingenuity of local entrepreneurs, productive sector clusters are to form spontaneously. This approach pursues market principle. *Spatial development:* Clusters are to develop evenly over the Region and all areas are developed gradually. *Intervention of public administration:* Public administration should back up the private sector through supports and infrastructure development for entrepreneurs to collect and utilise information regarding technology, demands in international markets, partners, and transport. *Infrastructure development:* Public administration has to develop/expand R&D centres and platforms for information exchanges for every regional centre, to establish/enhance the national and global information and transport networks in the Southern Region, and to develop transportation networks among regional centres.	*Approach:* Through attraction of large-scale private investment, productive sector development is to be concentrated. This approach pursues economy of scale. *Spatial development:* Development is to concentrate initially in the coastal areas for export promotion, and then to gradually extend to the inland areas. *Intervention of public administration:* Public administration has to improve the business environment with incentives and physical infrastructure development in the coastal areas, and then to promote development by supporting productive sectors in the inland areas. *Infrastructure development:* Public administration has to develop major infrastructure (ports, railways, highways, etc.) in the coastal areas at the early stage, and later to extend transportation infrastructure to the inland areas according to the development in the inland areas.	*Approach:* According to the plans formulated with the public initiative, inter-sectoral and inter-governorate integration is to be realised through cluster development. *Spatial development:* Clusters are to develop and gradually expand over the Region. *Intervention of public administration:* Public has to plan, supervise, monitor, and follow-up cluster development, as well as to develop infrastructure, improve the business environment, organise/assist entrepreneur groups, and promote marketing and R&D through public-private-academic collaboration. *Infrastructure development:* Public administration has to develop infrastructure to promote cluster formation and expansion according to features of clusters and to develop transport infrastructure to connect clusters with international gateways.
		

Source: elaborated by the JICA Expert Team

S2203 The economic, social and environmental aspects of the three alternative scenarios are **evaluated**. Positive evaluations are highlighted in orange.

Evaluation of alternative regional development scenarios

Aspects		Scenario 1: Private initiative/ cluster development	Scenario 2: Private initiative/ concentrated development	Scenario 3: public initiative/cluster development
Economic	**Infrastructure development efficiency**	Comparatively low efficiency	Comparatively high efficiency	Comparatively high efficiency
	Reason for the evaluation	Infrastructure has to be developed all over the Southern Region under Scenario 1 to support spontaneous cluster development. The efficiency of the infrastructure development will therefore be low in Scenario 1. The infrastructure development under Scenario 2 will be concentrated because of the condensed cluster development in the coastal areas. The efficiency in infrastructure development will therefore be comparatively high in Scenario 2. Though cluster development is to be located over the Southern Region under Scenario 3, the infrastructure will be developed efficiently as the specifications for infrastructure development can be well coordinated according to the cluster development plans.		
	Economic effects	Slow economic growth at the early stage and gradual development with cluster development; Possible growth after the target period	Fastest economic growth due to concentrated large investment; Possible stagnant growth after the target period	Slow economic growth at the early stage and accelerated development; Possible growth after the target period
	Reason for the evaluation	Under Scenario 1 and Scenario 3, economy of scale will not work and economic growth will be slow at the early stage. In contrast, under Scenario 2, economy of scale will work due to the concentrated cluster development. Economic growth at the early stage will therefore be faster in Scenario 2 than in 1 or 3. Under Scenario 1, economic growth will continue for a long period because various types of industries will emerge, though some industries will fall by the wayside. Possible growth after the target period can be expected under Scenario 3 due to planned cluster development and expansion.		
	Economic risks	Some enterprises to become competitive and others to become unprofitable	Low economic risks Future economic risks	Certain economic effects Possible risks
	Reason of the evaluation	Under Scenario 1, various enterprises will emerge and the some will vanish because of the spontaneous development. There will be lower risks under Scenario 2 due to the comparatively concentrated large-scale enterprises. Besides, there will be risks of resource overexploitation in the future under Scenario 2 due to monotonous large-scale development. Certain economic effects can be expected under Scenario 3, but the risk of miss leading by public administration is anticipated.		
Social	**Employment and population outflow**	Human resource development and job creation take time; Less population outflow and stable communities in the inland areas	Rapid job creation in the coastal areas; Unbalanced job creation and possible population outflow from the inland areas in the early stage	Balanced job creation and less population outflow; and Stable communities even in the inland areas
	Reason for the evaluation	Under Scenario 1, human resource development and job creation will proceed slowly because of the various kinds of development and slow growth at the early stage. Under Scenario 2, population outflow from the inland areas will occur due to rapid job creation in the coastal areas and delayed employment in the inland areas. With the planned and articulated cluster development, balanced job creation, less population outflow, and stable inland communities will be possible under Scenario 3.		
	Involvement of public administration	Difficulties in infrastructure development all over the region will hinder the activation of the productive sectors of all governorates	Difficulties in implementing measures for the extension of economic effects to the inland areas against economic principles	High capability required for planning, managing and leading the regional development
	Reason for the evaluation	Under Scenario 3, public administration will face difficulties in the infrastructure development to be implemented all over the region under budget constraints. Under Scenario 2, public administration will face difficulty in extending the economic development to the inland areas. For the development under Scenario 3, public administration should have sufficient capacity and capability to plan, manage, and lead the regional development.		

Environmental	**Water resources**	Water resource allocation among productive sectors and regions to be carefully planned in the inland areas	Requirement for expansion of desalination plants in the coastal areas. Less problems with water resources in the coastal areas	Possible optimal water resource allocation due to planned and coordinated development
	Reason for the evaluation	To cope with spontaneous and scattered cluster development, careful water resources allocation plan and groundwater abstraction control will be required under Scenario 1. Large-scale desalination plants will be required in the coastal areas under Scenario 2. Fewer problems are expected in Scenario 2, given the accumulated experience with the expansion/construction of desalination plants in the areas. Under Scenario 3, water resources can be allocated optimally according to cluster development plans, or cluster development plans can be formulated considering water resource potentials.		
	Pollution control	Careful pollution control measures to be implemented in all clusters over the region	Expected centralised pollution control measures due to concentrated development; Possible difficulties in the long-term	Careful pollution control measures to be implemented in all clusters throughout the Region; Expected thorough pollution control in the long-term
	Reason for the evaluation	As various types of productive sectors spontaneously scatter over the Region, careful pollution control corresponding to the productive sector development under Scenario 1 will be required in many places. Under Scenario 2, in contrast, the concentrated cluster development will enable more efficient centralised pollution control. In the long-term under the Scenario 2, however, difficulties will arise when the cluster development extends over the region. Under Scenario 3, careful pollution control in all clusters will be required because the clusters may also be distributed over the Region. The pollution control under Scenario 3, however, could become more efficient than that in Scenario 1 through concentration of similar processing factories as well as active involvement by public administration.		

Source: elaborated by the JICA Expert Team

Each of the alternative scenarios can respectively be evaluated as follows based on the above evaluation.

Scenario 1: This scenario enables even productive sector development and job creation over the Southern Region, while efficiency in infrastructure development will be low. Economic development and job creation will take times to appear. Coordination among companies would be difficult for effective water resources allocation and pollution control.

Scenario 2: High value adding can be realised efficiently at earlier stages. Unbalanced job creation and consequent population outflow would occur and good social environment would be difficult to maintain.

Scenario 3: Effective high value adding and regionally balanced job creation can be accelerated as results of planned leads by public administration. Optimal water resources allocation could be possible.

Under Scenario 3, cluster development is planned and implemented through public initiative with a view to avoiding population outflow from less developed inland areas. Balanced productive sector development and job creation are expected to be attained for this approach. Under this scenario, cluster development can be planned and implemented in line with the water resources management plan, and the infrastructure development plans can be formulated and implemented in accordance with the cluster development. As a result of planned development, efficiency in infrastructure development is expected to rise and optimal groundwater use will be enabled. Besides, productive sector development will be slow at the early stage and careful pollution control will be required due to the spreading locations of development areas (clusters). The public initiative development requires capacity development of public administration and may also cause a risk of miss-leading. Plans are in place to avoid this with careful mechanisms for participation of the private sector and civil societies.

cenario 3 is proposed for the development of the Southern Region in order to realise more

balanced, effective, and efficient high value-added to local resources, job creation, and sustainable development over the Region.

S2204 In the P/C meetings of the third round, Scenario 3 (Public initiative/cluster development) has been selected as the development scenario for the Southern Region. Cluster development under Scenario 3 should proceed with close collaboration between the public and private sectors through a participatory approach in which development strategies, plans, and action plans are discussed with the participation of major stakeholders.

S2205 Scenario 3 applies the concept of 'a cluster' as a geographic concentration of interconnected businesses, suppliers, and associated institutions in a particular field. For effective and efficient cluster formation in the Southern Region, where the private sector is weak, intervention of the public administration will be required for the support and activation of private enterprises with long-term strategies for cluster development. The following three principles are set for the cluster development of the Southern Region.

1) Enterprises and relevant institutes related to specific products are planned to *agglomerate* in areas of the Southern Region for adding higher value through collaboration, competition, and synergy effects.
2) With *long-term strategies*, public administration has to be involved in and lead cluster development.
3) Cluster development is to be promoted through *collaboration between the public and private sector with participatory approaches* where strategies, plans, and action plans have to be continuously examined and discussed with the participation of various stakeholders.

These three principles are to be embodied through the establishment of coordination mechanisms for cluster development, i.e., the establishment of cluster development committees and the formulation (officialising) of a cluster development plan for the Southern Region and detailed development plans for respective clusters based on the proposals by the Project and the national strategy for cluster development. As cluster development is new to the Southern Region, it has to proceed gradually with phased development. The progress of each step has to be monitored by the cluster development committees, and the phases can only advance after confirmation of phase completion by the committees.

S2206 **The cluster development plan for the Southern Region** has to be formulated with participation of all major stakeholders under the coordination of MDICI and ODS and in cooperation with relevant ministries.

Cluster committees are be established for the planning, coordination, and monitoring/ evaluation (M/E) of cluster development. The committee members have to meet as often as six times a year. The committees will preferably have some operational functions, such as collective market research, promotion, and branding actions with supports from public organisations in charge of administering the cluster development, in addition to deliberative functions on cluster development.

S2207 **A detailed implementation plan for each cluster to be developed** will have to be formulated by the public administrative body in charge of the productive sector, as described in the same section.

S2208 To realise cluster development effectively and efficiently, **phased development** has to be applied with clear definition of the development as shown in the following table.

The completion of a certain stage and shifting to the next one can be recognised by monitoring the following indices. The value of these indices has to be discussed by the respective cluster committees when they formulate their own details

Preparation - Formation: Formulation of a detailed implementation plan for each cluster decided by the cluster development plan for the whole Southern Region

Formation - Execution: Certain numbers of trainees and partnership/technology agreements, as well as some indices on productivity for the respective clusters

Execution – Expansion: A certain amount of (foreign direct) investment and certain amount of production/sales, as well as certain numbers of nuclei for the respective clusters

Expansion - Development: A certain amount of (foreign direct) investment and certain amount of production/sales, as well as certain numbers of (internationally renowned) certificates and patents for the respective clusters

Before entering the next stage, the respective committees have to evaluate the results of the development and thoroughly review the management structure of the cluster development.

Cluster development policies by development stage

Development stage	Period*	Implementation policy
Preparation stage	2016 – first half of 2018	* Research and development required for cluster formation * Legal, institutional and organisational arrangements as a rigid basis for cluster formation * Formulation of implementation plans by products for cluster formation
Formation stage	second half of 2018 – 2020	* Accumulation of resources (human and technology), encouragement of technology transfer, improvement in training, and improvement of business environment for upgrading the quality of products and increasing the productivity of the productive sectors * Fostering partnership between the public and private sectors
Execution stage	2021 – first half of 2023	* Encouraging investment * Implementation of activities for higher value-added products, such as introducing innovation, product development, etc. * Forming nuclei (agglomeration of enterprises, R&D institutes, academic institute, etc.) of clusters * Implementation of sales promotion and branding
Expansion stage	second half of 2023 – 2025	* Further attraction of investment and enterprises mainly from outside of the region * Further technology development, including peripheral technology * Enhancing nuclei and developing networks among nuclei and with related industries. * Further sales promotion and branding
Development stage	2026 onward	* Establishing high competitiveness in the global market * Self-sustained activities for further innovation and development of new products

Note: * Period may vary depending on the productive sector and product
Source: JICA Expert Team

S2209 Phased development in respective productive sectors is planned as follows.

For agriculture, fishery, livestock breeding and food processing sector, clusters of 'olive/olive oil', 'dates/derivatives', 'livestock/aquaculture and the product processing', '(other) high potential products' and 'multisector (agricultural land) utilisation (product/processing)' are planned (though 'Food processing' constitutes part of most of the clusters, it is described separately to explain the plans and actions simply). The phased development plan of the sector for 2015-2025 has to have the following stages. Generally, the period of each stage is to last two and a half years. At first, feasibility studies for marketing/branding, processing technology, and institutional (laws/regulation and organisation) preparations are planned, as these activities/actions are carried out by companies in the northern or central-eastern parts of Tunisia at present. Secondly, pilot projects are to be implemented on a certain scale. This is to be followed by evaluations of the pilot projects and reviews of the cluster development plans based on the results of the evaluation. The enterprises in the Southern Region have to verify the results of studies on marketing/branding/processing technology and to accumulate experience in final processing and exporting. Afterwards, full-fledged development is planned.

1) Feasibility study & establishment of institutional framework
2) Test run of the pilot cluster
3) Evaluation & review of the pilot cluster
4) Deployment of the cluster

As for mining and other industrial sectors, clusters are planned for 'phosphate', 'construction materials', 'cosmetic products', 'oil and gas', 'textile', and 'renewable energy' sub-sectors. Phased development is to have the following three stages, excluding the 'textile' and 'renewable energy' sub-sectors. Since the manufacturing sector will generally face harsh competition, careful preparations to establish solid bases for the development are recommended. First, institutional (laws/regulations and organisations) arrangements, research on market/resource reserves, etc., preparations for technology introduction, etc. have to be carried out. Second, resources (capital, human, technology) have to be accumulated for the development of strongly competitive large-scale industries. Third, full-fledged promotion/development will continue. The first and second stages will take two and a half years each.

1) Establishment of a basis for sustainable development,
2) Accumulation of resources (capital, human, technology) and networks
3) Promotion (and innovation), Autonomous development through innovation or upgrading of the industry

The 'textile' sub-sector has the following specific stages, as this sub-sector has already developed to a certain degree and strengthened/upgraded design for a higher value added sub-sector is essential for the development of this sub-sector cluster.

1) Establishment of the institutional framework
2) Development of productive capacity and productivity
3) Design and product development
4) Promotion and innovation

Meanwhile, the 'renewable energy' sub-sector has the following different stages by dint of its inherent features:

1) A strengthened regional knowledge base and targeting, and accumulation of human resources

2) Investment in the demonstration and improvement of the business environment and infrastructure for innovation
3) Deployment/activation of clustering for manufacturing and services
4) Advancing private sector-led clustering and synergy creation with a wider array of economic activities

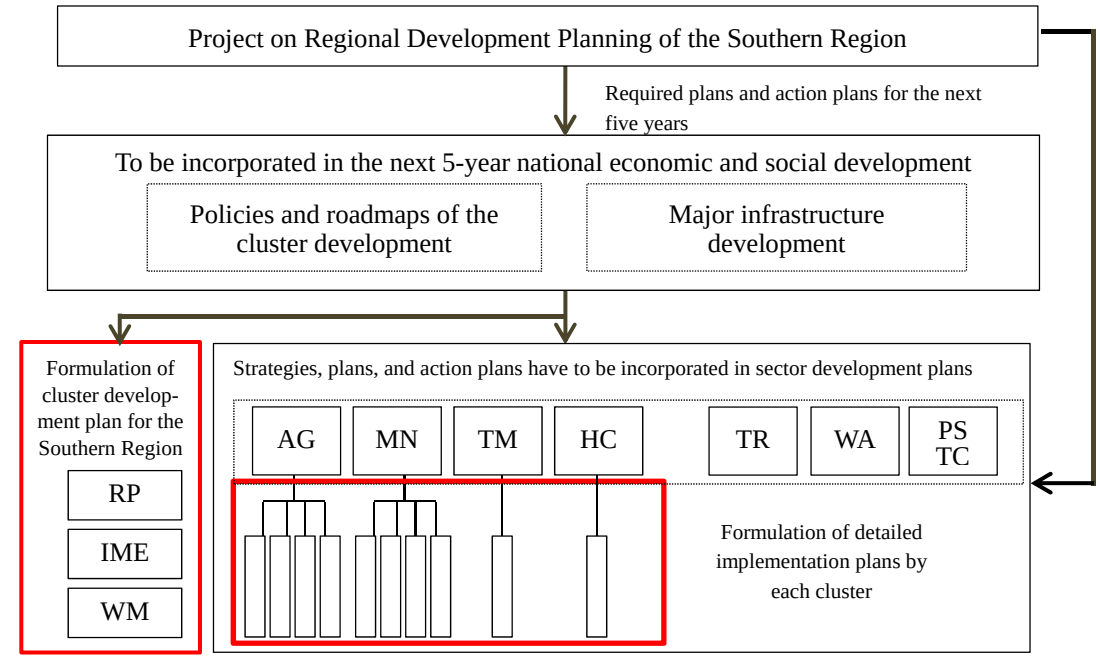
The tourism sector will undergo the following stages for the development of the diversified sector taking advantage of the various resources of the region. Although the contents of this sector are different from mining and other industrial sectors, similar stage development is proposed as a kind of standard procedure. The following stages will enable systematic approaches integrating the various stakeholders of the sector.

1) Establishment of an institutional framework
2) Accumulation of human capital and business incentives
3) Development of tourism products and services
4) Promotion of the Destination

The handicraft sector has the following stages. Though stage development and detailed actions of each stage may vary product by product and region by region, generalised stages are proposed. With the following stages, individual artisans and micro enterprises will be supported to form a competitive sector.

1) Knowledge creation
2) Skill building, know-how transfer, infrastructure
3) Activation of cluster network

S2210 To assure the implementation of plans and action plans proposed by the Project, it will be necessary to incorporate policies and roadmaps for cluster development and the major infrastructure development plans/action plans into the next five-year national economic and social development plan. The strategies, plans, and action plans of each of the productive sectors and infrastructure sectors also have to be included in development plans for the respective sectors.



Source: JICA Expert Team

Flow of the implementation of regional development plan for the Southern Region

S2211 Roadmaps for plans and action plans on regional development administration, productive sectors, and infrastructure development are shown in the overall roadmap on the next page. Concrete cluster development stages by productive sector are proposed in the map table. Staged development by infrastructure/facility type is also charted in the overall map. As support for infrastructure development is important, coordination between the development of the productive sectors and the infrastructure is essential for the proper development of clusters.

Overall roadmap of cluster development in the Southern Region

Roadmap of Southern Region Cluster Development

① Stages of Southern Region Cluster Development

Stages of Southern Region Cluster Development: Preparation | Formation | Execution | Expansion | Development

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026 - 2035
Administrative Activities for Regional Development											
Planning and Implementation of Southern Region Cluster Development Plan	Study & Planning Stage	Implementation Stage			Evaluation and Revision Stage	Study & Planning Stage	Implementation Stage			Evaluation and Revision Stage	Hold Southern Region Development Committee twice a year
Planning and Implementation of each Cluster Development Plan	Study & Planning Stage			Implementation Stage (Agricultural Sector)		Implementation Stage (Other Sectors)					Hold each Cluster Development Committee six times a year

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026 - 2035
Productive Sector Cluster Development Activities for each sector with targeted products											
Agriculture, fishery, livestock breeding and food processing											
Dates	1. Feasibility study & establishment of institutional framework			2. Test run of the pilot cluster(～2025)		3. Evaluation & review of the pilot cluster(～2025)		4. Deployment of the cluster(～2025)			
Olive	1. Feasibility study & establishment of institutional framework			2. Test run of the pilot cluster(～2025)		3. Evaluation & review of the pilot cluster(～2025)		4. Deployment of the cluster(～2025)			
Livestock & Aquaculture	1. Feasibility study & establishment of institutional framework			2. Test run of the pilot cluster(～2025)		3. Evaluation & review of the pilot cluster(～2025)		4. Deployment of the cluster(～2025)			
Food Processing	1. Feasibility study & establishment of institutional framework			2. Test run of the pilot Project(～2025)				3. Deployment of the Project(～2025)			
High Potential Products	1. Feasibility study & establishment of institutional framework			2. Test run of the pilot cluster(～2025)		3. Evaluation & review of the pilot cluster(～2025)		4. Deployment of the cluster(～2025)			
Multi-Sector Utilization	1. Feasibility study & establishment of institutional framework			2. Test run of the pilot Project(～2025)				3. Deployment of the Project(～2025)			
Mining and other industrial											
Phosphate	1 Establish the basis for sustainable development			2. Accumulation of resources (capital, human, scientific) and network(～2025)		3. Autonomous development through innovation(～2025)					
Construction material ※such as limestone, marble and gypsum	1 Establish the basis for sustainable development			2. Accumulation of resources (capital, human, technology) and network(～2025)		3. Promotion and innovation(～2025)					
Cosmetic products	1 Establish the basis for sustainable development			2. Accumulation of resources (capital, human, technology) and network(～2025)		3. Promotion(～2025)					
Oil and gas	1 Establish the basis for sustainable development			2. Accumulation of resources (capital, human, technology)(～2025)		3 Upgrade of the industry by developing metal service for oil and gas facilities(～2025)					
Other potential natural resources ※ceramic, glass, silicate, salt	1 Establish the basis for sustainable development			2. Accumulation of resources (capital, human, technology) and network(～2025)		3. Promotion(～2025)					
Textile	1 Establish the institutional framework			2. Development of productive capacity and productivity(～2025)		3. Design and product development(～2025)		4. Promotion and innovation(～2025)			
Renewable Energy	1. Strengthening regional knowledge base and Targeting, and Accumulation of Human Resources			2. Investment in Demonstration and Improvement of Business Environment and Infrastructure for Innovation(～2023)		3. Deployment/Activation of clustering for manufacturing and services(～2025)		4. Advancing private sector-led clustering and synergy creation with wider array of economic activities(～2025)			
Tourism											
	1. Establishing institutional framework(～2018)			2. Accumulating human capital and business incentives(～2025)		3. Developing tourism products and services(～2025)		4. Promoting the Destination(～2025)			
Handicraft											
	1. Knowledge Creation			2. Skill building, Know-how transfer, Infrastructure(～2025)		3. Activation of Cluster Network(～2025)					

The actions noted below should be also implemented for more effective development to improve economic efficiency during the cluster expansion stage.

✔Improvement of productivity of each company, producer and sector
✔Strengthening of innovative and creative capacity and skills
✔Create, bring-in or establish new projects, production and businesses in relation with the existing industries or potential resources

② Necessary Infrastructure for Southern Region Cluster Development

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026 - 2035
Development of Major Infrastructure (New Development & Improvement (Expansion or Rehabilitation))											
Road Network Development											
Development of National Road Network between cities (including bridges) ※1	Survey, Planning, Designing of new Roads and/or Improvement of existing roads							Start of Services to public in order of completion			
Development of Regional Road Network	Survey, Planning, Designing of new Roads and/or Improvement of existing roads							Start of Services to public in order of completion			
Railway, Airport and Sea Port Development											
Development of Railway Network	Survey, Planning, Designing of new Railway ※2					New Construction					Start of Services to public
Airport Development	Survey, Planning, Designing for facility improvement					Improvement Work		Start of Services to public			
Sea Port Development	Survey, Planning, Designing for new facility and existing port Expansion ※2					New Construction and Expansion Work					Start of Services to public
Water Supply, Power Supply and Telecommunication Network Development											
Development of Desalination Plants		Start of Services to public in order of completion				Start of Services to public in order of completion					
Development of Power Supply and Telecommunication Network						Survey, Planning, Designing	Improvement Work	Start of Services to public in order of completion			
Development of Major Facilities in relation with Productive Sector Cluster Development											
Common Facility Development											
Logistic Centre Development	Survey, Planning, Designing	Improvement Work		Start of Services to public in order of completion		Survey, Planning, Designing	Improvement Work	Start of Services to public in order of completion			Start of Services to public
Facility Development for Agriculture, Fishery and Food Processing Sector Cluster Activities											
Research and Development Centre Development						Survey, Planning, Designing	Improvement Work	Start of Services to public in order of completion			
Industrial Park Development (including FEZ)						※2 Survey, Planning, Designing	New Construction & Improvement Work	Start of Services to public in order of completion			
Facility Development for Mining and Manufacturing Sector Cluster Activities											
Research and Development Centre Development	Survey, Planning, Designing	Improvement Work		Start of Services to public in order of completion							
Industrial Park Development (including FEZ)						※2 Survey, Planning, Designing	New Construction	Start of Services to public in order of completion			

※1 Implement the development of road network based on the progress of on-going construction and operation of national highways in the southern region in order to have efficient connections.

- National Highway (high-speed) between Sfax and Gabes is under construction and is expected for public service opening in several months.
- National Highway (high-speed) between Gabes and Ben Guerdane is expected for public service opening in 2019.
- National Highway (high-speed) between Tunis and Gafsa is under planning and the completion schedule has not been set yet.

※2 The "survey" should include the period of land acquisition and preparation before the development of infrastructure. All necessary laws and regulations for the land use, land acquisition and related administrative actions shall be ready (either adjusted or established newly) before the actual land acquisition for the development should take place.

2.2 Spatial development plan

S2212 The spatial development plan is formulated to visualise geographically i) how productive sector activities and resources for the productive sector development are distributed; ii) how key development is planned for the short-term (five-years), medium-term (ten-years), and long-term(twenty-years) for promoting the respective target productive sectors; iii) how production bases, poles, centres have to evolve; iv) how the inter-sectoral and inter-regional linkage have to be developed; and v) in what direction the infrastructure has to be developed.

S2213 The following **phase development** is proposed towards 2035.

1) Short-term (2015-2020): This period generally corresponds to the 'Preparation stage' and 'Formation stage of the cluster development. At first, research and development (R&D) centres have to be installed in all governorates (if not yet installed) for i) marketing for products, ii) processing techniques, and iii) marketing for investment attraction. Border post facilities are to be strengthened or developed for possible exports to neighbouring countries. Pollution control has to be carried out wherever pollution has occurred. A rigid foundation has to be prepared for effective and efficient development for the 20 years of this period.
2) Medium-term (2021-2025): This term corresponds to the 'Execution stage' and 'Expansion stage' of the cluster development. In this period, high value added products, including touristic products, are to be developed utilising R&D centres. Processing clusters, where collaboration between the private, public, and academic sectors for innovation and product development are to be promoted and developed for major promising products such as construction materials and dates and olives and products made from them, at suitable locations. Final processing is to be gradually shifted from other areas to the Southern Region. Production bases and processing centres are to be developed for vegetables, fruits, meats, fish, and their processed products. Dairy products are also to be developed at suitable locations for delivery mainly to the domestic market and markets of neighbouring countries. Facilities, such as seaports and airports for export to European and global markets are to be upgraded or constructed in step with the anticipated growth of exports and tourist visits.
3) Long-term (2026-2035): This period is generally the same as the 'Development stage' of the cluster development. Higher value added, quality improvement, and new product development are to continue, with further strengthening of local R&D centres in the Region. Infrastructure for exports is to continuously develop according to growth of exports to global markets.

S2214 Spatial development has to be promoted with the following **policies**.

Spatial development policies

Spatial development		Development policy
Aerial development		
	1. Agriculture/fishery sector production /processing area	Production areas for dates, olive, other agricultural, livestock and aquaculture products are to be developed according to the strategies/ plans/action plans of the sector.
	2. Tourist destination management	Tourist destinations are to be developed with collaboration of the private and public sectors using local tourism resources.
	3. Mineral Resource Mining & Processing Area	Mining sites and processing centres are to be developed according to the potentials and strategies/plans/action plans of the sector.
	4. Potential New Resource Mining Area	
Poles development		
	5, Cluster	Collaboration between the public, private and academic sectors for innovation and product development are to be promoted in clusters for exports of major promising final products to the global markets with enhanced access to incentives and supports from public administration
	6. Regional development pole	Large-scale processing centres for high value-added final products for exports are to be developed near ports with logistic facilities to obtain competitiveness with constant large-volume production with good design, quality management, marketing/branding.
	7. Processing centre	Zones for processing are to be developed near agricultural and mining production areas with the required infrastructure, respective R&D centres, and incubation functions. Pollution control facilities have to be installed when necessary.
	8. Border post	For promotion of trade with neighbouring countries, border facilities such as custom and quarantine offices are to be developed using existing facilities. Storage or logistic facilities are to be developed according to the requirements.
Network development		
	9. Transportation Network	Transportation networks composed of road and railway networks are to expand and branch out as important infrastructure.
	10. Information and communication network	Information and communication networks are to be developed to support collaboration and coordination among enterprises and between the private, public, and academic sectors.
	11. Tourism Network	Transportation networks are to be developed to connect coastal tourist sites with inland ones to improve the access and attract tourists to inland sites.

Source: JICA Expert Team

S2215 **Development policies by governorate** for development of production areas and development poles are shown in the below table. In inland governorates, namely, Gafsa, Tozeur, Kébili, and Tataouine, productive sectors are to be promoted with priority by attracting investment/ enterprises and providing incentives and supports, taking full advantage of local the resources and other potentials of the respective governorates. For coastal governorates, large-scale poles near the ports are to be developed for export promotion with final processing (such as packaging) and export or logistic services, to support the development of inland areas of the Region.

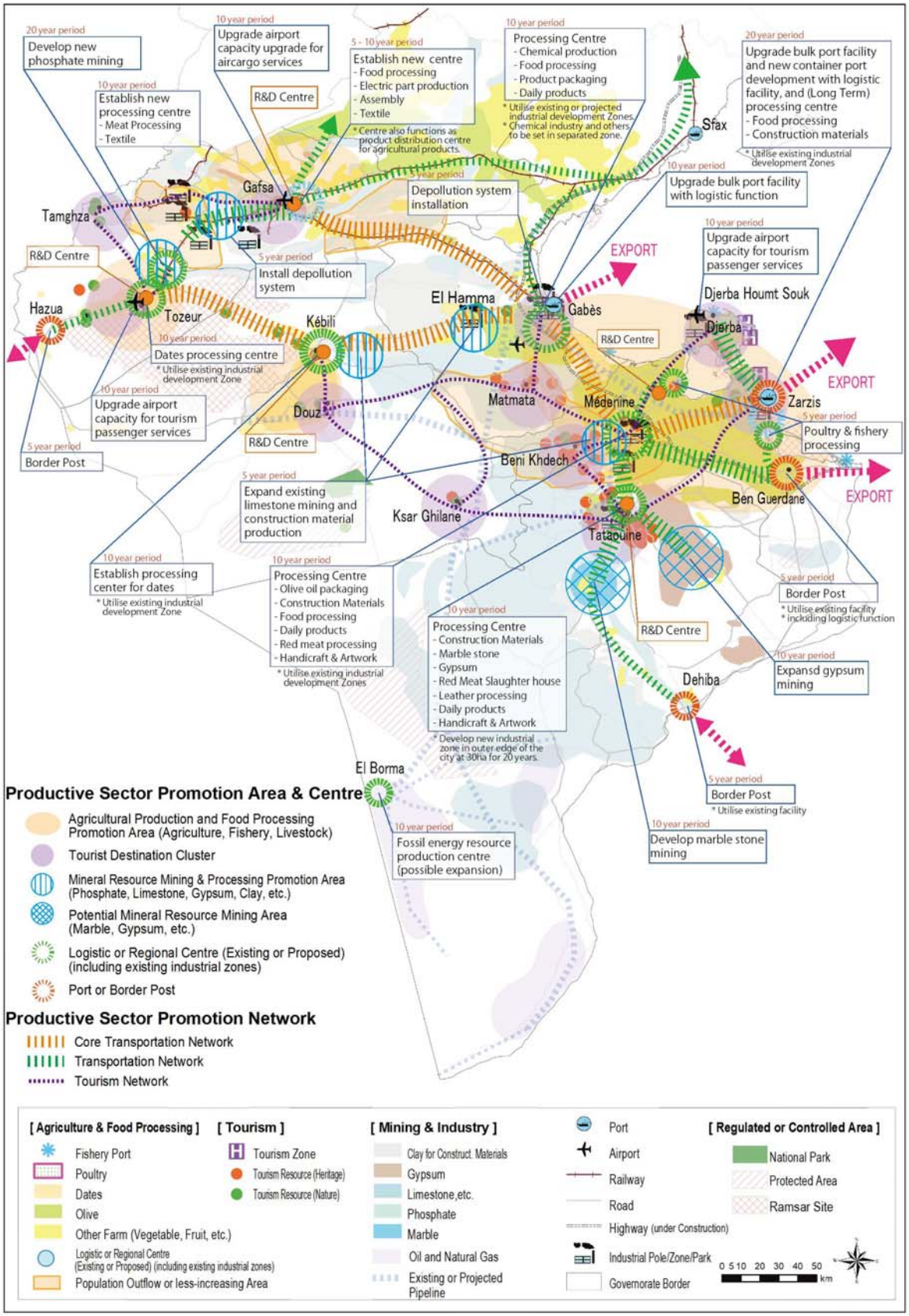
Development policies and roles by governorate

Development policy by governorate	Role of governorate in the regional development
Gafsa The governorate has phosphate mining sites and prominent features of agriculture compared to other governorates in the Southern Region. Phosphate, construction materials, and agro-food processing are to be developed. An agro-food delivery centre is to be constructed near airport, railway station, and highway interchanges. Zone(s) for processing is (are) to be prepared for the attraction of investment/ enterprises.	Phosphate mining areas and processing centres
	Processing centres for new products such as cosmetics, etc.
	Mines and processing centres for construction materials
	Promotion of free trade zones (FTZs) for the textile industry
	Oasis agricultural lands, mainly date production farms
	Processing centres for the poultry industry
	Tourist destinations (Tamghza and Gafsa)
	Power generation plants utilising renewable energy
	Distribution centre for mainly agricultural products transported between northern, central and south Tunisia and Algerian cities west of Tozeur
	R&D centres (agriculture and mineral resources)
Tozeur The governorate has the advantage of oasis agriculture and the potential of Sahara tourism. A processing centre for dates is (are) to be developed for higher value added. Taking advantage of the border with Algeria, exports of agro-food products such as poultry products are to be promoted with border facility development. A new phosphate mine can be developed in the long-term.	Oasis agricultural lands, mainly date production farms
	Greenhouses for vegetable production
	Processing centre for dates
	Processing centre for the poultry industry
	New phosphate mines (considered in long term development)
	Sahara tourist destinations
	Power-generation plants utilising renewable energy
	Border posts (at Hazoua)
	R&D centres (agriculture and tourism)
Kébili The governorate has an advantage of oasis agriculture and potential of Sahara tourism. A processing centre of dates is to develop for higher value adding. Sahara tourist destinations are to develop with promotion of agro-tourism. Processing of mineral products to construction materials and production of off-season vegetable using geothermal resource are other sources of development	Oasis agricultural lands, mainly date farms
	Processing centre for dates
	Mines and processing centres for construction materials, including limestone processing
	Greenhouses for vegetable production
	Sahara tourist destinations (Douz and Ksar Ghilane, etc.)
	Power-generation plants utilising renewable energy
	R&D centres (agriculture and mineral resources)
Gabès The governorate has the advantage of a commercial seaport but also suffers from serious pollution from the chemical industry. A large pole for processing to final products and their exports is to develop, while immediate measures for the pollution control are to be taken. In the long-term, manufacturing is to be further promoted with port facility development as well as promotion.	Regional development pole for chemical industry, food processing (dairy products, red meat processing, and packaging) and logistic functions
	Southern Region international trading port (mainly bulk)
	Mines and processing centres for construction materials, including limestone (El Hamma)
	Greenhouses for vegetable production
	Mediterranean tourist destinations (Gabès)
	Berber tourism destinations (Matmata)
	Power-generation plants utilising renewable energy

Development policy by governorate	Role of governorate in the regional development
Médenine The governorate has the advantages of historical olive production and a commercial port for export promotion. Zarzis port is to expand with container-handling facilities and develop as a major international gateway for exportation of Southern Region products such as quality construction materials from Tataouine. Due to the advantageous location neighbouring Libya, exports to the country are to be promoted using expanded border facilities. Upgraded tourism services are to be promoted.	Regional development pole for food processing (olive products, dairy products, fish products, red meat processing and packaging), construction materials, leather processing, and logistic functions
	International container port with upgraded bulk port (Zarzis)
	Processing centre for the poultry industry (south of Zarzis)
	High quality and value-added processing centre for olive and date products in Zarzis for world market demand in the long term
	Fishery production and processing centre (Djerba and Zarzis)
	Mediterranean tourist destinations (Djerba and Zarzis)
	Berber tourist destinations (Beni Khdeche, etc.)
	R&D centres (agriculture and tourism)
Tataouine The governorate has the advantages of a huge volume of gypsum and quality marble stones. Development and expansion of mining activities and processing to construction materials is to be promoted through enhanced linkage with Médenine. To take advantage of the long border with Libya, the export of agro-food products, construction materials, etc. is also to be promoted. With development of natural gas exploitation, related services are to grow.	Mines (mainly marble stone, limestone, and gypsum) and processing centres for construction materials
	Oasis agricultural lands, mainly date production farms
	Processing centres for dairy products, a slaughterhouse (red meat), cosmetics, and leather products
	Greenhouses for vegetable production
	Berber tourist destinations (Tataouine)
	Facilities for natural gas exploitation
	R&D centres (agriculture and mineral resources)
	Power-generation plants utilising renewable energy

Source: JICA Expert Team

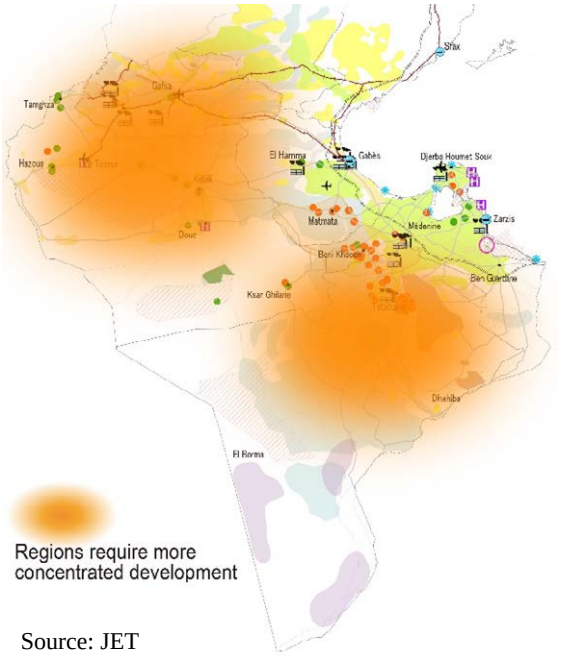
S2216 The **Spatial development plan** for the Southern Region is illustrated on the map on the next page.



Source: JICA Expert Team

Spatial development plan for the Southern Region

S2217 Regional development in the Southern Region should focus on **priority** development in the areas where higher disparity among the region is observed. Productive sector development should therefore be implemented from the western and southern parts of the Southern Region, namely Tozeur, Gafsa, Kébili, and Tataouine. Through implementation of the development strategies and plans, the production chain or value chain is to be shifted within a twenty-year period to the Southern Region managed by the people and entities in the region and localities.

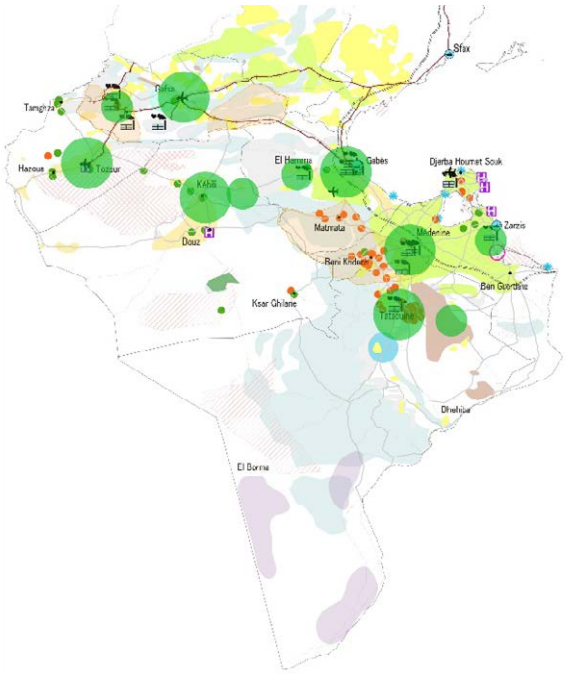


Source: JET

Priority development areas in the Southern Region

S2218 According to the development balance in the Southern Region, each governorate is to develop its own products and productive sector development, including tourism destinations. Most of the agricultural and mining products are to be processed in their own regions for export or delivery to domestic or neighbouring countries' markets by the **medium-term period**.

S2219 After the major shift of product export to the Southern Region, distribution of each product should be centralised to the port of Zarzis, with certain products centralized Gabès. Products for domestic or Libyan/Algerian markets may be transported directly from each processing centre to their destinations. Some high quality and high value-added products in demand in large quantities or volumes in the international markets are also to be concentrated in the special processing centres of the production cluster(s).

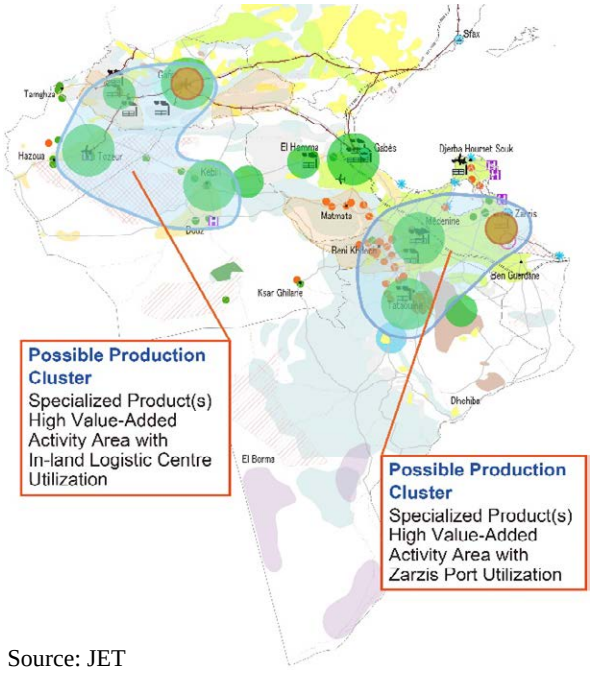


Source: JET

Short- to medium-term development activity distribution in the Southern Region

S2220 Product processing centres are to be established in each governorate during the short- and medium-term period while the export to major markets is still managed in Sfax or northern Tunisia. The flow of most products will therefore move towards the north, especially Sfax, while the processing activities gradually shift from north to south. Trade with Libyan and Algerian markets is to start increasing as border posts in the region are prepared. The figure on the lower left illustrates **product flow during the short-term period** in the Southern Region. The major transportation flow tends to move in the north direction, except some for Libya and Algeria.

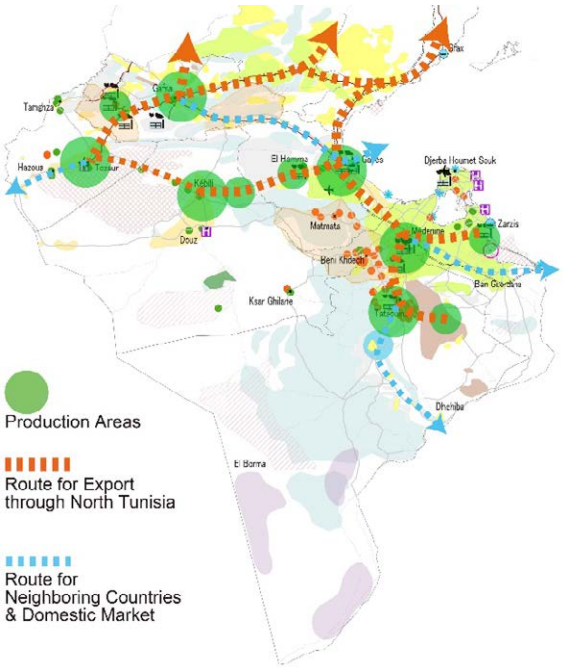
Once the container port of Zarzis is completed for operation in the long-term period, full shift towards the exportation of regional products is to take place. Therefore, high-volume transportation of goods and products from the west region to Gabès and Médenine and from Tataouine to Gabès and Médenine will be taking place for final processing, such as packaging/ packing, and exportation in and from the region. The figure below (right) illustrates the **product flow in the long-term period** in the Southern Region.



Source: JET

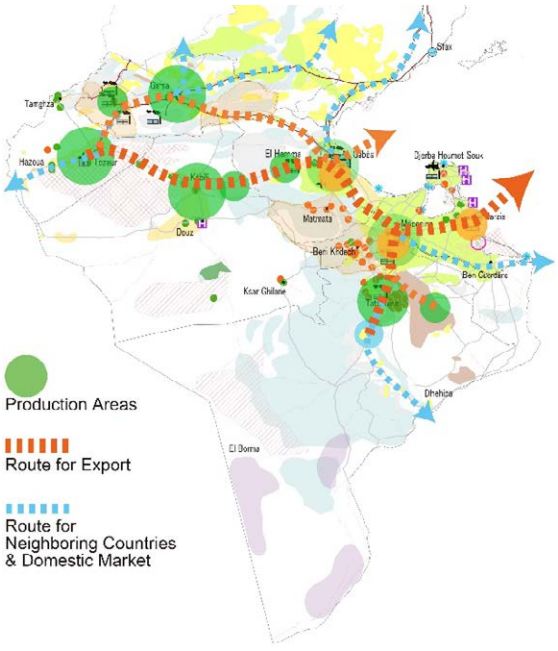
Long-term development activity distribution in the Southern Region

S2221 Product distribution from the Southern Region to the north of Tunisia will become secondary as the Zarzis container port becomes a regional trading port in the long-term period. **Major product distribution activities** for even domestic and Libyan markets is to be handled through product-based clusters, centres, and logistic networks in the region, although major production and processing activities will still be made in each governorate. For the Algerian market, the production cluster of Tozeur and Gafsa with the Kébili **logistic network** may function, as well



Source: JET

Product flow in the short-term period of the Southern Region development



Source: JET

Product flow in long-term period of the Southern Region development

S2222 The cities of Gabès and Médenine should be equipped with production centres with logistic function and facility (Regional development poles). The capacity of Gabès port is planned to be upgraded, and the Zarzis port is to be expand as a new container port with bulk port facility. Ben Guerdane is to be upgraded with larger border control, custom and store service facilities for expanded Libya trading. Export businesses are to be developed in these cities Dehiba, Tataouine and Hazoua, Tozeur are to be developed as secondary border control and service centres where some trading with Algeria and Libya is expected. Existing facilities are to be utilised for upgrade and suitable function.

S2223 The important action considered is to install de-pollution systems to Gabès and Gafsa industrial zones. According to the development of production centres in Gabès and Médenine, there should be large increases of water supply, wastewater treatment, and power supply by gradual development of the economy and society. Due to the decrease in phosphate production expected in Gafsa, Tozeur is to be the next phosphate production centre to maintain supply to the chemical industry under current plans. Upgraded infrastructure, especially transport, will therefore be necessary. Tataouine also expects large development in mineral resource production in the southern part. This will require upgraded infrastructure when these mining sites become operational together with the processing centre in Tataouine.

S2224 Agricultural sector development seeks options for more effective and efficient production of dates, for instance, and the water supply system should have sufficient supply as well as a sufficient distribution network. Greenhouse agricultural production of produce such as tomato and paprika for off-season production and export to European countries is considered a potential activity supportable by geothermal resources, if available. Infrastructure appropriate for this production sector should therefore be properly provided. Other than existing fishery industry, plans call for the development of shrimp, shellfish, and fish farming around the Zarzis and Djerba area, so necessary infrastructure should be prepared for higher quality control with regard to the freshness of products.

S2225 Plans call for an expansion of the textile industry in Gafsa and Tozeur for large job creation, but the locations are far from the coast area. The target industry is seeking high value-added production and processing for higher economic return. Such a business scheme may require air-cargo shipping or fast and constant railway freighter shipping to the port (mainly to container port). Thus, related existing infrastructure should be well planned for upgrade.

S2226 According to the tourism development, there are several new or upgraded roads required. The demand capacity, however, may not be so high compared to freighter transport. Thus, other major road networks may be substituted for the tourism-oriented transportation network. When the development takes place in the western region and the mountain region for earlier job creation in sector activities, infrastructure development should also be concentrated in the same areas of the Southern Region. Airports in Tozeur and Djerba are to be upgraded for better passenger service with some possible cargo shipping in the region. The railway network is to be upgraded and extended mainly for freighter use, but this facility may also be used for tourist attractions.

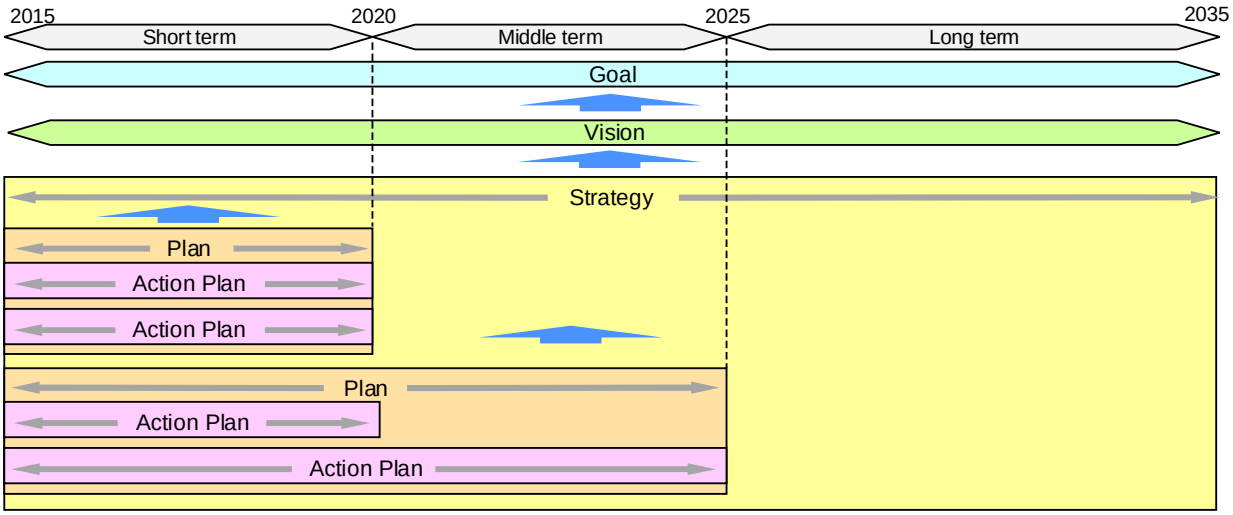
S2227 As for processing centre development, there is not enough land prepared for the industrial zone in Tataouine. The Industrial Land Agency (AFI-Agence Foncière Industrielle) has to start to search and procure land for the purpose of avoiding possible land acquisition problems.

3. DEVELOPMENT STRATEGIES, PLANS AND ACTION PLANS

3.1 Structure, composition and coordination of development strategies, plans and action plans

S2301 Development strategies, plans, and action plans for the Southern Region are defined in S2101. The structure of the strategies, plans, and action plans is illustrated below. Strategies mean measures to be implemented in 20 years (2015-2035), while plans and action plans include activities to be carried out in 10 years (2015-2025). Each strategy generally contains a few or several plans for i) institutional and human capacity development, ii) facility/infrastructure development, and iii) financial/investment. Each plan is composed of a few or several action plans.

Plans define necessary activities to attain the respective strategies and action plans identify concrete actions to realise respective plans and to be taken by respective organisations in charge. Every organisation in charge of implementing an action plan has to examine the action plan when the organisation formulates a detailed implementation plan referring to respective parts of the main report.

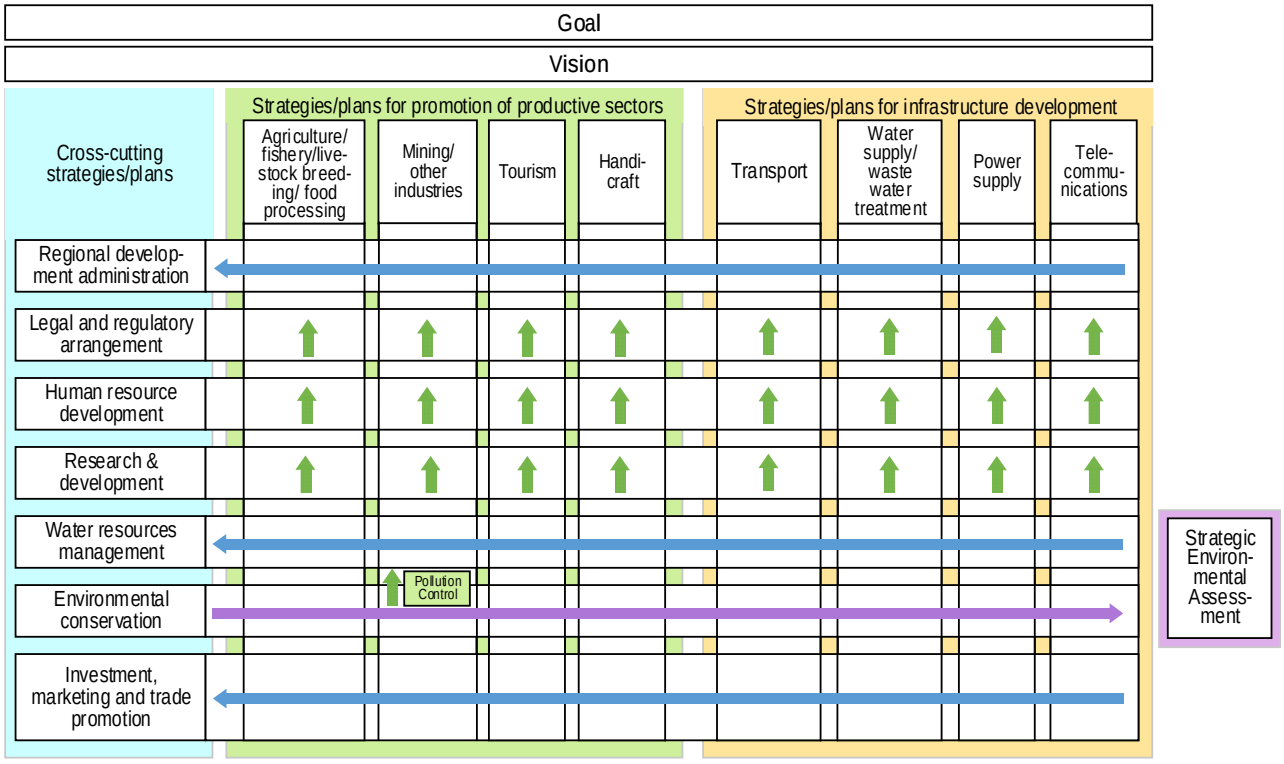


Source: JICA Expert Team

Structure of development strategies, plans, and action plans

S2302 **The composition of the strategies, plans, and action plans** is shown below. Strategies, plans, and action plans are composed of those of i) the productive sectors, ii) infrastructure sectors, and iii) crosscutting issues. Crosscutting issues have been added as viewpoints to discuss matters commonly important for all productive sectors. Strategies/plans/action plans have been formulated for productive sectors, namely, 1) agriculture, fishery, livestock breeding and food-processing, 2) mining and other industrial sectors (including renewable energy), 3) tourism, and 4) handicraft; and for infrastructure sectors, namely, i) transport, ii) water supply/wastewater treatment, iii) power supply, and iv) telecommunications; and for crosscutting issues. Strategies, plans, and action plans for crosscutting issues are those that commonly require specific attentions and care in the promotion of all productive sectors. Crosscutting strategies focus on a) regional development administration, b) legal and regulatory arrangements, c) human resource development, d) research and development, e) water resources management, f) environmental conservation, and g) investment, marketing, and trade promotion. However, only strategies/ plans/action plans of a), e), and g) above are described separately, and those regarding b), c) and d) above are explained in those of the respective productive sectors because the contents are

heavily dependent on the respective sectors. Crosscutting strategies/plans/action plans for f) environmental conservation are described as parts of strategic environmental assessment (SEA), while plans and action plans for pollution control for the chemical (phosphate) industry are formulated by the productive sector of 2) mining, and other industrial sectors.



Source: JICA Expert Team

Composition of development strategies, plans and action plans

S2303 For integrated planning and implementation of the development of Southern Region, various issues have to be clarified. Those issues include, i) the echelon of administrative unit and special divisions, ii) the existence of economic and social development plans and territorial (special) development plans, iii) coordination for planning and implementation, iv) a monitoring and evaluation regime, v) demarcation between the central and local governments, vi) incorporation of public aspirations into regional development plans. The proposal for regional development administration by the Project has been formulated under the conditions mentioned below.

Current issues on **regional development administration**

Issue	
Planning regime	
Spatial divisions	- There are spatial divisions of the 'Southern Region', 'Southeast Region', 'Southwest Region' and 'governorates'. The former three are not administrative units. - Ministries and state agencies have offices only at the governorate level, except ODS for MDICI. - The governorate level is often called as 'regional' in Tunisia. - The government is now examining plans for establishing a new administrative division of 'Southeast/Southwest Regions' or 'Southern Region' with the name of 'district'.

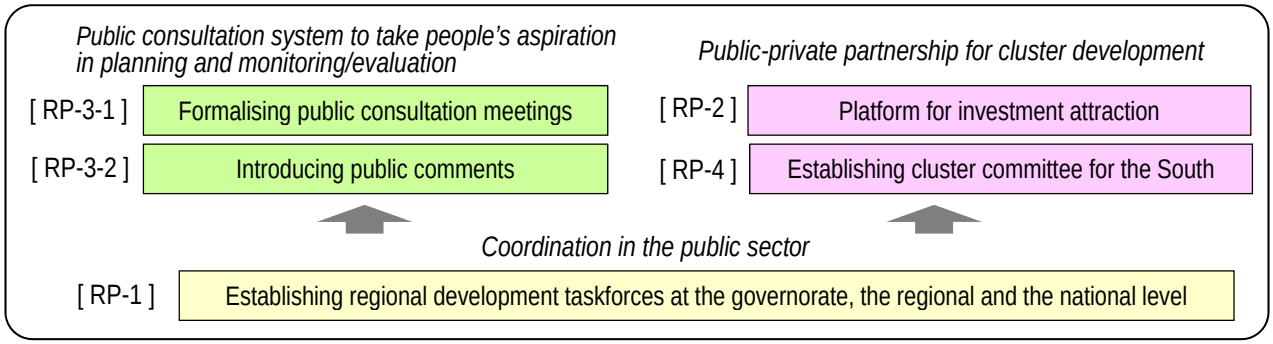
Issue	
Role of economic and social development plans and master plans on territorial development	- Economic and social development plans include those sectors for i) productive, ii) infrastructure, iii) environment (sustainable development), iv) human resource (education, science and technology), and v) social policy (health, culture, sports, women, youth, family, etc.), and are formulated through coordination of MDICI/ODC. - The Ministry of Equipment, Housing and Spatial Planning (MEHAT) has formulated master plans on territorial development for the economic regions of the Southeast and Southwest according to the Code of Territorial and Urban Development Plan (Code de l'Aménagement du Territoire et de l'Urbanisme).
Planning period	- National economic and social development plans (NESDPs) have a target period of five years, while the territorial development master plans have a target period of 15 years. - At the time of preparation of XIth NESDP, the government issued 'Note d'orientation du XI^{ème} Plan et de la décennie 2007-2016', whose target period was ten-years.
Relation between national and regional development plan	- Even before the Revolution, regional development plans (proposals) were prepared in the process of formulation of NESDPs in consultation with local people. - At the conclusion of regional development plans, facility and infrastructure development projects are proposed.
Implementation, monitoring/evaluation	
Implementation of NESDP and regional development plans	- Respective ministries and state agencies implement programmes and projects with the approval of the parliament. - Programmes and projects are implemented through budget allocation every year. - Achievements of the previous NESDP are well described in NESDPs. Only positive (successful) descriptions are found in the plan documents.
Coordination for attraction of investment/ enterprises	- ODS has played an important role for one-stop service to prospective investors and enterprises who are going to invest in the Southern Region.
Monitoring and evaluation regime	- M/E are generally conducted organisation by organisation (a ministry or state agency) and no organisation is explicitly specialised for overall monitoring of regional development plans or NESDPs. - A specialised general directorate for M/E has recently been established in MDICI.
Demarcation between the central government and local governments	- The new administration has a strong policy for decentralisation and deconcentration under the new constitution, which clearly defines the concept of decentralisation. - Even under the movement towards decentralisation, appropriate demarcation between the central and local government does not seem to have been clearly discussed or well concluded.
Public consultation (P/C)	
Separation of planning organisations and P/C organisation	- P/C meetings for the formulation of previous regional development plan proposals were held just to collect the comments and opinions of the participants. - Participants of P/C meetings have not been well informed of the reasons why the proposed programmes/projects are not included in the NESDPs.
Introductions of public comments	- The current public consultation meetings are held only to collect wide range of comments/opinions from the public.

Source: JICA Expert Team

S2304 Four strategies have been proposed for **regional development administration**. For cluster development under Scenario 3 with participatory approaches and public-private partnership, the four strategies have to be implemented as a set.

As RP-1, coordination among public administration organisations for preparation of draft (revised) strategies, plans and action plans as well as monitoring and evaluation reports have to be proposed. RP-2 intends to realise collaborated actions for investment and enterprise attraction, which is the most important elements of the regional development of the South. With RP-3, mechanisms to incorporate public aspiration into regional development planning and implementation are expected to be established. RP-4 will enable effective and efficient cluster development. Although implementation of the strategies of regional development

development. Although implementation of the strategies of regional development administration will cause little direct effect on value-added, job creation or sustainability, it is expected to enhance the effects of other strategies of the productive sector indirectly because established coordination mechanisms support much for effective and efficient implementation of all other development strategies. As can be seen the figure below, regional development taskforces established at the governorate, Southern Region, and national levels (RP-1) form the basis for the coordination mechanisms and smooth implementation of the regional development.



Composition of strategies on regional development administration

Strategies on regional development administration

Code	Strategy	Effect (Direct/Indirect)			Indicator
		Value-added	Job-creation	Sustainability	
RP-1	Establishing coordination mechanisms in planning, implementation, and M/E of regional development	Through enhanced inter-sectoral (such as agriculture – food processing) and inter-governorate (such as governorate of primary products and that of final products) coordination, value-added and job creation in the Southern Region are expected to increase.		* Strengthened collaboration among enterprises will enable efficient pollution control. * Through enhanced inter-sectoral coordination, optimal groundwater allocation will be realised.	- No. of created jobs - No. of illegal wastewater discharge events - No. of groundwater over-exploitation events - Amount of investment, etc., (Figures to be attained by implementation of these strategies only cannot be estimated or monitored)
RP-2	Strengthening collaboration for investment/ enterprise attraction	Through strengthened collaboration among public administration and public-private sectors, attracted investment will increase, which in turn will increase value added and job creation.		* Through increased investment spurred by implementation of the strategy, enterprises will obtain financial resources for pollution control.	
RP-3	Establishing a public consultation system for regional development	With dialogue and trust between public-private sectors encouraged through P/C, public-private partnership will be promoted and value-added and job creation will indirectly increase.		* Through strict monitoring by public consultation participants, enterprises will be encouraged to control pollution.	
RP-4	Establishing coordination mechanisms for cluster development	Through enhanced coordination for cluster development, value-added and job creation in the Southern Region are expected to increase.		* Planned concentration and enhanced coordination among enterprises will enable efficient pollution control. * Through enhanced coordination among farmers and enterprises, optimal groundwater allocation will be realised.	

Source: JICA Expert Team

S2305 The following lists plans, i.e., necessary activities to attain strategy implementation and to be carried out in the medium term, together with a breakdown of the actions to be taken under the plans. Actions generally have to be taken one by one, starting from the top. For establishing coordination mechanisms, careful discussions in the early stages will essential for successful establishment. For implementation, coordination in annual budget preparation among all related organisations will be the most important element.

As RP-1 is the basis for the coordination of the development planning, implementation, monitoring, and evaluation, MDICI and ODS have to prepare to implement the actions listed under the Plans of RP-1-1 and RP-1-2 immediately. Before organising the regional development taskforces at the governorate, regional, and national levels, MDICI and ODS have to discuss the regime/framework for regional development and the planning, implementation, monitoring, and evaluation with the Ministry of Interior (MI), Ministry of Finance (MF), and other relevant ministries with draft proposals prepared by the Project. It would be better to officialise/legalise the coordination mechanism so that the relevant ministries and agencies would be required to follow the mechanisms. With this approach, there would be no need to shift the power and duties of the other ministries and agencies for planning and implementing the sector jobs. We propose that the functions/duties of MDICI and ODS for the coordination for regional development planning, implementation, monitoring, and evaluation be clearly defined, as MDICI and ODS would be the best organisations for the coordination in light of their long experience in coordinating preparations for national economic and social development plans and regional development plans as components of national development plans.

Plans and action plans for Strategy RP-1

Strategy	**RP-1**	**Establishing coordination mechanisms in planning, implementation and monitoring/evaluation of regional development**			
Plan		**Actions**	**Term**	**Cost**	**Relevant Organisations**
RP-1-1: Defining a coordinated planning regime		− Defining coverage/contents of regional development plans − Defining coordination mechanisms for planning among sectors and between national and regional level − Organising planning taskforces − Review of development strategies, plans, and action plans for the Southern Region	Short - Medium	DT. 315 thousand (DT. 105 thousand for meetings and DT. 210 thousand for diagnostic study)	− MDICI − ODS − MEHAT* − MI** − MF*** − Regional and Local Councils − Related sector ministries and agencies − Related sector ministries and agencies
RP-1-2: Coordination for implementation and M/E		− Defining an budget allocation adjustment mechanism − Defining a coordination mechanism for monitoring − Defining a coordination mechanism for evaluation − Conducting M/E regularly	Short - Medium	DT. 21 thousand/ year for meetings	− MF*** − MDICI − ODS − MI** − Regional and Local Councils

Strategy	RP-1	Establishing coordination mechanisms in planning, implementation and monitoring/evaluation of regional development		
Plan	**Actions**	**Term**	**Cost**	**Relevant Organisations**
RP-1-3: Capacity development for MDICI and ODS	− Capacity development for facilitating the overall joint M/E for national and regional development plans − Capacity development for facilitating comprehensive improvement in attracting investors and enterprises − Capacity development for public consultation and public comments	Short - Medium	DT. 3,400 thousand*	− MDICI − ODS − FIPA − APII, APIA − Regional and Local Councils − Related public administration organisations

Note: * Technical Assistance for M/E: DT. 1,250 thousand (Consultant fee; DT. 700 thousand, Travel cost; DT. 400 thousand, Operating cost: DT. 150 thousand) and
Technical Assistance for attraction of investors/enterprises: DT. 2,150 (Consultant fee; DT. 1,050 thousand, Travel cost; DT. 600 thousand, Operating cost; DT. 500 thousand)
* MEHAT: Ministry of Equipment, Housing and Spatial Planning, * * MI: Ministry of Interior,
*** MF: Ministry of Finance

Source: JICA Expert Team

The strong initiative of ODS with close support from MDICI is crucially important for strengthened collaboration for investment/enterprise attraction.

Plans and action plans for Strategy RP-2

Strategy	RP-2	Strengthening collaboration for investment/enterprise attraction		
Plan	**Actions**	**Term**	**Cost**	**Relevant Organisations**
RP-2-1: Enhancing a platform for investment attraction to the Southern Region	− Examining membership, activities and other elements of the platform − Organising the platform − Implementing the activities of the platform	Short - Medium	---	− ODS − APII, APIA − MDICI − Other key members
RP-2-2: − Enhancing connection with the central and foreign organisations	− Developing channels with central and foreign organisations − Promoting activities through the channels	Short - Medium	---	− MDICI/ODS − FIPA and other agencies and ministries − Foreign delegations in Tunisia − Economic organisations (UTICA, Chamber of Commerce and Industry, etc.) in other regions

Source: JICA Expert Team

Formalisation of the system applied in the Project would work well for the establishment of the public consultation mechanism. For the introduction of public comments, ODS can refer to the similar system applied in Tunisia for urban planning or to examples from other countries such as those applied in Hokkaido, Japan.

Plans and action plans for Strategy RP-3

Strategy	**RP-3**	**Establishing a public consultation system for regional development**			
Plan		**Actions**	**Term**	**Cost**	**Relevant Organisations**
RP-3-1: Review of the public consultation regime		− Reviewing the public consultation regime in the Project − Re-defining the public consultation regime − Organising public consultation of the six Governorates and the Southern Region − Preparing a manual for the management of public consultation	Short - Medium	---	− ODS − Members of the existing public consultation − Organisations of candidate/ nominated members of the public consultation
RP-3-2: Introducing public comments		− Defining the public comment regime − Implementation of public comments	Short - Medium	---	− ODS, with assistance Municipal and Regional Councils − Members of the regional taskforces

Source: JICA Expert Team

RP-4 is essential for the cluster development under Scenario 3. For implementation of RP-4-1 and PR-4-2, ODS/MDICI have to take initiatives, while for RP-4-3 and PR-4-4, MDICI/ODS have to ask public entities specialised in respective products of the clusters, including national agencies and research institutes, to take the responsibility for the cluster development.

Plans for Strategy RP-4

Strategy	**RP-4**	**Establishing coordination mechanisms for cluster development**			
Plan		**Actions**	**Term**	**Cost**	**Relevant Organisations**
RP-4-1: Formulation of a cluster development plan for the Southern Region		− Conducting research on cluster development − Identifying products for cluster formation − Identifying the locations of clusters − Planning on business environment improvement − Planning on infrastructure development programmes/projects	Short	---	− MDICI, ODS − National and regional development taskforce for the Southern Region − Members of P/C − Regional and Local Councils − Related sector ministries and agencies
RP-4-2: Establishing cluster committees for respective identified products		− Defining the membership (economic organisations, public administration, academic entities, civil societies, etc.) and functions of the committees − Defining the rules of the committees − Organising the committees − Formulating the annual operation plans of the committees	Short	---	− MDICI, ODS − National and regional development taskforce for the Southern Region − Members of P/C − Regional and Local Councils − Related sector ministries and agencies
RP-4-3: Formulation of an implementation plan for each cluster development		− Conducting research on each cluster development − Product improvement plans − Investment/enterprise attraction plans − Marketing/branding plans − Business environment improvement plans − Infrastructure and facility plans	Short	---	− Public entities in charge of the productive sector − Members of the cluster committee

Strategy	**RP-4**	**Establishing coordination mechanisms for cluster development**			
Plan		**Actions**	**Term**	**Cost**	**Relevant Organisations**
RP-4-4: Coordination for implementation and M/E		− Requesting budget allocation for cluster development as well as for the operation of the committee through the regional development taskforce − Implementing the operation plan − Conducting M/E regularly − Feed-back of M/E results to subsequent operation and the next operation plan	Short - Medium	---	− Public entities in charge of the productive sector − Members of the cluster committees − Regional development taskforce for the Southern Region

Source: JICA Expert Team

3.2 Development strategies, plans and action plans of the productive sectors

S2306 Development strategies, plans, and action plans for the respective sectors are formulated based on the results of the diamond analysis and on the major constraints and potentials/competitiveness identified for the promotion of the production sectors and investment/marketing/export and infrastructure development.

S2307 Key features of the strategies of the productive sectors are summarized below. Strategies of the productive sectors are formulated pursuing high value-added and job creation utilising prominent resources and potentials to obtain strong competitiveness in the international markets.

Key features of the strategies of the productive sectors

Sector	Key feature
Agriculture, fishery, livestock breeding and food processing sector	Promote high value-added production of potential products while effectively utilising limited water resources to enable the delivery of “made in the south” products to both international and domestic markets with international levels of quality.
Mining, other industry sectors and renewable energy sectors	Upgrade production to higher value-added activities by utilising local resources and enhancing institutional networks, while keeping an eye on environmental problems
Tourism sector	Establish sustainable tourism through the creation of destinations by increasing the value of the historical, cultural and natural tourism resources specific to the Southern Region with the participation of local people
Handicraft sector	Make the Southern Region handicraft industry more sophisticated and enrich the industry as a source of cultural and traditional value for the region.

Source: JICA Expert Team

S2308 The strategies of agriculture, fishery, livestock breeding, and food processing sector and their effects on the achievement of the development vision are shown in the following table. Five **Strategies** formulated for agriculture, fishery, livestock breeding, and food-processing sector are proposed. AG-1 and AG-2 target higher value added for prominent agricultural products of the region, i.e., dates and olives. AG-3 is added after requests in P/C meetings in consideration of the potentially huge areas for the development of grazing land and aquaculture farms and prominent species of livestock. A-4 aims for the continuous development of new agricultural products. AG-5 targets food processing development in coordination with plans AG-1 – AG-4. AG-6 has the proposed objective of higher value added through enhanced linkage with tourism and handicraft sectors.

Strategies of agriculture, fishery, livestock breeding and food processing sector

Code	Strategy	Effect (Direct / Indirect)			Indicator
		Value-added	Job creation	Sustainability	
AG-1	Maximization of added value productivity of dates under the condition of rare water resource	・ Increase of profit through saving cost, increasing productivity, and selling products at higher prices.	・ Creation of jobs for producers of specified products	・ Achieving sustainable and effective use of rare local resources such as water and organic substances	・ Percentage of the installation of water-saving irrigation systems ・ Yield of dates per unit water ・ Percentage of export price increase ・ Percentage of cost decrease ・ Implementation ratio of training courses
AG-2	Increasing value added of olive oil by brand establishment and quality improvement	・ Increased profit through saving cost of chemical fertilizer and agricultural chemicals, and enhancing brand value	・ Creation of jobs for producers of specified products		・ Percentage of bottled olive oil ・ Value added of olive oil ・ Percentage of oil mills operated under recommended quality control and logistics systems for agricultural products ・ Percentage of products meeting international certificates ・ Implementation ratio of training courses
AG-3	Increasing value added of livestock breeding/aquaculture products by maximizing added value productivity of animal feed, quality improvement, and promotion of collective activities	・ Increased profit through saving cost, increasing productivity, and selling products at higher price.	・ Creation of jobs for producers of specified products	・ Achieving sustainable and effective use of rare local resources such as organic substances	・ The percentage of compound feed made of local organic substances and corresponding to the development stages of livestock ・ The number of processing/storage bases ・ The number of breeders' groups ・ Percentage of breeders who have installed new technology, equipment, and systems
AG-4	Promotion of other promising products, technology, and organizations for efficient and sustainable agriculture	・ Increased production and sales through commercialization of promising products	・ Creation of new jobs related to introduced products, technology, and organizations	・ Economizing energy and resources consumed in food processing activity	・ Number of pilot projects of promising products ・ Implementation ratio of diffusion seminar for the installation of recommended agricultural technology ・ Percentage of farmers' groups playing multiple roles
AG-5	Establishment of bases for food processing and circulated use of local organic substances	・ Increased profit through saving cost, increasing productivity, and selling products at higher price.	・ Creation of new jobs related to food processing and supporting industry ・ Improvement of the situation of seasonal employment	・ Achieving sustainable use of local organic substances	・ Basic infrastructure development of all of the target industrial zones ・ The number of factories newly established related to food processing ・ Local development plan for each industrial zone and area adjacent
AG-6	Promotion of multifunctional use of oasis and other agricultural and pastoral area	・ Increased production volume and water efficiency of oasis agriculture	・ Creation of new jobs related to the service provided in oases and other agricultural areas	・ Achieving sustainable management of oases and agricultural areas	・ Percentage of oases in which irrigation systems are renewed ・ Area of pasture land covered by the development program ・ Development of production and processing bases for red meat and raw material for handicrafts

Source: JICA Expert Team

S2309 Coverage , actors and cost of each plan are listed in the following table. Other than for AG-2 generally and specifically for AG-4 and AG-6, more intensive implementation of strategies/plans/action plans is planned in inland areas (Southwest region and Tataouine to create more jobs there.

Coverage of strategies and plans by governorate / Actors of strategies and plans (Agriculture, fishery, livestock breeding and food processing sector)

Sector	Code	Strategy	Plan	Target Governorate						Actor	Cost (Million DT)
				Méd.	Tata.	Gab.	Gaf.	Kéb.	Toz.		
Agriculture / Fishery/ Livestock breeding/ Food processing: AG	AG-1	Maximization of added value productivity of dates under the condition of rare water resource	AG-1-1: Increasing physical productivity of water for dates		●	●	●	●	●	MARHP, CRDA, AVFA, CFPA, URAP, APIA, financial institutions (BNA, BFPME, etc.), GI fruits, local research institutes (IRA, Technical Centre Dates of Kébili, Regional Agriculture Research Centre of Oasis at Degueche, etc.), GDA, farmers' groups, etc.	DT 32,000/ ha
			AG-1-2: Increasing value of dates		●	●	●	●	●	MARHP, MIEM, CRDA, AVFA, CFPA, UTICA, URAP, APIA, IRA, financial institutions (BNA, BFPME, etc.), private companies, farmers' groups, local research institutes (IRA, Technical Centre Dates of Kébili, Regional Agriculture Research Centre of Oasis at Degueche, etc.), local NGOs, etc.	-
			AG-1-3: Decreasing production cost		●	●	●	●	●	MARHP, CRDA, URAP, GDA, APIA, financial institutions (BNA, BFPME, etc.), farmers' groups, etc.	-
			AG-1-4: Provision of further financial and material support to farmers in proportion to physical productivity of water for dates		●	●	●	●	●	CRDA, URAP, GDA, APIA, financial institutions (BNA, BFPME, etc.), private companies, financial institutions (BNA, BFPME, etc.), farmers' groups, etc.	-
			AG-1-5: Capacity building of farmers and farmers' groups		●	●	●	●	●	MARHP, CRDA, AVFA, CFPA, URAP, GDA, local research institutes, international donors, farmers' groups, etc.	-
	AG-2	Increasing value added of olive oil by brand establishment and quality improvement	AG-2-1: Enhancement of brand value of olive oil	●	●	●	●			MIEM, MF, Olive Oil Promotion Program (MARHP and MF), CEPEX, ODS, APII, local research institutes (Olive Institute, etc.), CEPEX, ODS, APII, local research institutes (Olive Institute, etc.), private companies, international donors, etc.	-
			AG-2-2: Improvement of the quality of olive oil and stability of olive oil production	●	●	●	●			MARHP, CRDA, MF, MIEM, AVFA, CFPA, URAP, financial institutions (BNA, BFPME, etc.), APII, APIA, local research institutes, private companies, farmers' groups, etc.	-
			AG-2-3: Enhancement of bottled olive oil sales and second pressing oil product	●	●	●	●			CRDA, MIEM, CEPEX, AVFA, URAP, UTICA, APIA, local research institutes, private companies, farmers' groups, etc.	-
			AG-2-4: Capacity building of farmers and farmers' groups	●	●	●	●			MARHP, CRDA, AVFA, CFPA, URAP, local research institutes, farmers' groups, international donors, etc.	-
	AG-3	Increasing value added of livestock breeding/aquaculture products by maximizing added value productivity of animal feed, quality improvement, and promotion of collective activities	AG-3-1: Increasing productivity of animal feed	●	●	●	●	●	●	OEP, Ministry of Transport, CRDA, URAP, APIA, GDA, local research institutes, farmers' groups, etc.	-
			AG-3-2: Increasing the quality and value of livestock /aquaculture products	●	●	●	●	●	●	CRDA, OEP, APIA, Financial institutions (BNA, BFPME, etc.), local research institutes, private companies, breeders' groups, etc.	-
			AG-3-3: Promotion of collective activity and capacity development of livestock breeders/aquaculture farmers	●	●	●	●	●	●	MARHP, CRDA, OEP, AVFA, URAP, APIA, financial institutions (BNA, BFPME, etc.), breeders' groups, local research institutes, international donors, etc.	-

Sector	Code	Strategy	Plan	Target Governorate						Actor	Cost (Million DT)
				Méd.	Tata.	Gab.	Gaf.	Kéb.	Toz.		
Agriculture/ Fishery/ Livestock breeding/ Food processing : AG	AG-4	Promotion of other promising products, technology, and organizations for efficient and sustainable agriculture	AG-4-1: Introduction and promotion of promising products	●	●	●	●	●	●	CRDA, MEDD, AVFA, OEP, URAP, APIA, financial institutions (BNA, BFPME, etc.), GI Fruits, GI Peche, local research institutes (IRA, Technical Centre for Protected Crops and Geothermal of Gabès, etc.) farmers' groups (cooperatives, mutual companies, etc.), international donors, etc.	-
			AG-4-2: Introduction and promotion of innovative agricultural technology	●	●	●	●	●	●	AVFA, CFPA, URAP, APIA, financial institutions (BNA, BFPME, etc.), GDA, farmers'/fishermen's groups, local research institutes, international donors	-
			AG-4-3: Promotion of the establishment and enhancement of farmers' groups (cooperatives, mutual companies, professional groups, etc.)	●	●	●	●	●	●	MARHP, CRDA, URAP, APIA, financial institutions (BNA, BFPME, etc.), GDA, farmers' groups, local research institutes, international donors, etc.	-
	AG-5	Establishment of bases for food processing and circulated use of local organic substances	AG-5-1: Activation of existing industrial zone	●	●	●	●	●	●	MIEM, MEHAT, regional development task force, ODS, APII, financial institutions (BNA, BFPME, etc.), private companies, farmers' groups, international donors, etc.	-
			AG-5-2: Reinforcement of the linkage among local farmers, food processing factories and supporting industries	●	●	●	●	●	●	MIEM, ODS, regional development task force, private companies, farmers' groups, international donors, etc.	-
			AG-5-3: Promotion of circulated use of local organic substances in and around the bases	●	●	●	●	●	●	MIEM, MEHAT, CRDA, URAP, GDA, local research institutes, farmers' groups, private companies, local NGOs, international donors, etc.	DT 0.1 million/ base
	AG-6	Promotion of multifunctional use of oasis and other agricultural and pastoral area	AG-6-1: Promotion of multifunctional use of existing oases			●	●	●	●	CRDA, URAP, APIA, financial institutions (BNA, BFPME, etc.), GDA, farmers' groups, local NGOs, international donors, etc.	-
			AG-6-2: Further development and sustainable management of pastureland in cooperation with livestock breeding, food processing, and handicraft	●	●			●	●	MIEM, OEP, MTA, ODS, OEP, APII, APIA, etc.	-

Source: JICA Expert Team

S2310 Strategies of **mining and other industrial sectors** and their effects on the achievement of development vision are shown in the following table. Five strategies are formulated for the promotion of mining and other industrial sectors. Strategies MN-1 and MN-2 set out to take advantage of rich mineral resources of the Southern Region. MN-1 aims to develop phosphate-related industries based on the existing agglomeration and prospective production of purified phosphate acid. MN-2 aims at the development mining of abundant mineral resources, so-called 'useful substances', such as gypsum, limestone, and marble stone, as well as salts and clay. MN-3 has the objectives of sustainable development, promotion of recycling, and pollution control. MN-4 targets higher value-added manufacturing in the textile industry, where OEM production using cheap labour forces of the region is prevalent. MN-5 aims to develop the renewable energy sector by fostering/building a manufacturing base for solar water heating systems and photovoltaic module components and developing power generation, transmission, and distribution services.

Strategies of mining, other industrial sectors

Sector	Code	Strategy	Effect (Direct / Indirect)			Indicator
			Value-added	Job creation	Sustainability	
Chemical sector	MN-1	Upgrade phosphate processing activities and promote the agglomeration of phosphate-related industries	Creation of new firms and new products	Increased employment for new projects and firms, especially for highly skilled workers.		The number of firms in the sector will be increased by 70 by 2025 The number of employees in the sector will be increased by 1,000 by 2025.
Mining, construction materials, and chemical	MN-2	Promote higher value-added production activities that utilize abundant mineral resources	Increased mineral production. Increased high valued construction materials and cosmetic products	Increased employment in these sectors		The number of firms in mining and related industries (such as construction materials and cosmetics) will be increased by 30 by 2025. The number of employees in these sectors will be increased by 1200 by 2025.
Chemical and other manufac-turing	MN-3	Establish sustainable manufacturing activities by developing recycling and promoting environmentally friendly techniques	Increased production of recycled products.	Increased employment in the recycling sector	Decreased waste and improved scenery. Decreased spillage of waste, which will improve the situation for the fishing sector in this area. Decreased emissions of pollutants, which will improve the living conditions in this area.	The amount of spillage of waste will be decreased by 20%. The amount of spillage of pollutants will be decreased by 20%. The ratio of recycling of plastics will be increased by 50%

Sector	Code	Strategy	Effect (Direct / Indirect)			Indicator
			Value-added	Job creation	Sustainability	
Textile sector	MN-4	Upgrade production activities and extend the product ranges in the textile industry	Increased production and value-added in the sector	Increased employment in the mining sector		The number of firms in the textile sector will be increased by 30 by 2025. The number of employees in the sector will be increased by 1000 by 2025. More than 2 textile firms in the South will engage in design and product development activities by 2025.
Renewable energy sector	MN-5	Foster a manufacturing base and service for the solar energy industry in the Southern Region	Creation of new firms and technology transfer	Increased employment.	Sustainable energy management	The number of newly established businesses and employment Business growth in this field

Source: JICA Expert Team

S2311 The coverage, actors, and cost of each plan are given in the following table. While main target areas of the plans under MN-1 and MN-3 are to be concentrated in Gabès and Gafsa Governorates, inland areas will be target areas for MN-2, MN-4, and MN-5.

Coverage of strategies and plans by governorate / Actors of strategies and plans (Mining, other industrial sectors)

Sector	Code	Strategy	Plan	Target Governorate						Actor	Cost (Million TND)
				Méd.	Tata.	Gab.	Gaf.	Kéb.	Toz.		
Mining/ Manufac-turing: MN	MN-1	Upgrade phosphate processing activities and promotion of agglomeration of phosphate-related industries	MN-1-1: Promote the establishment of new firms that use purified phosphate acid (GCT will implement production in the near future)	●		●	●		●	APII, ODS, UTICA, Techno-pole, GCT, CPG, University of Gabès, BFPME, MIEM, MEDD, MFPE, technical centres, etc.	-
			MN-1-2: Promote inter- and intra-sectoral knowledge spillover and linkages in order to enhance new business opportunities and investment in the applied areas of phosphate acid	●		●	●			APII, ODS, UTICA, Techno-pole, GCT, CPG, University of Gabès, BFPME, MIEM, MEDD, MFPE, technical centres, etc.	-
			MN-1-3: Enhance R&D and innovation for the sustainable development of this sector	●		●	●			APII, ODS, UTICA, Techno-pole, GCT, CPG, University of Gabès, BFPME, MIEM, MEDD, MEEP, technical centres, etc.	-
	MN-2	Promote higher value-added production activities that utilize abundant mineral resources	MN-2-1: Conduct comprehensive studies on potential minerals resources for their sustainable utilization	●	●	●	●	●	●	APII, ONM, MEDD, etc.	-
			MN-2-2: Develop the production capacity of natural resource processing industries	●	●	●	●	●	●	MEEP, technical centres, APII, Techno-pole, MIEM, ODS, MEDD, UTICA, CEPEX, Techno-pole, etc.	-
			MN-2-3: Promote the production of cosmetic products made from products such as salt, clay, and olive oil	●	●	●	●		●	MFPE, technical centres, ODS. BFPME, APII, CEPEX,	-
			MN-2-4: Promote industries related to gas pipelines and LPG bottling plants	●	●	●				MFPE, MIEM, APII,	-
	MN-3	Establish sustainable manufacturing activities by developing recycling and promoting environmentally friendly techniques	MN-3-1: Establish a recycling system for plastics	●		●	●	●	●	MIEM, MFPE, ANGED, APII, MDICI, MEDD	-
			MN-3-2: Promote environmentally friendly techniques in the chemical and mining sectors			●	●			ANPE, Environment Technologies in Tunis, APII, Techno-pole, MDICI, MIEM, Institut national de la normalisation et de la propriété industrielle,	-
	MN-4	Upgrade production activities and extend the product ranges in the textile industry	MN-4-1: Promote design and product development activities in the apparel sector	●	●		●		●	MFPE, APII, Centre Technique du Textile, UTICA	-
			MN-4-2: Promote linkages in the textile sector in order to enhance new business opportunities and investment	●	●		●		●	UTICA, APII	-
			MN-4-3: Enhance the productive capacities of the textile sector	●	●		●		●	UTICA, APII, MFPE, MIEM	-
	MN-5	Foster a manufacturing base and service for solar (renewable) energy industry	MN-5-1: Strengthen the value chain of Solar Water Heating systems	●	●	●	●	●	●	ODS, Regional Development Task Force, ANME, Techno-poles, Academic and research institutes, MFPE, IRA, Borji Cedria, MIEM (APII), FIPA, financing institutes, APIA, STEG	-
			MN-5-2: Build a foundation to produce components for photovoltaic modules (PVs) and related services	●	●	●	●	●	●	ODS, Regional Development Task Force, ANME, Techno-poles, academic and research institutes, MFPE, MIEM (APII), FIPA, financing institutes, APIA, STEG	-

Source: JICA Expert Team

S2312 The strategies for the tourism sector and their effects on the achievement of the development vision are shown in the following table. For strategies for the tourism sector are formulated not for sub-sectors but for important elements of tourism promotion, namely, destination development (TM-1), grade-up of the service level (TM-2), tourism resource conservation (TM-3), Community Based Tourism (CBT) (TM-4), and enhanced linkage with agricultural sector

Strategies of tourism sector

Code	Strategy	Effect (Direct / Indirect)			Indicator
		Value-added	Job creation	Sustainability	
TM-1	Creation and promotion of destinations for all seasons in the Southern Region	Improved revenue, especially in the low season	Improved seasonal employment	Improved social stability	1. Hotel occupancy rate 2. Number of nights spent 3. Number of visitors to the Southern Region
TM-2	Development of tourism services meeting international standards	Inviting high-end tourists; Inviting various tourists in different segments	Creating new types of jobs, e.g., therapists, sommeliers, interpreters	Improved basic infrastructure	1. Number of professional licences held 2. Establishment of new hotel standards 3. Number of hotels with classification 4. Repeater rate of tourists
TM-3	Rehabilitation and conservation of tangible and intangible heritages in the Southern Region	Exploiting new tourist sites and new products through the development of local heritages	Creating new types of jobs, especially for highly educated people, e.g., professional tour guides, mediators	Conservation of local heritages and natural resources	1. Establishment of site management plan 2. Number of sites registered on the national and/or UNESCO world heritage list 3. Number of artisans with official certification
TM-4	Development of Community Based Tourism (CBT) for raising participation, awareness and responsibility of civil society	Promoting tourism that directly benefits local people	Involving local people in tourism; Creating new jobs for local tour services	Raising public awareness of local culture and responsibility for protecting the local environment	1. Number of professional licences held by local people 2. Hotel occupancy rate of local accommodation 3. Number of clean-up campaigns conducted
TM-5	Exploitation of agro-tourism through collaboration with the agriculture sector	Promoting sales of local products	Creating more jobs for local farmers	Improved social stability	1. Sales of agricultural products

Source: JICA Expert Team

S2313 The coverage, actors, and cost of each plan are presented in the following table. As tourism resources are distributed over the Southern Region, target areas for tourism promotion extend to all six governorates.

Coverage of strategies and plans by governorate / Actors of strategies and plans (Tourism sectors)

Sector	Code	Strategy	Plan	Target Governorate						Actor	Cost (Million TND)
				Méd.	Tata.	Gab.	Gaf.	Kéb.	Toz.		
Tourism: TM	TM-1	Creation and promotion of destinations for all seasons in the Southern Region	TM-1-1: Establish the DMO	●	●	●	●	●	●	ODS, municipalities, MTA, ONTT and CR Tourism, - DR Transport, DR Equipment, DR Culture, ONAT, Institut National du Patrimoine, UTICA, FTAV, FTH, local NGOs, etc.	13.0
			TM-1-2: Establish destination contracts	●	●	●	●	●	●	ODS, municipalities, MTA, ONTT and CR Tourism, - DR Transport, DR Equipment, DR Culture, ONAT, Institut National du Patrimoine, UTICA, FTAV, FTH, local NGOs, etc.	17.3
			TM-1-3: Promote destinations for domestic and international markets	●	●	●	●	●	●	DMO, MTA, ONTT and CR Tourism, FTAV, FTH	-
			TM-1-4: Create a taxation system particularly for tourism development	-						DMO, MTA, ONTT and CR Tourism, MF,	-
	TM-2	Development of tourism services that meet international standards	TM-2-1: Establish laws, standards or “Cahier des charge” for tourism services	-						MTA, ONTT and CR Tourism, FTAV, FTH, Ministry of Health, ANGED, SONEDE	-
			TM-2-2: Provide professional training courses for new tourism services	-						ONTT, Ministry of Culture, MARHP, Ministry of Health	9.2
			TM-2-3: Improve regional tourism infrastructure	●	●	●	●	●	●	Municipalities, MEHAT, MT, SONEDE, ONAS, MTA, ONTT, CR Tourism, FTH, Ministry of Health, etc.	-
			TM-2-4: Mobilize the budget for improvement of tourism services	-						MTA, MEHAT, MT, SONEDE, ONAS, etc.	-
	TM-3	Rehabilitation and conservation of tangible and intangible heritages in the Southern Region	TM-3-1: Conserve tangible heritages	●	●	●	●	●	●	Ministry of Culture, Institut National du Patrimoine, DMO	25.9
			TM-3-2: Conserve intangible heritages such as artisans, music, and dance	●	●	●	●	●	●	Ministry of Culture, ONTT, ONAT, DMO	8.6
			TM-3-3: Register local heritages on the national and/or UNESCO’s world heritage list	●	●	●	●	●	●	Ministry of Culture, Institut National du Patrimoine, DMO, MEHAT, MARHP	5.8
			TM-3-4: Create a tourist circuit	●	●	●	●	●	●	DMO, ONTT, CR Tourism, DR Equipment	105.12
			TM-3-5: Develop tourist sites	●	●	●	●	●	●	Ministry of Culture, Municipalities, Institut National du Patrimoine, MEHAT, MARHP, Agence de Mise en Valeur du Patrimoine et de la Promotion Culturelle	139.36
			TM-3-6: Mobilize budget for conservation of tangible and intangible heritages	-						Ministry of Culture, Institut National du Patrimoine, Agence de Mise en Valeur du Patrimoine et de la Promotion Culturelle	-

Sector	Code	Strategy	Plan	Target Governorate						Actor	Cost (Million TND)
				Méd.	Tata.	Gab.	Gaf.	Kéb.	Toz.		
	TM-4	Development of Community Based Tourism (CBT) for raising participation, awareness and responsibility of civil society	TM-4-1: Establish the CBTO	●	●	●	●	●	●	ODS, municipalities, local NGOs, local associations, CR Tourism	25.9
			TM-4-2: Develop “Eco-museums”	●	●	●	●	●	●	CBTO	
			TM-4-3: Provide necessary training for local people	●	●	●	●	●	●	Ministry of Culture, DR Culture, ONTT, CR Tourism, CBTO	
			TM-4-4: Establish laws, standards, or “Cahier des charge” for tourism services	-						MTA, FTH, AFT, MEHAT	-
			TM-4-5: Improve local tourism infrastructure	●	●	●	●	●	●	Municipalities, MEHAT, MT, SONEDE, ONAS, etc.	-
			TM-4-6: Mobilize the budget for the CBT	-						ODS	-
	TM-5	Exploitation of agro-tourism through collaboration with the agriculture sector	TM-5-1: Promote agro-tourism	●	●	●	●	●	●	MARHP, CRDA, DGA, DMO, municipalities, MTA, ONTT, CR Tourism, FTH, etc.	17.3
			TM-5-2: Provide necessary training for agro-tourism	●	●	●	●	●	●	ONTT, CR Tourism, CRDA	9.2
			TM-5-3: Establish laws, standards, or “Cahier des charge” for agro-tourism	-						MTA, Ministère des Domaines de l’Etat et des Affaires Foncières, MARHP, MEDD	-
			TM-5-4: Develop facilities to improve access to the market	●	●	●	●	●	●	Farmers’ groups, ONTT, CR Tourism, FTH	-
			TM-5-5: Mobilize the budget for agro-tourism	●	●	●	●	●	●	ODS	-

Source: JICA Expert Team

S2314 The strategies of the handicraft sector and their effects on the achievement of the development vision are shown in the following table. The strategy focuses on enhanced competitiveness of the sector through the development of a value chain in cooperation with the livestock sector, reinforced marketing/commercialisation, and strengthened supports to micro- and small-scale enterprises.

Strategies of handicraft sector

Code	Strategy	Effects and Impacts			Indicator
		Value-added	Job creation	Sustainability	
HC-1	Enhancing the competitiveness of handicrafts made in the Southern Region	Increased production and sales of higher value added handicrafts; Improved supply chain	Increase of economically viable self-employment and microenterprises	Sustainable employment opportunities; Conservation of traditional knowledge and techniques and authentic crafts; Improved institutional capacity of ONA; Higher awareness of handicrafts and their cultural values	・ Number of new businesses (manufacturer, retailers) ・ Number of new jobs ・ Income increase of the sector workers / higher turnover of the firms ・ Number of sales outlets ・ Sales volume and values at handicrafts villages ・ Export values ・ Number of functional cultural/learning facilities

Source: JICA Expert Team

The coverage, actors, and cost of each plan are presented in the following table.

Coverage of strategies and plans by governorate / Actors of strategies and plans (Handicraft sectors)

Sector	Code	Strategy	Plan	Target Governorate						Actor	Cost (Million TND)
				Méd.	Tata.	Gab.	Gaf.	Kéb.	Toz.		
Handicraft: HC	HC-1	Enhancing the competitiveness of handicrafts of the Southern Region	HC-1-1: Development and Strengthening of the value chain of wool and leather handicrafts	●	●		●	●	●	OEP, ODS, ONA, API, UTICA	0.1
			HC-1-2: Reinforcement of marketing and commercialization of handicrafts	●	●	●	●	●	●	ONA, MTA, CEPEX, Ministry of Culture, vocational training institutes, Ministry of Education	0.4
			HC-1-3: Strengthening of micro- and small-scale handicrafts enterprises	●	●	●	●	●	●	ONA, vocational training institutes, CEPEX, BTS, microfinance institutions	0.4

Source: JICA Expert Team

3.3 Strategies for infrastructure development

S2316 **Infrastructure sector i**s composed of those for i) transport, ii) water supply and wastewater treatment, iii) power supply and iv) telecommunications. Strategies for infrastructure development are formulated with the following purposes:

Purpose of infrastructure development strategies

Purpose	
Corresponding to demand increase	To keep up with the future demand increase projected by JET experts with socio-economic assumptions, infrastructure development must meet the future demand of the residents.
General improvement of infrastructure	For the better living conditions of the residents and the employees and managers of the attracted enterprises, public services have to be developed with improved infrastructure. Sustainable development is an essential policy applied for infrastructure improvement.
Support for productive sector development	The main purpose of infrastructure development in the planning under the Project is to support productive sector development. Transport infrastructure is the key component serving to connect production areas with processing centres and further to exporting gateways. Water supply/wastewater treatment and power supply are important utility services for the productive sector development, while telecommunication services are inevitably necessary for upgrading the productive sectors.

Source: JICA Expert Team

S2317 **Strategies of transport sector** are as follows. It is critically important for this sector to support the productive sector development by reducing the transportation costs for goods and passengers through the provision of efficient transport services and the development of export facilities to promote export to international markets directly from the Southern Region.

Strategies of transport sector

Code	Strategy	Effect (Direct / Indirect)			Indicator
		Value-added	Job creation	Sustainability	
TR-1	**Increase the possibilities of mobility:** Upgrade accessibility to major cities in Tunisia and neighbouring countries and increase intra-governorate traffic	Reduced transportation time and cost	General improvement of the business situation to facilitate the activities of entrepreneurs and citizens	Reduction of CO_2 and exhaust gas emissions	・Transportation time ・Passenger-km and Ton-km of freight ・Waiting times in congestion spots in urban areas ・Pavement ratio of rural roads
TR-2	**Increase the intensity of mobility:** Enhance the capacity and service quality of all transport modes	Activation of the economy by increased external trade and public transportation users	Creation of jobs, e.g., drivers	Improved markets, sales and jobs stability	・No. of passengers using public transport ・Rail, road, port, and air traffic (freight, passengers)
TR-3	**Increase the sustainability of mobility:** Establish and reinforce infrastructure operation and maintenance (OEM) systems	Reduced maintenance costs	Creation of sustainable skilled jobs specialized in maintenance	Maximized operational life of infrastructure	・Roughness index (flatness) ・Number of overloaded trucks on the roads

Code	Strategy	Effect (Direct / Indirect)			Indicator
		Value-added	Job creation	Sustainability	
TR-4	**Increase the safety/eco-friendliness of mobility:** Consider the traffic safety and environment	Enhanced local amenities	Enhancement of staff capacity; Job Creation in the environment domain	Mitigation of pollution generated by transport	・Traffic casualties ・Traffic accidents ・Pollutants discharged into the sea from ports ・Emissions of CO2
TR-5	**Support the production sector,** towards international industries and services	Activation of the local and national economies	Generating demand for staff, materials, and equipment	Induce effects for the local economy	・Number, extent, and use of logistical areas ・External trade volume ・Number of international passengers by air

Source: JICA Expert Team

S2318 Following are the implementation plans for transport infrastructure development:

Implementation plans of transport infrastructure development

Type	Reference	Comments	Cost (DT. million)
Roads			
Fast track/ Short-term (before end 2020)	**TR-3-5**	A road database is essential to realize works in an integrated manner	---
	TR-3-4	Maintenance of itineraries (to be continued)	---
	TR-2-5	Essential to more easily fund works on other main roads	---
	TR-3-9	Essential to more easily fund smaller-scale works	---
	TR-4-1	Essential to know where blind spots are, along with the other major causes of accidents	---
	TR-4-5	Use of the Fund to implement works on case-by-case basis.	---
Medium-term (until 2025)	**TR-1-2**	4 new roads, 2 paved and 2 unpaved	---
	TR-1-8	4 ring roads to be constructed	500 incl. all TR-1-8 projects
	TR-2-1	6 liaison maximum possible in the mid-term (priority among road works)	6,384 incl. all TR-2-1 projects
	TR-3-4	Maintenance of itineraries (contd.)	---
	TR-2-5	Work on other main roads (via Fund)	---
	TR-3-9	Small-scale works (via Fund)	---
	TR-4-2	9 touristic itineraries planned and realized	---
	TR-4-5	Use of the Fund to implement works on a case-by-case basis.	---
	TR-5-10	The road on the Chott is realized (phase 2 of the project)	---
Long-term (until 2035)	*TR-1-2.*	1 new paved/unpaved road constructed per year >>> 10 of each (max.)	---
	TR-1-8	1 new ring road possible per year >>> 10 max.	500 incl. all TR-1-8 projects
	TR-1-10	Commissioning of the bridge planned for 2027 (year 12)	170
	TR-2-1	20 additional itineraries maximum possible (if enough traffic)	6,384 incl. all TR-2-1 projects
	TR-3-4	Maintenance of itineraries (contd.)	---
	TR-2-5	Work on other main roads (via Fund)	---

Type	Reference	Comments	Cost (DT. million)
	TR-3-9	Small-scale works (via Fund)	---
	TR-4-2	Additional itineraries possible, but the priority is to maintain the 9 existing ones.	---
	TR-4-5	Use of the Fund to implement works on a case-by-case basis.	---
Railways			
Fast track/ short term (less than 5 years)	TR-1-3	Conclusions of the fast train study to be available by 2020 (see TR 3-7)	10
	TR-2-4	First wagons to replace are purchased and put into service. Audit of locomotives – Definition of needs for upgrading or replacement	---
	TR-3-7	Comprehensive study (passengers + freight, all network) terminated by 2019	---
Medium term (until 2025)	TR-2-4	Continuation of replacement of wagons Upgrading and replacement if necessary (phase 1)	---
	TR-4-4	Refurbishment of all train stations in South Tunisia New train station in Gabès (multi-modes)	---
Long-term (until 2035)	TR-1-4	New tram+train transport system Gabès-El Hamma (if studies OK)	42.26
	TR-1-5	Rail link North Tataouine - Zarzis port terminated by 2027 (estimated)	253
	TR-2-4	End of replacement of wagons Upgrading and replacement if necessary (phase 2)	---
	TR-5-10	Railway links Kébili -Tozeur and Kébili -El Hamma by 2035	---
Ports			
Fast track/ *Short-term* (less than 5 years)	TR-5-4	Cleaning/depollution of Gabès port area Handling material for containers Development of a storage area for containers	---
	TR-5-5	Creation of an *ad hoc* development structure in Zarzis (port + FTZ etc.) Handling material for containers Development of a storage area for containers	---
Medium-term (until 2025)	TR-5-4	Pollutants are removed – The issue is settled (in 2021) Development of the port area (post for petroleum in particular)	---
	TR-5-5	Development of new economic zone Development of the port area in conjunction (+storage containers)	---
Long-term (until 2035)	TR-5-4	Half-term assessment in 2025 Further extension possible	---
	TR-5-5	Assessment of phase 1 (2025) 2nd phase of extension of the structure Possibility of construction of a cruise terminal Note: the arrival of the railway line from Tataouine is foreseen in 2027	---
Airports			
Fast-track/ short term (less than 5 years)	TR-1-9	Development of studies for Tataouine Airport	---
	TR-5-6	Creation of project structure Study of business plan Implementation of the pilot project for 2 years	---
Medium-term	TR-1-9	Validation of the development plan for Tataouine Airport in	---

Type	Reference	Comments	Cost (DT. million)
(until 2025)		coordination with other airports	
	TR-5-6	Assessment of the pilot project if success: continue	---
Long-term (until 2035)	TR-1-9	Commissioning of new structure (year 2034) of Tataouine Airport	---
	TR-5-6	If success continue and add destinations and/or frequencies	---
Urban and interurban transport			
Fast track/ short term (less than 5 years)	TR-1-6	Preliminary studies and public consultation for Gabès - Light rail transport (LRT) system	---
	TR-1-7	Studies by 2020 on several itineraries (Gafsa)	---
	TR-2-3	The first vehicles are procured and commissioned	---
	TR-3-6	The information system is commissioned and operative	---
	TR-4-3	All refurbishments are realized (Note: for Gabès bus station in connection – location, time - with the new train station and future LRT station)	---
	TR-5-2	The program is prepared and implemented in designated locations	---
	TR-5-3	The oldest 10% of the fleet is replaced	---
Medium-term (until 2025)	TR-1-6	All studies implemented for Gabès – LRT system	---
	TR-1-7	Construction and commissioning of dedicated lines in Gafsa (TCSP)	---
	TR-2-3	A new number of vehicles is procured and commissioned	---
	TR-3-6	Operation, maintenance and continuous improvement of the system	---
	TR-5-2	The program of improvement of facilities is completed by 2021	---
	TR-5-3	Replacement of the *louage* vehicles continues	---
Long-term (until 2035)	TR-1-6	Tendering, construction works, commissioning for Gabès - LRT system estimated in year 18 (2033)	---
	TR-1-7	Commissioning of BRTs on a selection of TCSP lines in Gafsa (also by 2033)	---
	TR-2-3	The fleet of buses has been completely rejuvenated	---
	TR-3-6	Operation, maintenance and continuous improvement of the system	---
	TR-5-3	The rejuvenation of all fleet of *louages* is completed before 2030	---

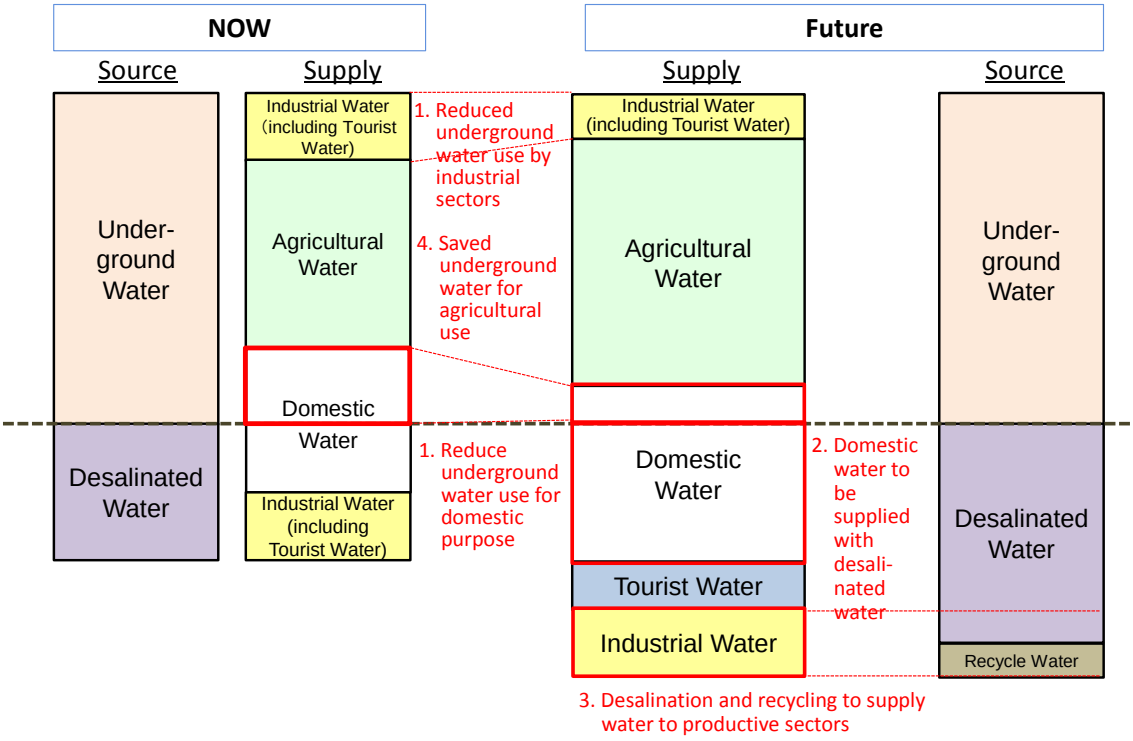
Source: JICA Expert Team

S2319 Following are the **strategies for water supply and wastewater treatment sector**. To allow the agricultural sector to use more groundwater or to use groundwater continuously, it will be necessary to shift domestic and industrial water supply sources from groundwater to desalinated and recycled water (see the below figure). For wastewater treatment, the plan is to raise the ratio of households connected to wastewater treatment networks in order to catch up with other regions of Tunisia.

Strategies of water supply and wastewater treatment sector

Code	Strategy	Effect (Direct / Indirect)			Indicator
		Value-added	Job creation	Sustainability	
WA-1	SONEDE related; Underground water shall be used as agricultural water by reducing its supply for residential and industrial usage			Conservation of natural water resources	・65% of residential water will be provided by desalinated water sources by the year 2025.
WA-2	SONEDE related; For residential water, desalinated water shall be supplied.	Connection of networks between major cities/towns	Increased desalination plant employees.	Conservation of natural water resources	SONEDE related; For residential water, desalinated water shall be supplied.
WA-3	SONEDE and ONAS related; For industrial water, desalinated water and WWTP-treated water shall be supplied.	Improved desalination plants and WWTP treatment processes .	Improved desalination plants and WWTP processes; Increase in employees.	Conservation of natural water resources	SONEDE and ONAS related; For industrial water, desalinated water and WWTP-treated water shall be supplied.
WA-4	ONAS related; Improvement of the wastewater treatment network and its connection ratio	Improvement of wastewater treatment network	Increase in WWTPs and employees	Protection of the natural environment and prevention of water-borne diseases	ONAS related; Improvement of the wastewater treatment network and its connection ratio

Source: JICA Expert Team Note: WWTP: Waste water treatment plant



Basic concept of current and future water source and supply

S2320 Desalination plant construction plan and major wastewater treatment programmes are shown in the following tables.

Construction plan of desalination plant

		by SONEDE data													by JET			
		- 2015			- 2016			- 2020			- 2025			- 2025 TOTAL	--2035			--2035 TOTAL
		Plant	Governarate	(m3/d)	Plant	Governarate	(m3/d)	Plant	Governarate	(m3/d)	Plant	Governarate	(m3/d)	(m3/d)	Plant	Governarate	(m3/d)	(m3/d)
East	SWRO				Djerba	Médenine	50,000	Zarat	Médenine	50,000	Djerba exp	Médenine	25,000		Zarat exp *New*	Médenine	50,000 *40,000*	
	SWRO Total			0			50,000			50,000			25,000	125,000			90,000	215,000
	BWRO	Gabès Djerba Zarzis Ben Guerdane	Gabès Médenine Médenine Médenine	34,000 20,000 15,000 1,800	Beni Kedache Matamata Mares	Médenine Gabès Gabès	800 4,000 5,000	Ben Guerdane	Médenine	9,000					*New 1* *New 2*	*Gabès* *Tataouine*	*5,000* *4,400*	
	BWRO Total			70,800			9,800			9,000			0	89,600			9,400	99,000
		Total		70,800			59,800			59,000			25,000	**214,600**			99,400	**314,000**
West	BWRO				Tozeur Nafta Hezoua Kébili Souk Lahad Douz Berkhir	Tozeur Tozeur Tozeur Kébili Kébili Kébili Gafsa	6,000 4,000 800 6,000 4,000 4,000 1,600	Degueche Kebili exp Mdhila-Guettar Metlaoui-Redayef-Moulares	Tozeur Kebili Gafsa East Gafsa West	2,000 2,000 9,000 6,000					*???* *(Several places)*	*???*	*54,600*	
		Total					26,400			19,000				**45,400**			*54,600*	**100,000**
Grand Total(*)				70,800			86,200			78,000				260,000				414,000

Blue figutre: estimated by JET
(*)Grand Total capacity: discussed with SONEDE at Montfleu on 20.2.2015

Estimated cost during 2015-2025: DT. 453 million (except on-going projects listed in the columns of '- 2015' and '- 2016' of the above table, costs for the plants to be constructed by 2020; DT. 278 million, costs for the plants to be constructed by 2025; DT. 157 million, costs of plants additionally proposed by JET to be constructed by 2025; DT. 18 million)

Major wastewater treatment programmes

Governorate	Project	Location	Outline	million TND
Gabès				
1	Improve the quality of treated water	El Hamma	Upgrading of STEP	2.6
2	New Network	No 23 Catchment	75km, 4550 houses	7.5
3	Upgrading the existing aeration system	Gabès		6
4	Rehabilitation of facility	Gabès & El Hamma	12km rehabilitation	4.3
5	Improve of sludge management	all		-
Médenine				
1	New WWTP	Djerba Ajim		4
2	WWTP & pipe network	Ben Guerdane	70km	24
3	Improve the quality of treated water	Médenine WWTP	Upgrading of WWTO 5	0.3
		Zarzis, Souhill,..	Rehabilitation of pumping station	12
4	New Network (5th planning)	No 18 Catchment	88km, 5000 houses	8.5
5	Depollution Programme of the Mediterranean Sea - DEPOLMED	Zarzis, Midoun and Ajim…	Extension of agout 123 km of pipelines and connection of about 3900 houses	15
		Zarzis, Midoun and Ajim…	Extension and rehabilitation of each WWTP	33
6	Improve of sludge management	all		-
7	Study of cogeneration	Djerba Aghir		-
Tataouine				
1	Sanitation	El maharajene		0.3
2	New Network	No 3 Catchment	10km, 500 houses	1
3	New Network	Tataouine, & Ghomrassen	13km, 450 houses	1
4	Improve of sludge nanagement	all		-
5	Upgrading	Tataouine WWTP		5
Gafsa				
1	Expansion & rehabilitation	Gafsa	19 WWTPs & 130 pump station	29
2	Sanitation	El Guettar	WWTP & 25km pipeline for 2800 houses	10
3	Sanitation	10 middle size cities	Commune STEP, 100km pipeline for 8000 houses	30
4	Sanitation	Mdhilla	STEP, 20km pipeline for 1500 houses	8
5	Sanitation	12 cities	42km pipeline for 3100 houses	4.5
6	Improve of sludge management	all		-
Tozeur				
1	Improvement	Hazoura	STEP, 18km pipe for 800 houses	4
2	Sanitation	6citire	17km pipe for 740 houses	1.8
3	Rehabilitation and expansion of WWTP	Nefta		15
4	Improve of sludge management	all		-
Kébili				
1	Water environment improvement	Kébili, Douz ..	82km extension pipeline for 6000 houses	13
			10km pipeline rehabilitation	2
2	Improvement	Telmine	9km pipeline for 465 houses	1.3
3	Sanitation	4 cities	13km pipelne for 1260 houses	1.7
4	Sanitation	Souk Lahad	STEP, 35km pipeline for 3000 houses	10
5	Improve of sludge management	all		-
Data source: ONAS Tunis, Note: WWTP-Waste Water Treatment Pland				

The total cost of major wastewater treatment programmes excluding sludge management: DT. 255 million

In addition, construction of advanced wastewater treatment plants is planned for producing suitable quality of water for industrial use with the total cost of DT. 33 million.

S2321 Following are the strategies for the **power supply sector**. The Tunisian Company of Electricity and Gas (STEG) has enough capacity and capability to supply electricity stably to respond to the demand increase of the productive sector throughout Tunisia. The proposals therefore call for upgraded power supply management of STEG to a more sophisticated level, i.e., introduced/enhanced demand control (PS-1), reduced power loss (PS-2), and

introduced/expanded renewable energy use, in addition to infrastructure development corresponding to the regional development (PS-3).

Strategies of power supply sector

Code	Strategy	Effect (Direct / Indirect)			Indicator
		Value-added	Job creation	Sustainability	
PS-1	Reduce the power demand load peak through demand control	Investment may be assigned to improve the quality of power.	Employment is created by the new type of industry DRA.	The consumption of fossil fuel decreases.	・Plant operation ratio ・Capacities of generation plants ・Subscribers of Demand Response
PS-2	Increase the amount of available energy by reducing the ratio of power distribution loss	Economic efficiency of the power industry improves.	Employment for equipment replacement is created.	The consumption of fossil fuel decreases.	・Electric power distribution loss rate 5
PS-3	Infrastructure development in line with the scenario of the development plan	Contributions are made to promote industries in the Southern Region.			・Installation capacity for electricity infrastructure
PS-4	Introduce renewable energy for base power and peak power response	Green power spreads.	Employment for construction and maintenance of the equipment is created.	The consumption of fossil fuel decreases.	・The renewable energy supply rate will decrease

Source: JICA Expert Team

S2322 **Plans** of power supply sector are provided in the following tables.

Plans under Strategy: PS-1

Strategy	**PS-1**	**Reduction of the power demand load peak through the demand control**			
Plan		**Actions**	**Term**	**Cost**	**Relevant organisations**
PS-1-1: Institutional Design of the Demand Response Project		- The supervising ministry has to conduct surveys and institutional design for the demand response project. - The supervising ministry has to establish an organization to supervise screening of the project. - The supervising ministry has to establish an organization to lead the project operator.	Short	3 million DT	− MIEM − STEG − MCTEN etc.
PS-1-2: Consideration of Project Feasibility and Planning		- The electricity company has to establish a demand response organization. - The electricity company has to conduct a survey on the effects of demand response and incentives to DRA. - The supervising ministry has to draw a plan for the project to demonstrate demand response.	Short	0.3 million DT	
PS-1-3: Demonstration Project for Actual Introduction		- The private business has to establish a project company for DRA. - The supervising ministry has to implement the demonstration project for DRA.	Short - Mid	36 million DT	

Source: JICA Expert Team

Plans under Strategy: PS-2

Strategy	**PS-2**	**Increase the volume of available energy by reducing the ratio of power distribution loss**		
Plan	**Actions**	**Term**	**Cost**	**Relevant organisations**
PS-2-1: Survey on the Current Situation and Consideration of Measures	- The electricity company has to establish an organization to conduct surveys and consider measures. - The electricity company has to conduct surveys to find the causes of the current power distribution loss. - The electricity company has to redesign power transmission and distribution lines based on the survey results.	Short	7 million DT	− STEG − 6 Governorates of the Southern Region
PS-2-2: Efforts to Put the Design into Execution	- The electricity company has to formulate an execution plan based on the redesign. - The electricity company has to procure funds based on the project plan. - The electricity company has to put the plan into execution.	Short - Mid	Depends on Design	

Source: JICA Expert Team

Plans under Strategy: PS-3

Strategy	**PS-3**	**Infrastructure development in line with the scenario of the development plan**		
Plan	**Actions**	**Term**	**Cost**	**Relevant organisations**
PS-3-1: Reflection of Future Forecast in the Plan	- Future demand and future forecasting of installation - Creation of a development scenario - Calculation of the necessary infrastructure capacity based on the future forecast and scenario	Short	Included in this survey	− STEG − 6 Governorates of the Southern Region
PS-3-2: Implementation of the Plan	- A plan for introduction is to be formulated based on the necessary infrastructure capacity. - The introduction is to be implemented in accordance with the plan.	Short - Mid	3,680 million DT	

Source: JICA Expert Team

Plans under Strategy: PS-4

Strategy	**PS-4**	**Introducing renewable energy for base power and peak power response**		
Plan	**Actions**	**Term**	**Cost**	**Relevant organisations**
PS-4-1: Overall Goal and Feasibility Study, and Formulation of a Plan based on Demand Forecast	- Surveying the volume of renewable energy that can be introduced - Forecasting the electricity demand in each area - Planning the introduction in consideration of the survey results and overall goal	Short - Mid	3 million DT	− ANME − STEG − STEG-ER − MIEM − 6 Governorates of the Southern Region − ODS − Power producer − Small- and Medium-Scale Enterprises
PS-4-2: Improvement of Support Systems for Implementation of the Plan	- Support systems for implementation of the plan are to be established. - The project is to be executed according to the plan.	Short - Mid	Depends on Plan	

Source: JICA Expert Team

S2323 **Strategies of telecommunications sector** are as follows. Improvement of telecommunication quality (TC-1) is fatally important for the regional development, especially in the region where population and industrial establishments are sparsely distributed, like the Southern Region. Diffusion of wireless-communication environment (TC-2), taking advantage of the technology development of wireless-communication, would help reduction of information disparity and contribute to promotion of the productive sectors.

Strategies of Telecommunication sector

Code	Strategy	Effect (Direct / Indirect)			Indicator
		Value-added	Job creation	Sustainability	
TC-1	Improvement of telecommunica-tion quality	Establish a high-speed and stable communication line			・Telecommunication speed (Gbps)
TC-2	Diffusion of a wireless-communication environment	Improvement in productivity using communication technology	Expansion of the new business opportunities using the Internet	Decreasing movement by not receiving space restrictions	・Public-wireless-LAN diffusion rate ・Next-generation wide-range wireless communication diffusion rate ・The number of websites

Source: JICA Expert Team

S2324 The **plans** of the telecommunications sector are provided in the following tables. As the sector is operated by the private companies, it is necessary to encourage the private operators to invest in less populated inland areas with a specific funding system, as was done with the universal service[1] system introduced in Japan, France, and other countries and as proposed as an action in TC-2-2.

Plans under Strategy: TC-1

Strategy TC-1	**Improvement of telecommunication quality**			
Plan	**Actions**	**Term**	**Cost**	**Relevant organisations**
TC-1-1: Building organization to improve telecommunication quality	- Building an organization to improve the telecommunication quality - Having discussion to improve the telecommunication quality	Short - Mid	0.5 million DT	− MTCEN − Telecommuni-cation company − Centre d'Etudes et de Recherche des Télécommu-nications (CERT) Tunisienne
TC-1-2: Consideration of a system for telecommunication quality	- The committee to improve the telecommunication quality has to conduct a survey on the current telecommunication environment. - Based on the survey results, a system to improve the telecommunication quality is to be designed. - Infrastructure development is to be planned within the framework of the system.	Short - Mid	0.3 million DT	

[1] Universal service: A universal service is a charge system for telecommunication introduced in France, UK, USA, Japan, and many other countries. Even if an area is unprofitable, a telecommunication network can still be maintained in the area by this service. Telecommunication service is indispensable for national life but is difficult to spread in rural areas. So telecommunication companies collect small charges widely from general telecommunication service users and return funds to the development of rural areas.

Strategy	**TC-1**	**Improvement of telecommunication quality**			
Plan		**Actions**	**Term**	**Cost**	**Relevant organisations**
TC-1-3: Efforts for improvement of telecommunication quality		- A system to support implementation of the plan is to be established. - The telecommunication company has to take the initiative in implementing measures.	Mid	160 million DT	

Source: JICA Expert Team

Plans under Strategy: TC-2

Strategy	**TC-2**	**Diffusion of wireless-communication environment**			
Plan		**Actions**	**Term**	**Cost**	**Relevant organisations**
TC-2-1: Building of an organization to discuss information disparity		- Building an organization to correct information disparity - Having discussion to correct information disparity	Short - Mid	0.3 million DT	− MICT − ODS − Telecommuni-cation company − NGO/NPO − Tunisia CERT
TC-2-2: Consideration of a system to promote correction of disparity		- The committee to correct information disparity has to a survey the current telecommunication environment. - Based on the survey results, a system to correct information disparity is to be designed. - Infrastructure development is to be planned within the framework of the system. - Enact a law for introducing the universal service.	Short - Mid	0.2 million DT	
TC-2-3: Efforts to establish a wireless-communication environment		- A system to support implementation of the plan is to be established. - The telecommunication company has to take the initiative in implementing measures.	Mid	8 million DT	

Source: JICA Expert Team

3.4 Crosscutting strategies, plans and action plans

S2325 Optimal use of limited groundwater is essential for sustainable regional development. One critical issue is how to control extraction from deep aquifers. The Government has set an objective of stabilising the use of fossil water (the CT-Complexe Terminal aquifer extending over Algeria, Tunisia and Libya and mainly abstracted in Tozeur and Kébili; the CI-Continental Intercalaire aquifer (also) extending over Algeria, Tunisia and Libya and mainly abstracted in Tozeur and Kébili; and the Djeffara aquifer extending over coastal areas of Tunisia and Libya and mainly abstracted in Gabès and Médenine) after 2030. An idea shared with Ministry of Agriculture, Water Resources and Fishery (MRHP) is to limit the deep aquifer water to agricultural use only and to develop new water sources (see S2319) such as desalination (seawater desalination in the Southeast region and underground brackish water in the Southwest region as shown in the below figures) for industrial, touristic, and domestic uses. The

construction plan for desalination plants shown in S2320 is formulated based on this idea. Strategies, plans, and action for groundwater management are descried in this section.

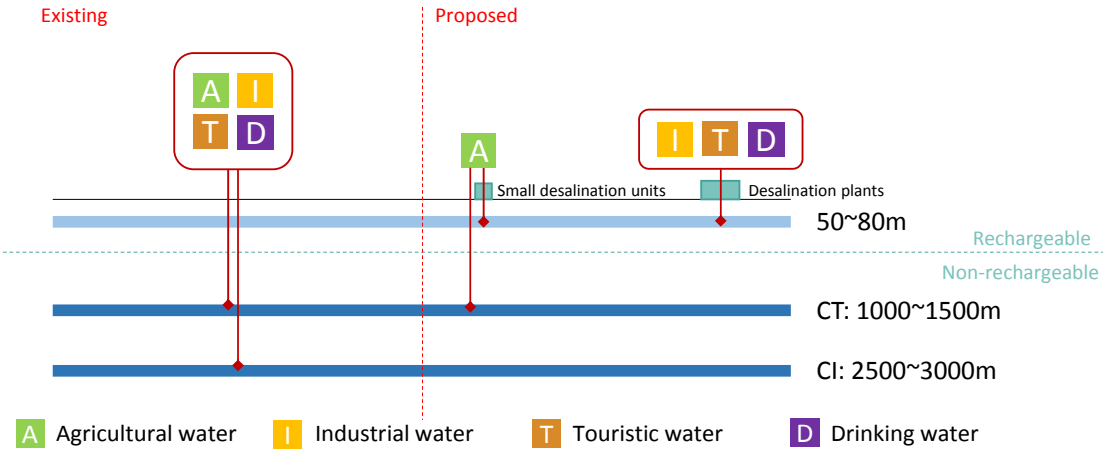


Diagram of the plan to switch exploitation of groundwater resources in the Southwest region

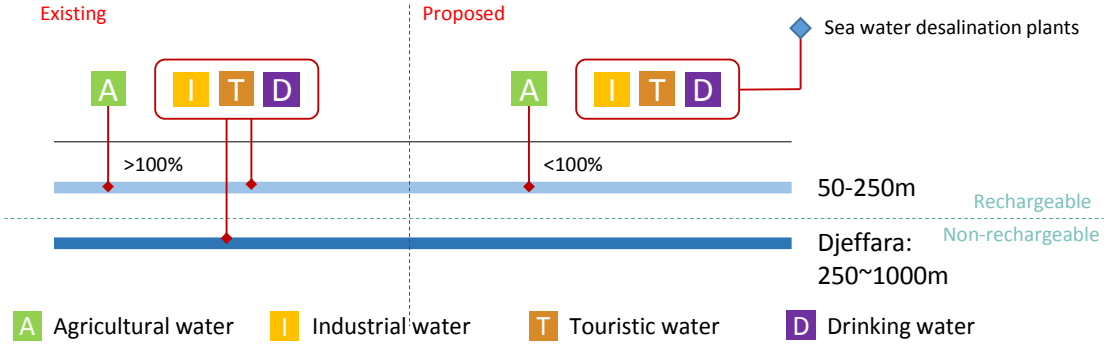


Diagram of the switching in exploitation of groundwater resources in the Southeast region

S2326 Three strategies have been formulated for sustainable groundwater management. Information collection, database establishment, the establishment of a competent organisation (namely, the Permanent Sectorial Commission on Water Resources (CSPRH)) and the formulation of an integrated regional water resources master plan (PDARIRH) are proposed as WM-1. WM-2 proposes the reinforcement of groundwater abstraction control through permission and a well registration system, water charging, and imposition of metering. WM-3 aims to establish local non-rechargeable groundwater management by communities to maintain/improve the social well-being of communities whose livelihood depends on non-rechargeable groundwater.

Strategies on groundwater management

Code	Strategy	Effect (Direct / Indirect)	Indicator
WM-1	Strengthen groundwater resource planning and protection	Acquisition of knowledge on the demand, rationalization of water resource exploitation in the long-term leading to the limitation of water resource depletion	- Percentage of farmers who accept field survey visits and answer the questionnaire - Evolution of the frequency of annual updates of the SASS GIS - Number of created CSPRH (Commission Sectorielle Permanente des Ressources Hydrauliques, permanent sectorial commission on water resources) and formulated PDARIRE (Plans Directeurs d'Aménagement Régional Intégré des Ressources en Eau, Integrated Water Resource Regional Master Plan)

WM-2	Reinforce groundwater abstraction control	Limit abstractions of groundwater water tables, participate in the limitation of overexploitation of underground aquifers and thus in the avoidance of water resource depletion.	- Evolution of the number of permits issued yearly on the new legal system and of the share of water charge collected yearly - Evolution of the share of wells equipped with metering instruments
WM-3	Ensure social sustainability of non-recharge able groundwater management	Preservation of social well-being and livelihoods for communities mostly dependent on a non-rechargeable resources while maintaining an equitable inter-generational distribution of benefits, and thus promoting the social transition to a less water-dependent economy.	- Establishment of innovative local planning tools related to water usage at the horizon 2025 - Evolution of the number of "decentralized management units" and "user association" created

Source: JICA Expert Team

S2327 **Plans** for regulation and control groundwater management are given in the following tables.

Plans under Strategy: WM-1

Strategy	**WM-1**	**Strengthen groundwater resource planning and protection**			
Plan		**Actions**	**Term**	**Cost**	**Relevant organisations**
WM-1-1: Development of demand-oriented socio-economic knowledge		– Organize meetings with various stakeholders in order to identify the sites where the surveys should be done – Conduct field surveys and visits to farms for broad material collection on farming systems – Diffuse questionnaires to farmers in order to collect precise details on specific farming behaviour	Short-term	---	– ODS – Observatoire du Sahara et du Sahel (OSS) – GDA – Consultants – Commission Sectorielle Permanente des Ressources Hydrauliques (CSPRH) or CRDA – MARH – Conseil Régional – MDICI
WM-1-2: Improvement and accessibility of the Geographical Information System (GIS)		– Establish a mechanism for maintenance of the GIS system – Improve knowledge of the GIS system and of its exploitation at the regional scale through training	Short-term	---	
WM-1-3: Improvement of inter-institutional and inter-sectorial coordination on water resource issues through the establishment of CSPRH		– Improve political consensus-making process regarding the creation of the CSPRH in Southern governorates – Ensure capacity development of CSPRH human resources through professional training – Modernise the water information and management tools of the CSPRH	Mid-term	---	
WM-1-4: Reinforcement of the legal framework for regional groundwater resource planning through the adoption of PDARIRE		– Accelerate the adoption of the legal framework (decree) for the establishment of PDARIRE – Mobilise relevant stakeholders in both the Southwest and Southeast regions for the establishment of a Steering Committee of the PDARIRE – Mobilize international and national consultants for drafting the PDARIRE within a participatory approach with local beneficiaries	Mid / Long-term	---	

Source: JICA Expert Team

Plans under Strategy: WM-2

Strategy	**WM-2**	**Reinforce groundwater abstraction control**			
Plan		**Actions**	**Term**	**Cost**	**Relevant organisations**
WM-2-1: Reinforce abstraction permits and a well registration system		− Instigate time-limited permits subject to periodic review (5 to 10 years) − Issue permits only to users who have water resource management plans or water-saving strategy − Establish an order of priority for issuing permits, giving priority to drilling for livestock and high value-added crops	Short term	---	− MARH − CSPRH or CRDA − GDA − OSS − Consultant
WM-2-2: Improve the water charge system		− Evaluation of possible costs, including fixed and variable operational costs of GDAs − Study on a method for the collection of water charges, including the possibility of integrating it in electricity bill − Implement the new water charge collection system	Short term	---	
WM-2-3: Impose the metering of wells		− On the basis of the SASS database of boreholes established in 2000 by OSS, identify the existing wells − Study the technical and financial feasibility including cooperation of international donors − Equip the new wells with flow measurement instruments	Mid term	---	

Source: JICA Expert Team

Plans under Strategy: WM-2

Strategy	**WM-3**	**Ensure social sustainability of non-rechargeable ground water management**			
Plan		**Actions**	**Term**	**Cost**	**Relevant organisations**
WM-3-1: Maintain and improve the social well-being of communities through secured water access and consideration of cultural values		− Conduct field surveys in order to identify local cultural values, lifestyles, and customary groundwater users − Make the inventory of the ecological services provided by the aquifer system − Protect local cultural values and lifestyles related to water usage through innovative local planning tools	Mid term	---	− OSS − CSPRH or CRDA − GDA − Consultants − ODS − Farmers' groups
WM-3-2: Promote equitable and effective decision-making through participation		− Perform broad stakeholder analysis in order to identify all the beneficiaries in local administration, the private sector, and civil society − Study the possibility of establishing "decentralized management units" at the level of all the watersheds of Southern Tunisia − Study the possibility of establishing "user associations" in Southern Tunisia	Mid term	---	
WM-3-3: Maintain and improve inter-generational equity		− Enhance "social capital" through collective activities that evolve the capacity of stakeholders to cooperate effectively on resource utilisation − Promote the outbreak of opportunities for younger generations created by technology breakthroughs that positively impact the water supply	Long-term	---	

Source: JICA Expert Team

S2328 Current issues in **investment, marketing, and trade promotion** are analysed as follows. Basic conditions for investment attraction such as the existence of potential industry, training programmes, research centres, higher educational institutes, industrial zones, and the intervention of financial institutes are satisfied, but investment attraction nonetheless lags behind. For marketing, consumption of some products is rising in world markets, other products have been scientifically proven to have unique characteristics/benefits, and some public support is provided. Yet none of these advantages have yet been effectively utilised, and export has yet to be promoted. There are also obstacles to trade, such as lacking infrastructure and weak or lengthy administrative procedures (export), which prevent Tunisia from taking full advantage of its proximity to Europe, Algeria, and Libya.

Current issues on investment, marketing, and trade promotion

Theme	Sub- theme	Issues	Opportunities
INVEST-MENT	Firm Capacity Human capital	・Accumulation of firms and skilled workers in the manufacturing sector is limited, except for the chemical sector in Gabès. ・Most of the firms in the sector are small scale, and the number of management level personnel is limited. Thus, many firms have difficulty in growing by entering into new markets or by expanding their operations to relevant fields.	・Potential industry segment to expand (to more value-added) product lines. ・Existence of training programs (albeit in need of improvement).
INVEST-MENT	R&D	・Many of research activities are not linked with existing business or translated into new viable investment opportunities.	・Research centres (with different capacities) are installed and high-level educational institutions generate abundant qualified labour to take on employment or initiate personal projects.
	FDI	・There is weak to no linkage between the firms located in the FEZ and local firms. The FEZ therefore fails to generate much spillover effect in demand or technological transfer to the local industries. ・The FDIs in the Southern Regions have been limited in scope and in volume.	・Industrial zones are open and lots are available.
	Access to finance	・The majority of the existing firms and individual entrepreneurs have difficulty in obtaining bank loans.	・Intervention by different financial actors exists and can be exploited.
Marketing (include. export promo-tion)	Market research, product develop-ment promotion	・Most of the firms/individuals have limited capacities in product development (designing product, appealing presentation of the products, etc.) ・Public entities have limited marketing resources and competence to provide appropriate services to the public. ・There is almost no brand equity for the products made in the Southern Region. ・Lack of relevant industries that enable value added to primary products.	・Consumption of south-based products (in principle, dates and olive oil) is on the rise worldwide, particularly in the markets of the Americas, Asia, and Russia. ・Some scientific research results show unique characteristics and health-related benefits of Tunisian products. ・Relevant public support entities exist.

Theme	Sub- theme	Issues	Opportunities
Trade (Export)	Infra-structure, logistics, service	・Lack of container ports nearby to export value added products; limited sea routes (indirect) to final destination countries. ・Underdeveloped principal roads. ・Limited transport measures (i.e., train network) and export routes.	・Proximity to the major destinations.
	Framework and regulations	・Traceability is weak. ・Administrative procedures (issuance of trade permits, customs clearance, etc.) takes time	・Free trade agreement with EU member countries, Maghreb countries

Source: JICA Expert Team

S2329 Following are the strategies for **investment, marketing, and trade promotion**. As the private sector in the Southern Region is not yet strong, public-sector-led investment promotion has to be reinforced (IME-1). As final processing, exportation, and cluster development are all new to the Southern Region, target final products have to be carefully selected after strengthened marketing (IME-2). To shift exportation from Tunis or Sfax to the Southern Region, development requires infrastructure, the capacity building of enterprises in the export business, and institutional strengthening of related local organisations (IME-3).

Strategies on investment, marketing, and trade promotion

Code	Strategy	Effect (Direct / Indirect)	Indicator
IME-1	Reinforcing regional public-sector-led investment promotion	- Stronger coordination amongst investment promoting agencies - Investment growth - Enhanced capacities to evaluate and implement proposed investment plans	・ Number of investment projects submitted ・ Number of investment projects executed ・ Investment value by national investor, and the FDI ・ Investment portfolio by sector (sub-sector) ・ Scheduling (number of days taken) of processing of investment proposals: from submission of an idea and submission of an elaborated proposal to delivery of an evaluation outcome and project initiation.
IME-2	Strengthening marketing of selected regional specialty products (principally processed dates and olives) and services	- Stronger marketing intelligence of sub-sectors - Development of effective marketing tool and brand equity - Market-oriented the R&D	・ Establishment of collective marketing intelligence and committees by major products and systematic updating and management ・ Establishment of a certification system ・ Product Added values ・ Sub-sector growth measured by sales and export volume and values
IME-3	Promoting export growth and diversification	- Micro and small enterprises have necessary knowledge and skills concerning exporting. - More businesses export their products (and services). - More detailed technical support becomes locally accessible	・ Number of exporters from the Southern Region ・ Increase in the export value of major goods ・ Diversification of technical support provided by local chambers of commerce

Source: JICA Expert Team

S2330 **Plans** on investment, marketing, and trade promotion are shown in the following tables,

Plans under Strategy: IME-1

Strategy	**IME-1**	**Reinforcing regional public sector led investment promotion**			
Plan		**Actions**	**Term**	**Cost**	**Relevant organisations**
IME-1-1 Effective promotion of the Southern Region as an attractive investment destination for internal and external investors		- Elaboration of Regional Investment Prospectus - Investment promotion - Definition and implementation of pilot "game changer" project(s) focusing on women, youth beneficiaries, and start-up(s) - Design and Establishment of Special Regional Investment Funds	Short to Medium	For promotion DT 0.32 million (int'l and nat'l consultants fees, promotional materials, workshops; excluding promotional activities) For Pilot projects and Regional Funds DT 0.12 million (int'l and nat'l consultants fees)	ODS as coordinator FIPA, BFPME, APIA, API, SICAR/SODIS, BTS, Techno-poles, IRAs, and commercial banks
IME-1-2 Improvement of institutional capacities of ODS/DRD to attract and monitor investment projects.		Refer to the Regional Development Administration			

Source: JICA Expert Team

Plans under Strategy: IME-2

Strategy	**IME-2**	**Strengthening marketing of selected regional specialty products (principally processed dates and olives) and services**			
Plan		**Actions**	**Term**	**Cost**	**Relevant organisations**
IME-2-1 Improvement of market intelligence (market trends, strategic partnerships, etc.)		- Consolidation of market intelligence (market trend analysis, identification and formation of partnerships, etc.) - Management of market intelligence, including systematic dissemination and sharing of information for key players	Short to Medium	DT 0.22 million (int'l and nat'l consultants fees)	Marketing Committee (described in the IME-2-2) ODS, GIF, private sector, UTICA, Chamber of Commerce Regional Development Taskforce Ministry of Industry, Ministry of Agriculture
IME-2-2 Development of promotional tools and improvement of promotional activities Frameworks – certificate,		- Formation of specialty products marketing committees which are responsible for taking actions such as follows: * Development of regional/ product brands and certification system * Resource mobilization (establishment of special funds for promotion, for example) * Execution of promotional activities	Short to Medium	DT 0.23 million (int'l and nat'l consultants fees) (excluding promotional activities)	

Strategy	**IME-2**	**Strengthening marketing of selected regional specialty products (principally processed dates and olives) and services**			
Plan		**Actions**	**Term**	**Cost**	**Relevant organisations**
IME-2-3 Enhancement of market- driven research activities for product development and improvement for product/service differentiation		- Identification and organization of strategic partnership (including techno-poles and other research centres, design schools, relevant industries, Packtec, etc.) - R&D to identify/build up unique attributes to be translated into new product offerings.	Short to Medium	DT 0.09 million (int'l and nat'l consultants fees)	

Source: JICA Expert Team

Plans under Strategy: IME-3

Strategy	**IME-3**	**Promoting export growth and diversification**			
Plan		**Actions**	**Term**	**Cost**	
IME-3-1 Creation of export friendly logistics and transport conditions in the South Region		**See Infrastructure Strategy**			
IME-3-2 Export promotion of micro and small enterprises		- Capacity building of micro and small enterprises in exporting business - Institutional strengthening of chamber of commerce - Promotion of exportable goods	Short to Medium	DT 0.14 million (international/ national consultants fees)	Chamber of Commerce CEPEX ODS

Source: JICA Expert Team

4. STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)

S2401 It was agreed that **Strategic Environmental Assessment (SEA) should be conducted to address environmental and social considerations** in the Project. Specifically, SEA should assess major environmental and social challenges to the development of the Southern Region in the long term in order to avoid the exacerbation of existing environmental problems such as soil erosion, degradation of marine and coastal environments, and deterioration or depletion groundwater resources.

S2402 With the absence of Tunisian legislation on SEA, **JICA Guidelines of 2010** are applied, considering experimental practices on SEA implemented by Tunisian authority with support of other donors. Some principles and instruments on SEA of OECD would also be adopted as they have been applied in the experimental practices in Tunisia. Three objectives are defined in the JICA Guidelines, as follows:

i) Assessment, at the time of the decision-making of the policies, plans, and programmes, on the considerable impacts on the environment
ii) Comparison of the impacts according to several alternatives
iii) Taking account, through the public consultation, of the interests of the different stakeholders from an early stage in order to encourage good governance

The **OECD Guidelines** recommend that the following three questions for SEA be considered.

- What are the priority environmental problems of the region? Do the plans or programmes proposed cause any risks of exacerbating these problems?
- Have the proposals taken into account of possibility of cumulative effects?
- Do the proposals consider the effects of climate change? Are they susceptible or vulnerable to the effects of climate change?

S2403 **Results of environmental diagnoses** are summarised in the figure of Page ES - 109. In the Southern Region, water resources and soil resources are almost fully utilised already. In addition, the pollution has reached critical levels for human health in the regions of Gabès and Gafsa because of the mining and industrial pollution. The paradigm must be changed to the sustainable use of natural resources, and depollution must be included in the regional development framework.

S2404 The following have been conducted as the **second stage of SEA**:

1) Identify the potential impacts of the project through a scoping matrix;
2) Justify the assessment of these impacts in detail for all the activities of the project;
3) Uncover environmental and social strategic issues to help foresee the direction of development.

S2405 The figure in Page ES – 110 shows a matrix identifying the **potential impacts of the implementation of strategies and plans** to clarify all of the impacts comprehensively.

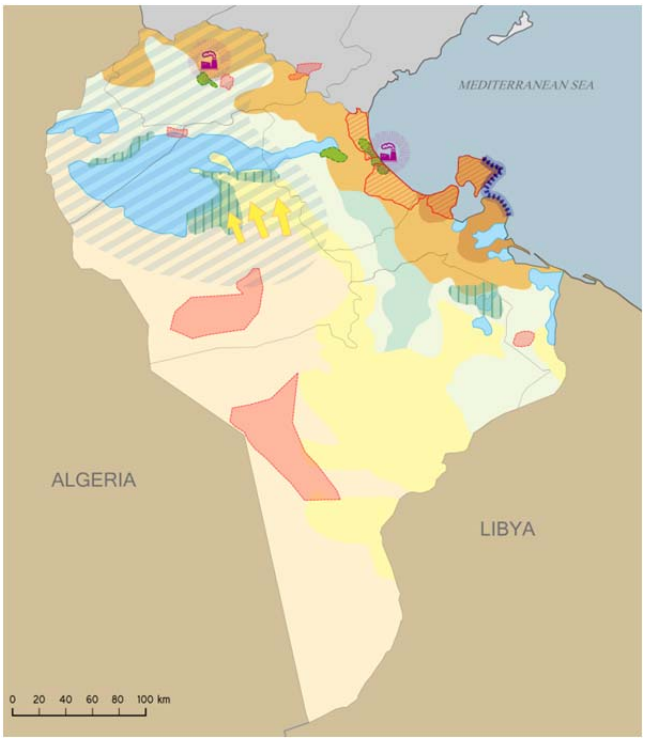
S2406 The following strategic environmental and social issues specific to the Southern Region are considered essential to development: i) Sustainable management of groundwater resource, ii) Environmental remediation of industrial centres, and iii) Better distribution of the economic benefits to local populations.

S2407 **Sustainable groundwater management** is separately discussed as one of the crosscutting issues in Section 3.4 and Sections 2325 – S2327.

S2408 In view of the degree of **severe levels of pollution** reached in the industrial centres of Gabès and Gafsa and the impact on human health, it will be necessary to give priority to clean-up efforts in these regions. The heavy discharge of phosphor-gypsum in the Mediterranean Sea is raising fears in neighbouring Europe over long-term and large-scale effects. The European Investment Bank has also funded a project for the environmental remediation of the Gulf of Gabès with a budget of EUR 45 million. Our project can possibly contribute to the environmental remediation process by moving forward action plans that fit in concordance with the actions of other players.

S2409 Considering job-related pressure, it is appropriate to consider a model for the local economy that prevents dependence of a large population on one company or one sector. Such a model will offer a fine analysis of the territory ensuring a dense and varied entrepreneurial framework to an optimal degree.

S2410 The **identified priority criteria** for impact evaluation and their indicators are listed in the table of ES - 111.



Legend

1. STATE OF THE NATURAL ENVIRONMENT
- Oasis environment in an extremely precarious situation under the pressure of uncontrolled urbanization among other factors
- Arboriculture environment with saline underground resource, densely stocked and facing a very high risk of desertification
- Agro-pastoral environment with groundwater of variable level of quality and high risk of desertification
- Range environment with a medium risk of desertification
- Rain fed agricultural environment with a low risk of desertification through Soil and Water Conservation facilities
- Range environment with a low risk of desertification
- Desert range environment (Erg and Saharan areas)
- Chotts and Sebkhas not prone to desertification

2. MAJOR ENVIRONMENTAL THREATS
- Critical industrial pollution pockets
- Critical coastal erosion area
- Critical salinization area in ground water tables
- Area heavily dependent on non-renewable water in already overexploited deep aquifers
- Critical presence of silting phenomenon

3. PROTECTION OF NATURAL RESOURCES
- Banned ground water table, which acts as a disincentive for the future development
- National parks, biological diversity reserve

Source: JICA Expert Team

Results of environmental diagnoses

Matrix for the identification of the potential impacts of the implementation of strategies and plans

Source: JICA Expert Team

		Anti-pollution measures						Natural environment					Social environment													
		Air quality	Water quality	Soil pollution	Waste management	Noise and vibration	Offensive odors	Geology, topography, soil	Fauna, flora, ecosystem	Hydrology, hydric erosion	Protected area	Water resource use	Involuntary resettlement	Local employment	Local livelihood and res.	Social institutions	Poor	Indigenous or eth. min.	Misdistribution of benefits ar	Local conflicts of interest	Gender	Children's right	Cultural heritage	Infectious diseases, HIV	Landscape	Working conditions
Sectoral development	**Agricultural development**																									
	1. Dates	D	D	D	D	D	D	D	B-	A-	D	A-	D	C+	C+	D	C+	D	D	D	D	D	D	D	C+	D
	2. Olive and olive oil	D	C-	B-	B-	D	C-	C-	B-	D	D	C-	D	C+	C+	D	C+	D	D	D	D	D	D	D	C±	D
	3. Arboriculture & vegetables	D	D	C-	D	D	D	D	C-	D	D	C-	D	C+	C+	D	C+	D	D	D	D	D	D	D	D	D
	4. Livestock	C-	D	D	D	D	D	B-	B-	D	D	C-	D	C+	C+	D	C+	D	D	D	D	D	D	D	D	D
	5. Fishery, aquaculture, & fish processed product	D	D	D	B-	D	C-	C-	A-	D	D	C-	C-	B+	B-	D	B+	D	D	D	D	D	D	D	D	D
	6. Food processing	B-	B-	D	B-	D	C-	D	D	D	D	C-	C-	B+	B-	D	B+	D	D	D	D	D	D	D	D	D
	Industrial development																									
	1. Mining sector and construction material industry	B-	B-	C-	C-	A-	D	A-	B-	D	C-	A-	B-	B+	B+	D	B+	B-	D	B-	D	D	D	D	A-	B-
	2. Textile industry	B-	B-	C-	C-	C-	D	D	C-	D	C-	A-	C-	B±	B+	D	B+	D	D	D	D	C-	D	D	D	B-
	3. Chemical industry	A-	A-	A-	C-	C-	A-	D	A-	D	C-	B-	B-	B+	B+	D	B±	D	D	A-	D	D	D	D	A-	B-
	Tourism development																									
	1. Beach mass tourism and mechanical tourism	D	C-	D	D	D	D	A-	C-	A-	B-	B-	C-	C±	D	D	C±	D	B-	B-	D	D	D	D	A-	D
	2. Saharan tourism	D	D	D	D	D	D	D	C-	D	C-	C-	D	C+	C-	D	C+	C-	D	D	D	D	C-	D	B+	D
	3. Agro-tourism and culture tourism	D	D	D	D	D	D	D	D	D	D	D	D	B+	B+	D	B+	A+	D	D	B+	D	A+	D	A+	D
	4. MISE and medical tourism	D	D	D	D	D	D	D	D	D	D	D	D	B+	B+	B±	B+	D	D	D	D	D	D	D	D	D
Infrastructure development	**Transportation infrastructure**																									
	1. Roads	B-	D	C-	D	B-	D	C-	B-	D	D	D	B-	B+	B+	B+	B+	D	D	D	D	D	D	D	C-	B+
	2. Railroads	B-/D	D	D	D	B-	D	C-	B-	D	D	D	B-	B+	B+	B+	B+	D	D	D	D	D	D	D	D	B+
	3. Ports	B-	B-	D	C±	B-	D	D	B-	B-	D	C-	B-	B+	D	D	B+	D	D	D	D	D	D	D	A-	D
	4. Airports	A-	C-	C-	C±	A-	D	D	A-	D	D	C-	A-	A+	D	D	B+	D	D	D	D	D	D	D	A-	D
	Water supply infrastructure																									
	1. Desalination plant	C-	C-	D	D	C-	D	D	B-	B-	C-	D	B-	B+	D	D	B+	D	D	D	D	D	D	D	A-	D
	Power generation																									
	1. Solar power plant	D	D	D	D	D	D	C-	C-	D	D	D	B-	B+	A+	D	B+	D	D	D	D	D	D	D	A-	D

Note: A+/-: Remarkable Positive/Serious Negative Impact is predicted.
B+/-: Positive/Negative Impact is expected to some extent.
C: Extent of Impact is unknown. (A further examination is needed and the impact could be defined as study progresses.)
D: Impact is very small or nil and further survey is not required.

Priority criteria, strategic objectives and possible indicators

Proposed priority criteria	Strategic objectives	Possible indicator
Water resource depletion	・Preserve water resources, especially those of a non-rechargeable, fossil nature ・Develop water-saving techniques and sustainable use of water resources in all sectors ・Improve the sustainable management of water resources in all sectors	・Rate of groundwater exploitation ・Water use (by sector), availability, and proportions recycled ・Added-value of one cubic meter (by product, by sector)
Pollution (air, water and soil)	・Preserve the environment from all kinds of pollution ・Reduce respiratory illness ・Improve the mastering of green technologies ・Improve environmental management	・Greenhouse gas emission rate ・Rate of production of dangerous industrial waste ・Industrial waste recycling rate ・Investment realized for acquiring eco-friendly production technologies ・Number of ISO 14 001 certifications awarded to industrial companies
Biodiversity conservation	・Avoid damage to designated wildlife and protected species ・Maintain biodiversity, avoid irreversible losses	・Reported levels of damage to designated sites or species ・Reported conditions of important wildlife sites, national parks, etc.
Employment and poverty	・Ensure job opportunities for various categories of the population ・Reduce poverty ・Promote sustainable job opportunities that can guarantee a stable social climate	・Poverty rate ・Number of newly established companies ・Variety of sectors involved in job opportunity creation
Distribution of benefits and damages	・Ensure a good spatial distribution of the benefits and damages ・Ensure a good distribution of the benefits and damages between currently living population and future generations	・Amount of investment done for improving economic activities outside of regional capitals ・Amount of investment done for improving the accessibility of remote areas

Source: JICA Expert Team

S2411 Within the framework of SEA, the **assessment of alternative scenarios** is made in broad terms against the environmental priority criteria. In order to build a relevant comparison on both spatial and time frameworks, indirect, cumulative, short-, medium- and long-term effects have to be assessed. Regarding the other aspects of the evaluation and comparison of scenarios, that is to say from the economic and social aspects, as well as a general summary of the three aspects (see S2203). The following table shows the results of the comparison of scenarios through environmental priority criteria.

Comparison of scenarios through environmental priority criteria

	Scenario 1: Private initiative/ cluster development					Scenario 2: Private initiative/ concentrated development					Scenario 3: Public initiative/ cluster development				
	General impact	Short term	Mid term	Long term	Comment	General impact	Short term	Mid term	Long term	Comment	General impact	Short term	Mid term	Long term	Comment
Water resource depletion	A-	C-	B-	A-	The spatial spreading of the development all over the region will create the need to build new infrastructures for economic activities and for human dwellings. Spreading activities will be problematic in the places where the water resource is already rare or overexploited, especially in the South-West, where the sustainability of the water resource is seriously threatened. Thus, more and more shallow aquifer desalination plants will have to be built to support the needs of industrial developments and of consequent urbanization on the long term, and this will have colossal financial and environmental costs.	B+	B+	C+	C-	The concentration of the developments on the coastal strip will lead to the increase of the water demand in a region where the renewable water resource is already broadly overexploited and even forbidden to draw. There will thus be a necessity to switch to new forms of water resource, and the proximity of the Mediterranean Sea will provide almost unlimited possibilities of water supply through the building of new seawater desalination plants. However, on the long term, there is a risk that the high concentration of all types of activities and the consequent urbanization might threaten the ecological balance of human dwellings and that the capacity of water supply management might be exceeded.	B+	B+	B+	B+	Based not only on the newest desalination technologies but also on the requalification of the traditional water conservation systems such as Jessours, public administration will use its strong commitment to elaborate a long-term planning, in terms of quality and quantity, of the water resource, will help to build a relevant framework for sustainable use and management of this natural resource. Since the greatest economic growth is expected on the mid/long term, there is a hope that sustainable solutions in terms of natural resource management will be found gradually together with the economic and social considerations.
Pollution (air, water and soil)	B-	C-	B-	B-	The dispersion of industries in the rural areas will make the control and regulation of the wastes and discharges of all the polluting units more difficult. In addition, the distance created between production, transformation and export centres will lead to the increase of travels by cars or trucks and consequently to an increase of pollution and CO2 emissions.	C+	C+	C+	C-	In the short term, pollution control and depollution can be promoted among industrial clusters as they are concentrated in the coastal areas with comparatively larger companies. Besides, in the long term, it will become difficult to attain thorough pollution control because of scattered cluster distribution over the Southern Region with small companies.	C+	C-	C+	B+	Public administration can encourage companies in industrial clusters to control pollution and depollute existing contamination with strong involvement, while the efforts on pollution control have to spread over the Southern Region. In the short term public administration will face difficulty due to the scattered cluster development. In the long term, however, pollution control is expected to be well organised because clusters are to be fully developed with agglomeration of similar companies.
Biodiversity conservation	B-	C-	B-	B-	Uncontrolled discharge, in rivers and wadis, of chemical pollutants from dispersed industries, as well as increased road traffic might cause disturbance of the fauna and flora of the whole region.	C-	C+	C+	B-	The construction of numerous desalination plants on the shoreline might lead, in the long term, to the disturbance of the fragile coastal wetlands and on the marine biodiversity, because of both the construction of the infrastructure itself, but also the discharge of high salinity brine to the natural environment.	B+	B+	B+	B+	The planning of clusters by the public administration will allow to take into consideration the environmental sensibility of every parts of the region, and thus, make specific arrangements to ensure that there will be no loss of biodiversity or habitats.

	Scenario 1: Private initiative/ cluster development					Scenario 2: Private initiative/ concentrated development					Scenario 3: Public initiative/ cluster development				
	General impact	Short term	Mid term	Long term	Comment	General impact	Short term	Mid term	Long term	Comment	General impact	Short term	Mid term	Long term	Comment
Employment and poverty	C+	C+	C+	B+	This scenario can generate positive impacts, but it needs to be qualified. Indeed, let private investors take care of development can lead to bad strategic choices in terms of economic benefits and jobs creation. It is highly possible that sectors that only have little impact in terms of local employment, such as the extraction of oil or gas, are favoured by private investors.	B+	B+	B+	C+	The concentration of development can, in coastal areas, guarantee efficient job and wealth creation in the short term, particularly because of the availability and proximity of various functions in the urban area. However, it would be difficult to expand development over inland areas in the long term.	B+	C+	B+	B+	Thanks to the planning efforts of public administration, wealth creation by the private sector will benefit most effectively to job creation in the long term. Furthermore, the focus on R&D will notably promote the emergence of innovative sectors and new type of jobs.
Distribution of benefits and damages	C+	C+	C+	B+	This scenario may have positive impacts, but it needs to be qualified. Indeed, the spatial dispersion of the developments will benefit a large part of the southern Tunisian areas, regardless whether coastal or Saharan. However, giving priority to the market with minimal public intervention could lead to an unequal spatial development which benefits only the territories that have a successful economy. Without solidarity mechanism, landlocked areas or areas with reduced economic activity would be excluded from development.	A-	A-	B-	C-	The concentration of activities on the coastal area may lead to a bad distribution of positive economic impacts, benefiting an urban minority located on the east coast, while the populations of the interior and the West will be set aside the development. Although an extension to these areas is planned and thus limit the bad distribution on the long-term, it is conceivable that corporate headquarters and initiative remain concentrated in the coastal zone, limiting the rise of inland regions.	B+	C+	B+	B+	Inter-sectoral and inter-regional cluster planning will ensure both the emergence of flourishing economic activities in the interior regions as well as in the coastal regions, but also, thanks to the monitoring by the public administration, the regional disparities might be levelled through solidarity mechanisms which will ensure to the most deprived areas a minimum infrastructure development.

A+/-: Remarkable Positive/Serious Negative Impact is predicted.
B+/-: Positive/Negative Impact is expected to some extent.
C: Extent of Impact is unknown. (A further examination is needed and the impact could be defined as study progresses.)
D: Impact is very small or nil and further survey is not required.

Source: JICA Expert Team

S2412 The following table shows the summary of the results of **the evaluation of direct, indirect and cumulative impacts for all the concerned sectors**

Summary of the results of the evaluation of direct, indirect and cumulative impacts

		Sectorial development strategies			Infrastructure development strategies
		Agricultural development	Industrial development	Tourism development	Transportation infrastructure
Priority criteria	Water resource depletion	B+	A-	B-	D
	Pollution (air, water and soil)	B+	B+	D	C-
	Biodiversity conservation	B-	B+	B+	B-
	Employment and poverty	A+	B+	B+	A+
	Distribution of benefits and damages	B+	C+	A+	A+
Other criteria	Waste management	A+	n	(D)	n
	Noise and vibration	(D)	C-	(D)	B-
	Offensive odors	C+	B+	(D)	(D)
	Geology, topography, soil	n	(D)	B-	n
	Hydrology, hydric erosion	n	(D)	n	n
	Protected area	B-	D	D	C-
	Involuntary resettlement	B-	B-	D	B-
	Social institutions	(D)	(D)	B+	A+
	Indigenous or ethnic minorities	(D)	B-	A+	(D)
	Local conflicts of interest	B+	B-	n	(D)
	Gender	(D)	(D)	B+	(D)
	Children's right	(D)	n	(D)	(D)
	Cultural heritage	(D)	(D)	A+	(D)
	Landscape	A+	B-	A+	B-
	Working conditions	(D)	n	(D)	n

Note: A+/-: Remarkable Positive/Serious Negative Impact is predicted.
B+/-: Positive/Negative Impact is expected to some extent.
C: Extent of Impact is unknown. (A further examination is needed and the impact could be defined as study progresses.)
D: Impact is very small or nil and further survey is not required.
(D): Impact considered very small or nil in the impact prediction matrix.
n: Not relevant.

Source: JICA Expert Team

S2413 **Major mitigation measures** against potential negative impacts are as follows.

Major mitigation measures

Affected item	Potential direct, indirect or cumulative impact	Impact level	Mitigation or amplification measures	Predicted efficiency
Agriculture, fishery, livestock breeding and food processing sector				
Biodiversity conservation	Implicit promotion of usual intensive fishing practices imperils marine biodiversity.	(-) high	Small-scale and sustainable fishing practices made possible for example by artificial reefs (especially by the JICA project in the region of Zarat and Sfax implemented in the years 2007/2008) have shown very good results in terms of quality and the resurgence of rare and almost extinct species. The economic shortfall here can be solved by giving added value in terms of agro-tourism (small village of fishermen). Considering the serious situation of fishery resources in the whole Mediterranean Sea, the switch to a sustainable fishing model at the scale of Southern Tunisia shall be properly evaluated.	(+) average
Protected area	The expansion of fish and shrimp farms might disturb the fragile ecosystems of the Ramsar sites.	(-) high	There is a need to promote change from an intensive aquaculture model to a more sustainable form of aquaculture. In geographical terms, the surroundings of Ramsar sites shall be subject to stronger protective measures for newcomer aquaculture farms.	(+) average
Land tenure issues	The establishment of a law permitting the expansion of a date cultivation area might encourage a trend of more generalized land speculation.	(-) high	One of the general objectives of the strategies in the agricultural sector is the increase of value-added. It might be interesting to find ways to achieve this without exploiting the possibility of an increased cultivated area. Expansion of surface implies several drawbacks such as the extension of networks, natural land consumption, etc. Added value can be increased through the densification and verification of production of existing date production plots, for example, by adding fruit trees or vegetables (realization of 3-layered oasis). Thus, the reward for using drop irrigation planned in the law would rather be to give the opportunity to easily access other forms of crops to mix with the date trees (free supply of seeds, training of farmers by GDA, etc.)	(+) high
Mining and other industrial sectors				
Ground water depletion	No measures are planned to reduce groundwater depletion for the current and planned industrial facilities.	**(-) very high**	Mining operations often require large quantities of water to remove dust and separate and treat the ore. This can greatly increase the demand for water in a region where water resources are extremely limited. Furthermore, the installation of new enterprises and service industries attracted in the region by the mining activity would also contribute to an increase in the demand for water. Some simple measures might be taken, at the scales of both the region and the industrial zone, to ensure the conservation of water resources. Some of them might include the collection and use of rainwater via small storage dams constructed inside the site of the mine and the increase of underground aquifer recharge potential by the creation of artificial wetlands and green spaces. Regarding the textile industry, another big water consumer, some technical measures such as the reuse of wash water from the rubbing of spinning or dyeing liquids can be taken for water resource preservation.	(+) high

Affected item	Potential direct, indirect or cumulative impact	Impact level	Mitigation or amplification measures	Predicted efficiency
Indigenous or ethnic minorities	The indigenous and ethnic minorities are not considered in the planned new mining developments.	(-) high	The development of a new mining activity on a large piece of land might disregard specific local concerns or neglect the rights of indigenous minorities. For example, the nomadic populations, which may be temporarily away from an area when the decisions are taken, can be forgotten in the consultation process. There is a need for analysing the transhumance corridors and periods in order to integrate the nomadic communities into the decision-process.	(+) high
Landscape	There are no plans for conserving landscapes in the planned mining developments.	**(-) very high**	The mining industry has a major impact on the landscape, especially with changes in landforms, excavations, dumps, and heaps of waste. All of these tend to be spotted more clearly in flat arid regions because of the absence of dense vegetation. After the exploitation of the mine, the restoration of the natural sites as they were before shall be made mandatory, particularly in the management plan of industries willing to settle in the arid region of Southern Tunisia.	(+) high
Local conflicts of interest	Serious and perennial conflicts of interest between investors and population might arise in any of the planned industrial developments; hence, social conflict may block the developments.	(-) high	There is a need for introducing participatory planning approaches in order to ensure harmonious corporate-community relations for co-planning and monitoring. The participatory planning tools might include community forums (multi-stakeholder community groups gatherings), good neighbour agreements (co-produced commitments constructed and agreed between companies and communities), participatory budgeting (process in which local communities contribute to decisions regarding the allocation and monitoring of expenditures of company resources allocated for community development), etc.	(+) high

Source: JICA Expert Team

S2414 The **monitoring plan** shown in the table is proposed. The following sets of indicators have been prepared by Tunisian authorities for environmental monitoring. The JICA Expert Team recommends that these indicators be applied for the implementation of the proposed monitoring plan.

IND-1: Indicators of Sustainable Development in Tunisia (ANPE, 2014)
IND-2: Regional Indicators of Improvement of Living Conditions (ANPE, 2010)
IND-3: Indicators for Sustainable Management of Water Resources (ANPE, 2009)
IND-4: Environmental indicators (ANPE, 2008)
IND-5: Indicators of Sustainable Industry (ANPE, 2006)
IND-6: Indicators of Sustainable Tourism (ANPE, 2010)

S2415 Despite the expectations and the favourable climate for environmental consideration since the adoption of the new Constitution, there has been no recent implementation of any new experiences of SEA in the country. On the basis of the results of the current SEA, the importance of **pursuing experiments of SEA** from the perspective of institutionalizing this tool in Tunisia has to be reaffirmed in order to organize sectoral developments and spatial planning of the country in a harmonious and sustainable way.

Major mitigation measures

Affected item	Major potential impact / mitigation or amplification measure	Indicator	Definition	Frequency	Source of data	Nature
Water resource depletion	Reduction of water consumption / establishment of sustainable use of water resource in agricultural sectors	Share of irrigated farmland equipped with water-saving technology (IND-1)	This indicator measures the proportion of irrigated agricultural land equipped with water-saving technology (sprinkling, enhanced and localized gravity systems, drip irrigation etc.) on the total of irrigated agricultural lands.	Yearly	GDA / CRDA	Response
		Added-value of one cubic meter allocated in irrigated agriculture (IND-1)	This indicator measures the contribution of irrigation water on agricultural production: net added-value of irrigated agriculture / irrigation water consumption. It is expressed in TND / m3.	Every 2 years	GDA / CRDA	Response
	Reduction of water consumption / establishment of sustainable use of water resource in mining and industrial sectors	Intensity of water use in the industrial sector (IND-5)	This indicator measures the water consumption required for the manufacture of a product. It is the ratio between the water consumption of the industrial sector and its added value expressed at factor cost (constant prices 1990).	Yearly	DGRE	Pressure / Response
	Reduction of water consumption / establishment of sustainable use of water resource in tourism sector	Water consumption in cubic meters per tourist per night (IND-6)	This indicator measures the water consumption of tourists staying over night in accomodation facilities. It covers drinking water used for showers and bath, water for swimming pools, and irrigation water for green spaces and gulf courses (the two last components are often covered by treated water).	Yearly	ONAS / INS	Pressure
Pollution (air, water and soil)	Reduction of all kinds of industrial pollution	Greenhouse gas emission (IND-5)	This indicator measures the emission of greenhouse gas.	Yearly	Réseau National de Surveillance de la Qualité de l'Air (ANPE)	State
		Industrial waste recycling rate (IND-5)	This indicator measures the rate of recycled industrial waste on the total industrial waste.	Yearly	ANGED	Response
		Pollution load in treated industrial water	This indicator measures the amount of various polluants in the industrial treated water discharged by ONAS waste water treatment plansts and industrial zones in the environment.	Yearly	ONAS / Groupe Chimique etc.	Pressure / Response
	Establishment of environmental management on the long term	Investments made for the acquisition of green industrial production technologies through number of beneficiaries and amount of FODEP subvention (IND-5)	This indicator measures the investments made for the acquisition of green industrial production technologies, by showing the number of beneficiaries of ANPE Depollution Fund (FODEP: FOnd de DEPollution) as well as the amounts of grants allocated and of self-financing by the companies.	Yearly	ANPE	Response
		Proportion of ISO 14001 certified companies (IND-2 & 5)	This indicator measures the number of industrial companies having suceeded is obtaining the certification of environmental management standards ISO 14001.	Yearly	INNORPI	Response

Affected item	Major potential impact / mitigation or amplification measure	Indicator	Definition	Frequency	Source of data	Nature
Biodiversity conservation	Limitation of use of generic varieties / divertification of varieties of fruits and vegetables	Number of varieties of fruits and vegetables of local origin put on the market	This indicator measures the diversity of varieties of fruits and vegetables put on the market by famers through the inventory of their number.	Yearly	UTAP / interprofessional groups (GIFruits, GIL)	State
	Limitation of intensive fishing practices / establishment of sustainable fishing practices	Number of artificial reefs operation for sustainable fishery undegone	This indicator measures the number of artificial reefs newly created in the perpective of establishing sustainable fishing practices.	Every 5 years	APAL	Response
Protected area	Limitation of the negative indirect impacts of fish and shrimp farms on Ramsar sites	Number of Integrated multi-trophic aquaculture (ITMA) famrs created in the surroundings of Ramsar sites	This indicator measures the number of Integrated multi-trophic aquaculture (ITMA) famrs newly established in the surroundings of Ramsar sites.	Every 2 years	MARH, Centre Technique d' Aquaculture	Response
Land tenure issues	Reduction of land speculation and consumption in dates agriculture / improvement of crop densification	Surface of dates production fields changed into multi-production 3-layered oasis	This indicator measures the surface of dates production fields changed into multi-production 3-layered oasis.	Every 5 years	GDA / CRDA	Response
Landscape	Reduction of the destruction of natural landcapes / improvement of site rehabilitation in the mining sector	Number of sites restaured after mining exploitation	This indicator measures the number of mining sites restaured to natural environment after the end of the exploitation by the mining company.	Every 2 years	Office National des Mines (ONM)	Response
Local conflicts of interest	Reduction of social conflicts / establishment of participatory planning for mining and industrial sectors	Number of mining and industrial facilities created through a participatory planning process	This indicator measures the number of mining and industrial facilities created through a participatory planning process.	Every 2 years	Ministère de l'Industrie, de l'Energie et des Mines	Response

Source: JICA Expert Team

S2416 From the experience of the current SEA, which was based on the extremely vast territory of the six governorates of southern Tunisia and which attempted to evaluate with limited means of almost all development sectors, the recommendation is to opt for a multi-sector global programming accompanied by **a new "Detail SEA"** focused on the areas whose planned development is the most intense. Such an approach would benefit the subsequent phases of development and the Southern Regional spatial planning and would be appropriate in view of the complexity and overlapping of the planned operations.

Two detailed SEAs of the "Gabès gulf and Jeffara plain" and "Chott region and Gafsa" are proposed. **General descriptions** of the two Detail SEAs are given below.

General description of the SEA of Gabès gulf and Jeffara plain

Concerned environmental component	Major developments representing a challenge for the region	Term	Remark
Marin environment of Gabès gulf	- Construction of 4 large-capacity desalination plants	Long term	Under current plans, SEA Gulf of Gabès gulf and Jeffara plain are to seek the most harmonious arrangement possible for the numerous operations that are programmed, both on the coastline, which will include the construction of large seawater desalination plants and the expansion of ports, and in the hinterland, which will be crossed by new large-scale transport infrastructure that will need to be integrated without constituting fragmentations. Special attention has to be given to particularly vulnerable ecosystems such as that of the gulf of Boughrara and the marine environment in general, which is already threatened by overfishing and different types of pollution[2]. Various technical studies on spatial impacts of developments are expected to help decision-making for identifying of concrete alternatives (spatial modelling of various brine discharges from desalination plants, analysis of cumulative effects on the marine environment, analysis of the sensitivity to desertification, etc.).
	- Development of Gabès and Zarzis ports for exportation	Long term	
	- Bridge between Jorf and Ajim (Djerba island)	Long term	
Land environment of Jeffara plain	- Trans Maghreb high-speed railway	Pending	
	- Highway from Sfax to the Libyan border	Short term	
	- New airport in Tataouine	Long term	

Source: JICA Expert Team

General description of the SEA of the Chott region and Gafsa

Concerned environmental component	Major developments representing a challenge for the region	Term	Remark
Chott, oasis areas, mountains of Gafsa	- Railroad crossing the Chott between Kébili and Tozeur	Pending	Under current plans, the SEA of the Chott region and Gafsa will try to organize the emergence of many production poles and the creation of new communication routes (especially railway tracks) while ensuring the maintenance of water balance and integrity of the classified wetland of the Chott el Jerid. The SEA will be an opportunity to address protection measures and the management plan for the Ramsar site. Various technical studies on the spatial implications of developments (including geo-hydraulic dynamic) are expected to help decision-making for identifying concrete alternatives. Particular attention is to be given to the sustainable management of water resources, especially in the context of scarcity and with the proposed expansion of the phosphate mining that threatens the resources and causes already notorious pollution problems.
	- New developments of phosphate mining	Long-term	
	- Assumed expansion of oasis culture surfaces	Mid-term	
	- Date processing centres	Short term	

Source: JICA Expert Team

Following are the **specific objectives of the Detail SEAs**:

[2] In our study, the Gulf of Gabès was found to be a "critical industrial pollution pocket" from the diagnostic phase. As a short-term priority and a priority above all other new developments, the study recommended the depollution of affected areas to ensure the most human development possible. Depollution is the subject of the "Project of environmental local governance of the industrial activity of Gabès," a big dedicated project launched by the European Union in parallel to our study. With a budget of over DT 11 million for a period of 4 years, the project crystallizes all the expectations in terms of mobilization of actors and technical responses to pollution. The Detail SEA may be able to provide technical answers to questions still pending at that time.

- To improve project planning based on extensive expertise and a transparent and profitable collaboration within an iterative process;
- To program development projects in harmony with the environmental and sustainable development policies at national and regional levels;
- To examine development projects planned in areas designated for a comprehensive and integrated manner with a view to sustainable development;
- To make a comprehensive and integrated assessment of long-term environmental and socio-economic projects programmed in designated areas;
- To highlight cumulative impacts of all the projects and propose mitigation measures and corresponding compensation measures;
- To offer development alternatives in the designated regions more in tune with regional characteristics and predefined development goals, if necessary;
- To pursue the institutionalization process of SEA in Tunisia

For the proposed Detail SEA, it seems interesting that the Tunisian State supports the initiative through the Ministry of Environment and Sustainable Development. Even in a context of decentralisation, it seems proper that the arrangement of the big projects be processed and approved at the highest national level to ensure that the conclusions of the SEA be followed by the concerned public authorities. MDICI and MEHAT could provide advisory support at the national level, while ODS could animate public consultations at the regional level with all stakeholders, governments, and private sector entities involved in the various projects planned.

5. TARGET OF THE DEVELOPMENT OF THE SOUTHERN REGION

S2501 The following indicators are applied as the **target indicators** for the attainment of implementation of the development strategies and plans of the Southern Region to be used to monitor the attainments of the development goal and vision at the implementation stage.

Development goal: **Per capita household consumption** of the Southeast, Southwest, and Southern Regions, as well as the average for all of Tunisia

This target indicator is selected in light of the indicator's suitability for showing the economic level of the region and the ease of monitoring the indicator under the comprehensive study conducted by the National Institute of Statistics (INS) once every five years.

Development vision:

While the development vision has three objectives, namely, 1) high value-added production, 2) job creation, and 3) sustainable development, no target indicator is set for the first because value-added in the Southern Region is not estimated. Target indicators are set only for the other two.

a) *For job creation;*

Number of jobs created per economically active person, a metric comprising directly created and indirectly induced jobs through the implementation of proposed strategies and plans, as well as increased jobs even without implementation

This target indicator is well monitored every year and the information is released by the governorate. If economically active persons take all created jobs, the unemployment rate will be reduced exactly as this figure increases.

b) *For sustainable development;*

i) **volume of groundwater use against** safe yield or recharged water of the aquifers, and

ii) **ratio of installed power generation capacity using renewable energy in the Southern Region to the total power generation capacity of Tunisia**

Among various possible target indicators for sustainable development, the Project has selected those i) closely related to the attainment of the development strategies, plans, and action plans and those ii) whose values can be monitored or collected regularly. Considering mainly the strategies/plans/action plans of the productive sectors and crosscutting issues, target indicators related to a) pollution control, b) environmental conservation, c) water resources (i.e., groundwater in the Southern Region) management, and d) renewable energy were examined. The target indicators of the former two (indicators a) and b) above), however, as not set, since both target compliance with all regulations/norms/standards. As the target must be followed without any exception, no target values are set. JET proposes implementation-related strategies/plans/ action plans and regular monitoring to obey the regulations/norms/standards strictly.

S2502 **Average per capita consumption** of the Southeast, Southwest, and other regions of Tunisia in 2000, 2005, and 2010 is shown in the following table. The gap between the averages for Southern Region and Tunisia was substantially narrowed during the period from 2000 to 2005 and the gap between those of the Southeast and thee Southwest Regions were widened during the same period. These gaps have persistently remained since.

Per capita household consumption by region in 2000, 2005 and 2010

(Unit DT./person/year at constant prices of 2005)

	2000	2005	2010
Great Tunis	2,000	2,331	2,624
North East	1,320	1,547	1,718
North West	1,127	1,292	1,311
Centre East	1,707	1,902	2,189
Centre West	968	1,034	1,212
South East	**1,126**	**1,574**	**1,787**
(Ratio to Tunisia)	*(78%)*	*(93%)*	*(93%)*
South West	**1,068**	**1,338**	**1,507**
(Ratio to Tunisia)	*(74%)*	*(79%)*	*(79%)*
South	**1,104**	**1,484**	**1,681**
(Ratio to Tunisia)	*(77%)*	*(88%)*	*(88%)*
Tunisia	**1,441**	**1,696**	**1,919**

Source: Elaborated by the JICA Expert Team

S2503 The latest data available on **employment conditions in the Southern Region** and its governorates is given in the below table. The unemployment rate of the Southern Region was 6.5% higher than the average for Tunisia. The unemployment rates of Gafsa and Tataouine Governorate were somewhat higher, while that of Médenine was comparatively lower and close to the Tunisian average.

Employment conditions in the Southern Regions and its governorate in 2010

	Tunisia	Southern Region	Gabès	Médenine	Tataouine	Gafsa	Tozeur	Kébili
Population	10,570,700	1,564,376	362,788	460,193	147,291	339,300	104,700	150,104
Population aged 15 or more	8,078,900	1,061,707	247,855	309,756	98,732	242,489	75,100	108,298
Economically active population	3,769,238	476,656	112,054	137,488	37,172	106,600	35,936	47,406
Occupied population	3,277,395	383,910	91,732	118,377	28,390	76,471	29,834	39,106
Unemployed	491,843	92,746	20,322	19,111	8,782	30,129	6,102	8,300
Unemployed (%)	13.0%	19.5%	18.1%	13.9%	23.6%	28.3%	17.0%	17.5%
Jobs per economic-ally active person*	0.87	0.81	0.82	0.86	0.76	0.72	0.83	0.82

Source: Le Sud Tunisien en chiffres 2013

S2504 Regarding **utilisation of the groundwater resource**, Southern Tunisia has 57 groundwater aquifers, 38 of which are under-exploited, five of which are in balance, and 14 of which are overexploited. Over-exploitation can be seen all over the region, except in Tataouine and Kébili.

General situation of exploitation of groundwater in Southern Region (2010)

	Groundwater table				Dry res. (g/l)		Resour. Mm3 /y	Expl. Mm3 /y	Avail Rs Mm3 /y	Deficit Mm3 /an	Expl. rate %
	Undr expl.	Bala nced	Over expl.	Total	min	max					
Tataouine	8	3	0	11	1.5	13	15.14	9.36	5.88	0.1	62
Medenine	9	1	4	14	2.5	8.5	12.67	12.97	2.08	2.38	102
Gabes	5	0	2	7	1	12	23.7	25.1	4.8	6.2	106
South East	**22**	**4**	**6**	**32**	**1.67**	**11.17**	**51.51**	**47.43**	**12.76**	**8.68**	**90**
Kebili	7	0	0	7	0.5	18.8	5.49	0.26	5.23	0	5
Tozeur	2	0	3	5	1	10	34.08	34.62	3.13	3.67	102
Gafsa	7	1	5	13	0.8	14	33.3	35.84	3.63	6.17	108
South West	**16**	**1**	**8**	**25**	**0.77**	**14.27**	**72.87**	**70.72**	**11.99**	**9.84**	**71.67**
TOTAL	**38**	**5**	**14**	**57**	**1.22**	**12.72**	**124.38**	**118.15**	**24.75**	**18.52**	**80.83**

(Source : DGRE)

S2505 The total power generation capacity in Tunisia was 4,483 MW in 2013 and is estimated to reach 5,290 MW in 2015. The capacity of power plants using renewable energy in the Southern Region in 2015 is estimated as 64 MW. The share of power plant capacity installed in the Southern Region to the total capacity of power plants in Tunisia in 2015 is estimated as 1.2%.

S2506 The following jobs are expected to be created:

a) Job created directly through the implementation of proposed strategies, plans, and action plans
b) Newly created jobs induced by the increased jobs of a) above
c) Increase in jobs unrelated to the implementation of proposed strategies, plans, and action plans

S2507 The below table shows the numbers of jobs created through the implementation of development strategies, plans, and action plans of the target productive sectors. Around 51,790 jobs are expected to be created as a direct effect of implementation of the strategies and plans. Of those newly created jobs, two-thirds are expected to be created in the Southeast Region and one-third are expected to be created in the Southwest Region. Around 44% of the jobs are to be created

for the period from 2015 to 2025 and the remaining 56 % are to be created for the period from 2026 to 2035.

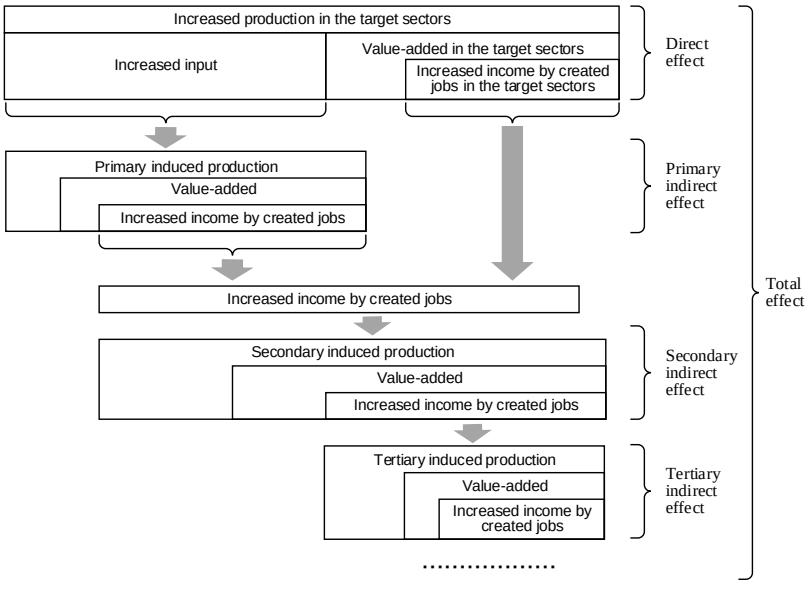
Number of jobs created through the implementation of development strategies, plans, and action plans

(Unit: number of jobs)

Target productive sectors		Southern Region	Gabès	Médenine	Tataouine	Gafsa	Tozeur	Kébili
Agriculture, fishery and agro-fishery processing	2015-25	5,960	970	1,220	820	760	890	1,290
	2026-35	8,930	1,450	1,840	1,220	1,150	1,340	1,940
	Total	14,890	2,420	3,060	2,040	1,910	2,230	3,230
Mining, other industry	2015-25	5,840	1,660	1,160	980	1,280	440	320
	2026-35	8,760	2,490	1,740	1,470	1,920	660	480
	Total	14,600	4,150	2,900	2,450	3,200	1,100	800
Renewable energy	2015-25	1,740	1,200	0	160	370		10
	2026-35	3,350	2,320	0	310	710		20
	Total	5,090	3,520	0	470	1,080		30
Tourism	2015-25	5,450	200	4,170	50	610		420
	2026-35	7,160	300	5,240	80	910		630
	Total	12,610	500	9,410	130	1,520		1,050
Handicraft	2015-25	1,980	70	1,520	20	220		150
	2026-35	2,610	110	1,910	30	330		230
	Total	4,600	180	3,430	50	550		380
Total	2015-25	20,970	4,100	8,070	2,030	4,570		2,160
	2026-35	30,810	4,350	10,730	2,800	7,020		3,250
	Total	51,790	10,770	18,800	5,140	11,590		5,410

Source: JICA Expert Team

S2508 As the **indirectly induced jobs**, the table below shows the estimates of the following using the input-output table of Tunisia: i) induced jobs to produce required input for directly increased production through the implementation of the strategies and plans proposed by the Project, and ii) induced jobs to meet the final consumption induced by increased income though jobs directly and indirectly increased.



Source: JICA Expert Team

Estimation of economic effects of implementation of the development strategies, plans and action plans

Around 1.34 times of jobs created as direct effects is expected to be induced indirectly. Besides, induced jobs can be estimated at around 3.08 jobs for a created job directly by the implementation of strategies and plans of tourism sector.

The induced jobs will not necessarily take place in the same locations as the directly created jobs by the implementation of the strategies and plans. JET assumes that the induced jobs are distributed in proportion to numbers of economically active persons, of which around 62% will live in the South-east and around 38% in the South-west.

S2509 In addition to the directly and indirectly created by the implementation of the strategies and plans proposed by the Project, JET assumes that **other job creation irrelevant to the strategy/plan implementation** is expected to occur due to the remarkable economic growth and decrease in unemployment rate of Tunisia estimated in the planning period. Numbers of jobs to reduce the unemployment by 0.1% every year are estimated all over the Southern Region.

S2510 **The numbers of increased job per economically active person,** as well as the unemployment rates in a scenario where all increased jobs are taken by economically active persons, are estimated as shown in the table below. For the period from 2015 to 2025, the number of increased job for an economically active person of Tunisia is larger than those of the Southern Region, South-east and South-west Regions, however the figure for Tunisia for the period from 2026 to 2035 is smaller than those of the Southern, South-east and South-west Regions. The gap in the unemployment between Tunisia and the Southern Region will be 4.0% in 2015 and is to widen to 5.0% by 2025. The gap is expected to start to narrow drastically from 2026, however, and to shrink to only 0.3% by 2035. As for the disparity within the Southern Region, it is estimated that unemployment rate (in case of all jobs occupied) of the South-east region is 2.6% smaller than that of South-west Regions in 2015. The gap will slightly increase to 2.8% by 2025 and then continue to increase to 3.6% by 2035. It would be necessary for the public administration to encourage job creation in the Southwest Region as much as possible.

Note that the achievement of created jobs per economically active person and the unemployment rate (when all jobs are taken) will depend not only on the number of jobs created but also the number of economically active persons. The number of economically active persons should also be carefully monitored when the attainment of the target indicator is measured.

Numbers of increased jobs per economically active person of
Tunisia and the Southern Region in 2015-25 and 2026-35

		Tunisia	**South**	**South-east**	**South-west**
2015	Economically active persons (2015) (thousand)	4,299.1	551.7	340.7	210.9
	Number of existing jobs (2015) (thousand)	3,658.5	447.6	279.9	167.7
	Unemployment rate (2015) (%)	14.9%	18.9%	17.9%	20.5%
	Number of jobs per economically active person (2015)	*0.851*	*0.811*	*0.821*	*0.795*
2015-2025	Economically active persons (thousand) (2025)	5,011.7	617.6	382.1	235.5
	Increased jobs (2015-25) (thousand)	706.7	59.2	37.9	21.3
	Number of increased jobs per economically active person (2015-25)	**0.141**	**0.096**	**0.099**	**0.090**
	Unemployment rate (2025) (%)	12.9%	17.9%	16.8%	19.7%

		Tunisia	South	South-east	South-west
2026-2035	Economically active persons (2035) (thousand)	5,443.0	670.5	414.9	255.7
	Increased jobs (2026-35) (thousand)	511.7	91.8	58.3	33.5
	Number of increased jobs per economically active person (2026-35)	**0.094**	**0.137**	**0.140**	**0.131**
	Unemployment rate (2035) (%)	10.4%	10.7%	9.4%	13.0%

Source: JICA Expert Team

S2511 The gap in per capita household consumption for a year between the Southern Region and Tunisia will widen until 2025 and is expected to narrow again afterward, while the gap between the Southeast and South-west Regions will narrow gradually during the target period. As can be seen below, after 2026, the household consumption per capita in the Southern Region, especially that of southwest regions, will grow faster than the Tunisian average.

Per capita household consumption for a year in 2025 and 2035

(Unit DT./person/year at constant prices of 2015)

year	2000	2005	2010	2025	2035
- South-east	1,745	2,440	2,770	4,488	7,143
Ration to Tunisia	78.1%	92.8%	93.1%	**89.0%**	**91.1%**
- South-west	1,655	2,074	2,336	4,118	6,812
Ration to Tunisia	74.1%	78.9%	78.5%	**81.7%**	**86.9%**
South	1,711	2,301	2,606	4,350	7,021
Ration to Tunisia	76.6%	87.5%	87.6%	**86.3%**	**89.5%**
Tunisia	2,234	2,629	2,974	5,041	7,840

Growth in per capita household consumption

year	2010	2025		2035	
	Value	Value	Ratio (2025/2010)	Value	Ratio (2035/2025)
- South-east	2,770	4,488	1.62	7,143	1.59
- South-west	2,336	4,118	1.76	6,812	1.65
South	2,606	4,350	1.67	7,021	1.61
Tunisia	2,974	5,041	1.69	7,840	1.56

Source: JICA Expert Team

S2512 As water resources are scarce in the Southern Region and water use is inevitable for development of the region, **sustainable use of water resources** is essential for sustainable development of the region. Targets are set separately for shallow groundwater (aquifers) and deep ground water (aquifers).

As deep fossil water is not rechargeable, the target for the aquifer, target for the deep aquifer should be set as "***Use of fossil water will not increase after 2030.***" Even before 2030, it would be better set the limit of increase, like 3%/year to encourage shifting to other water resources,

The target for the shallow aquifers can be "***Use of shallow groundwater should remain under the rechargeable volume.***" For setting appropriate and exact target value for each aquifer and for enabling effective management, i) to install or designate monitoring wells and ii) to conduct pumping tests or to monitor the water use of the aquifers should be implemented.

S2513 To contribute to the national target for use of renewable energy with advantageous conditions of the Southern Region, JET proposes the following target on use of renewable energy, considering the national targets, potential of renewable energy as well as transmission network capacity. As renewable energy is abundant all over the Southern Region, promotion of renewable energy use can contribute to job creation in areas where other employment opportunities are scarce.

Target for installed capacity of power generation with renewable energy

	Total installed capacity for Tunisia (A)	**National target for installed capacity for power generation with renewable energy**	**Target for the Southern Region (B)**	**(B) / (A)**
2015	5,290	218	63.9	1.2%
2025	8,170	1000	499.2	6.1%
2035	11,130	4,700	1,335.6	12%

Source: JICA Expert Team

6. RECOMMENDATIONS

S2601 During the public consultation (P/C) meetings, JICA Expert Team (JET) has been told by the participants that "Donors have formulated many plans, but none them has been implemented or realised. We need implementation."

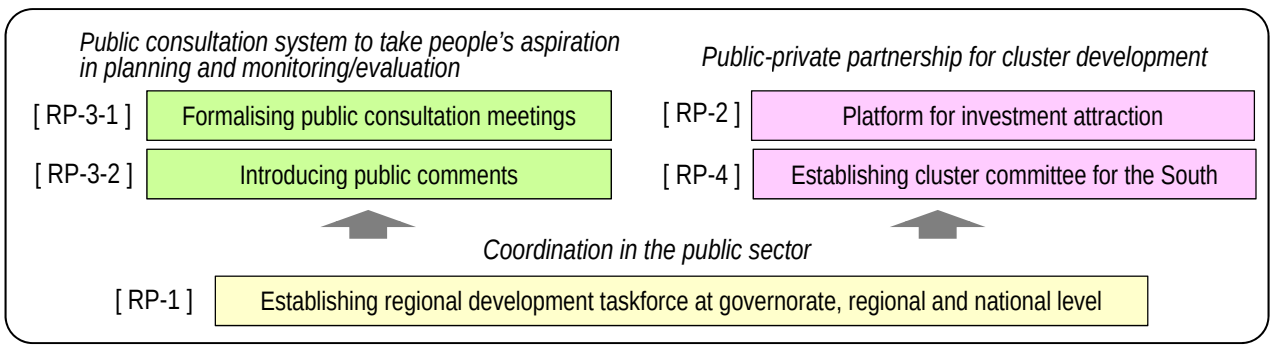
JET has tried to formulate realistic strategies, plans and action plans. However, before the implementation, the followings have to be done:

1) Following required decision-making procedure
2) Securing/allocating requited budgets

S2602 To carry out above 1), it is necessary to incorporate the short-term (5-years) plans and action plans proposed in this report into the next five-years economic and social development plan as suggested in the steering committee meetings. Since the national development plan is composed of i) global plan, ii) sector plans, and iii) regional plans, short term plans and action plans have to be included in the related sector plans and the Southern Region plan. It is requested for MDICI and ODS to explain to related ministries and state agencies as well as governors and regional council members contents and rationale of the short-term plans and action plans proposed by the Project. For this purpose, JET has prepared a brochure and the attachment for the quick reference by decision-makers. It is recommended to use them.

S2603 To execute the above 2), monitoring and evaluation (M/E) have to be regularly carried out for coordinated and synchronised implementation, a key element for integrated regional development. Results of the M/E have to be fed-back for the budget allocation of the next year, as recommended in Strategy RP-1 for regional development in general, and in Strategy RP-4 for cluster development specifically (see S2305). Appropriate budget allocation is essential for any public administration activities.

S2604 As Scenario 3 is selected, (see S2203 and S2204), the role of public administration organisations will be crucially important and the capacity of the public administration will determine the level to which the regional development is achieved. As the regional development involves various sectors, coordination among and capacity development of all related public administration organisations will be keenly necessary. Capacity development of all relevant organisations will take a long time and incur large costs. JET proposes the immediate establishment of a coordination mechanism for the united implementation by both the public and private sectors according the strategies proposed in S2304 and S2305.



Proposed coordination mechanism for the regional development

For the establishment of the above-mentioned coordination mechanism, MDICI and ODS have to start implementation of "RP-1: Establishing a coordination mechanism in the planning,

implementation and monitoring/evaluation of regional development" (more concretely, "Establishing a regional development taskforce at the governorate, regional, and national levels"). For a start, it would be better to officialise/legalise the coordination mechanism based on draft proposals prepared by the Project.

The functions/duties of MDICI and ODS for the coordination for regional development planning, implementation, monitoring, and evaluation should be clearly defined. For the coordination, MDICI/ODS have to discharge the following duties. The main roles of MDICI are coordination at the national level and supervision of the administration by ODS, while the main roles of ODS are coordination at the local, governorate, and regional levels and the administration of regional development planning, implementation, monitoring, and evaluation for the Southern Region.

i) Preparing definitions of coordination mechanisms, such as the functions and membership of the regional development taskforces, public consultation, and the procedure of the public comments
ii) Discussing the definitions with the Ministry of Interior (MI), Ministry of Finance (MF) and other related ministries and requesting the relevant authorities to approve of the definitions
iii) Organising the regional development taskforces, the public consultation members
iv) Managing the regional development planning/implementation/monitoring/evaluation, the public consultation meetings, and the public comments

It is important for the taskforces and public consultation meetings to have definite roles and functions in the coordination for regional development. The "regional development committees" are actually playing certain roles in the regional development planning for the national economic and social development plan. However, coordination mechanisms in monitoring, evaluating, and feeding back their results to subsequent implementation and planning has to be established rigidly. It will be necessary to reinforce the functions of the taskforces and the public consultation meetings in this regard. For the effective administration of the whole coordination mechanisms, the responsibilities and powers of MDICI/ODS have to be strengthened. MDICI/ODS have to request the relevant authority and obtain the required power and budget.

For the cluster development, the roles of MDICI/ODS are monitoring/evaluation and support to the cluster committees as a part of their duties for the administration of the regional development taskforces.

S2605 In order to establish and manage the coordination mechanisms effectively, the capacity development of MDICI/ODS is essentially important. As on-the-job training (OJT) would be the most effective approach for capacity development, MDICI/ODS can be advised to apply a technical cooperation project on an important element of the regional development with overall advisory services for administration of the whole coordination to an international development partner. As investment attraction is a critical factor for the successful regional development of the South and this job is included in the duties of MDICI/ODS, a technical cooperation project for this aspect can be proposed as recommended in RP-2.

Attachment to Executive Summary

Short-term Activities and Actions proposed by the Project
on Regional Development of the Southern Region in the Republic of Tunisia
to be Incorporated into the Next Five-year National Economic and Social Development

This document describes activities and actions to be taken for promotion of the productive sectors and development of the infrastructure sectors in the Southern Region for the period of 2015-2020, aiming at providing a reference for formulation of the next national five-year economic and social development plan.

1. Short-term Actions for Promotion of Productive Sectors

In the regional development plan formulated by the Project, development strategies are planned for the long-term (twenty-year as 2015-2035) while plans and action plans are formulated for medium- and short-term (ten-year as 2015-2025 and five-year as 2015-2020, respectively). After analyses of the current status of the productive sectors, i) agriculture, fishery, livestock breeding and food processing sector, ii) mining and other industrial sectors including renewable energy sector, iii) tourism sector and iv) handicraft sector were selected as target productive sectors for planning the development strategies, plans and action plans. For the infrastructure sectors, the development strategies, plans and action plans have been formulated for a) transport, b) water supply/wastewater treatment, c) power supply and d) telecommunications.

In Sections of 2.2.3-2.2.5 of Part 2 of the Main Report, five-year spatial development plans for sectors of the above i)-iii) have been descried while that for sector of the above vi) is described only Section 3.2.4 of Part 2 of the Main Report as the various handicraft production scatter all over the Southern Region and location specific actions are not proposed by the Project.

(1) Agriculture, fishery, livestock breeding and food processing sector

(a) Outline of development

It is important to appropriately prepare the facilities and infrastructures necessary for effective production and processing in the agricultural sector for the next twenty years and beyond. Research and development (R&D) centres in the region should also be developed for improvement in local production, new product development and market studies. In Gabès and Médenine as international gateway with seaports near the cities, implementation of infrastructure and facility development, such as those for transport and water/power supply, priority should be given to the existing or projected production areas and processing centres for wider marketing strategy including local, Libyan and Algerian markets before expansion of agro-production takes place in the region.

Reduction of regional disparity is the important aspect that makes earlier development actions to focus mainly in Gafsa, Tozeur, Kébili and Tataouine. Larger portion of products in the region would be still exported from Sfax or Rades in the short-term period (2015-20); however, the processing of dates and olive oil should be gradually shifted to the Southern Region to achieve value-added production, and to be strongly competitive in the world market. Possible greenhouse development sites for expansion of off-season vegetable production will be surveyed during this period as well. Earlier in this period, the R&D study for the strong regional product selection should be initiated for future establishment of production cluster in the Southern Region.

(b) Key development

- Existing or projected industrial and development poles/zones in Gabès are to be utilised as larger processing centres for processing of dairy products, red meat for domestic and Libyan markets), etc.
- Existing or projected industrial and development poles/zones in Médenine and Zarzis are to be utilised as larger processing centres for processing of olive oil, dairy products, red meat, etc.
- Processing centres have to be further developed in Kébili and Tozeur for more effective dates production and processing, and connection between production areas and processing centres has to be enhanced.
- Agricultural product distribution centre has to be developed in Gafsa for inter-regional (central and north Tunisia) and international agro-product transportation and logistics as Gafsa has been acting as the regional logistic area between the North, Central and Southern regions as well as Algerian markets.
- New land should be acquired for the large production centre development in Tataouine (outside of the city area) in order to establish processing facilities within ten-year period considering slaughter houses, leather processing and meat product processing.
- Border Posts in Hazoua in Tozeur Governorate and Dehiba in Tataouine Governorate are be upgraded, utilizing existing facilities for better trading with cities in Algeria and Libya.
- Border Post including dry port with refrigeration facility in Ben Guerdane is to be upgraded utilizing existing facility for larger trade service with Libyan market.
- Fish and shrimp farming areas and facilities near Djerba and Zarzis are planned to be expanded for larger production.
- Preparation for Zarzis container port development next to the existing bulk port for packaged agricultural product export is planned to start, aiming at completion of the port development as early as 15th project year.
- The poultry meat processing centre and egg distribution centre in south Zarzis is planned to be expanded for larger production considering both domestic and Libyan consumption.
- Research and development (R&D) centres are to be established or strengthened in Gafsa, Tozeur, Kébili, Tataouine and Médenine. Existing R&D centres are to be utilised for extended activities in agricultural R&D. In R&D Centres, marketing research as well as production technology and capital investment studies is planned to be conducted for products of respective governorates.

The figure in page ES-133 illustrates the first five-year spatial development plan in agriculture, fishery, livestock breeding and food processing sector.

(2) Mining and other industrial sectors including renewable energy sector

(a) Outline of development

Most importantly, the Gafsa and Gabès chemical industrial zones shall be de-polluted with introducing proper treatment system/technology. Major phosphate related processing centres in Gafsa and Gabès will continue serving, and the products will be exported from the Gabès port as well. However, upgrade of the bulk port facility may be necessary for shipping other products including construction

materials. Safety and environmental protection measures shall be taken for additional industrial development for food processing and export even though they should be set in distance. The size of the phosphate related chemical industry may not be largely expanded. Although current production of phosphate ore from Gafsa is stable, the production in the next twenty years will be decreasing; therefore, new phosphate mining site should be identified to supply the materials to the chemical manufacturers. Potential Tozeur mining site will be identified in this period for future development. Tataouine governorate area investment should be for development of new marble stone mining and expansion of the existing gypsum and limestone production mining sites. Tataouine should become a major mining region for construction materials, such as marble stone, gypsum and others for mass production and high quality designed products.

R&D for marketing and product improvement as well as vocational school type facility for the art & craft workers should be established for better production in the sector. Earlier in the short-term period, the R&D study for selection of the strong regional product should be initiated for future establishment of production cluster in the Southern Region.

(b) Key development

- De-pollution and treatment system installation in the chemical industries in Gabès and Gafsa shall be implemented.
- Existing industrial and development poles/zones in Gabès and Médenine will be utilised for larger processing centre development, such as construction materials and high-value designed architectural materials and other stone products.
- New land acquisition should be made for large processing centre development in Tataouine (outside of the urban area) in order to establish processing centre within ten year period considering marble stone, limestone and gypsum processing.
- Border Post in Hazoua, Tozeur and Dehiba, Tataouine will be established utilizing existing facilities for better trading with cities in Algeria and Libya.
- Border Post including dry port in Ben Guerdane will be upgraded utilizing existing facility for larger trade service with Libyan market.
- Preparation for Zarzis container port development next to the existing bulk port for construction material export will be started aiming at the completion of the port development in 15 years.
- Facility and infrastructure preparation to develop phosphate ore mining will be started in Tozeur and marble stone mining in Tataouine.
- R&D Centres will be established in Gafsa, Kébili and Tataouine for extended activities in mineral research and development as well as marketing and worker skill improvement program.

The figure in page ES-134 illustrates the five-year spatial development plan of mining and other industrial sectors.

(3) Tourism sector

(a) Outline of development

The sector is planned to be promoted with major strategies of i) creation and promotion of tourist destinations, ii) upgrading tourism services and iii) encouraging community based tourism (CBT). Firstly, establishing destination management organisation(s) (DMO) and CBT organisations (CBTO) as

well as establishing service standards has to be carried out. Secondly, capacity development of the related organisations and conservation of heritages has to follow. In the first five years, actions will be focussed on these preparatory ones, while already established destinations have to continue to be promoted in sustainable manners. During this period, in parallel with destination identification and creation, initial infrastructure necessary for regional tourism development, especially for economic development in inland areas, will be installed as a priority.

(b) Key development

- Institutional arrangement, such as establishing DMO and CBTO
- Preparation of necessary laws/regulations/standards
- Capacity development of related organisations and personnel
- Improvement of rural roads in inland area, particularly in vulnerable delegations in mountain area in Médenine, Gabès and Tataouine governorates

The figure in the page ES-135 illustrates first five-year spatial development plan in the tourism sector.

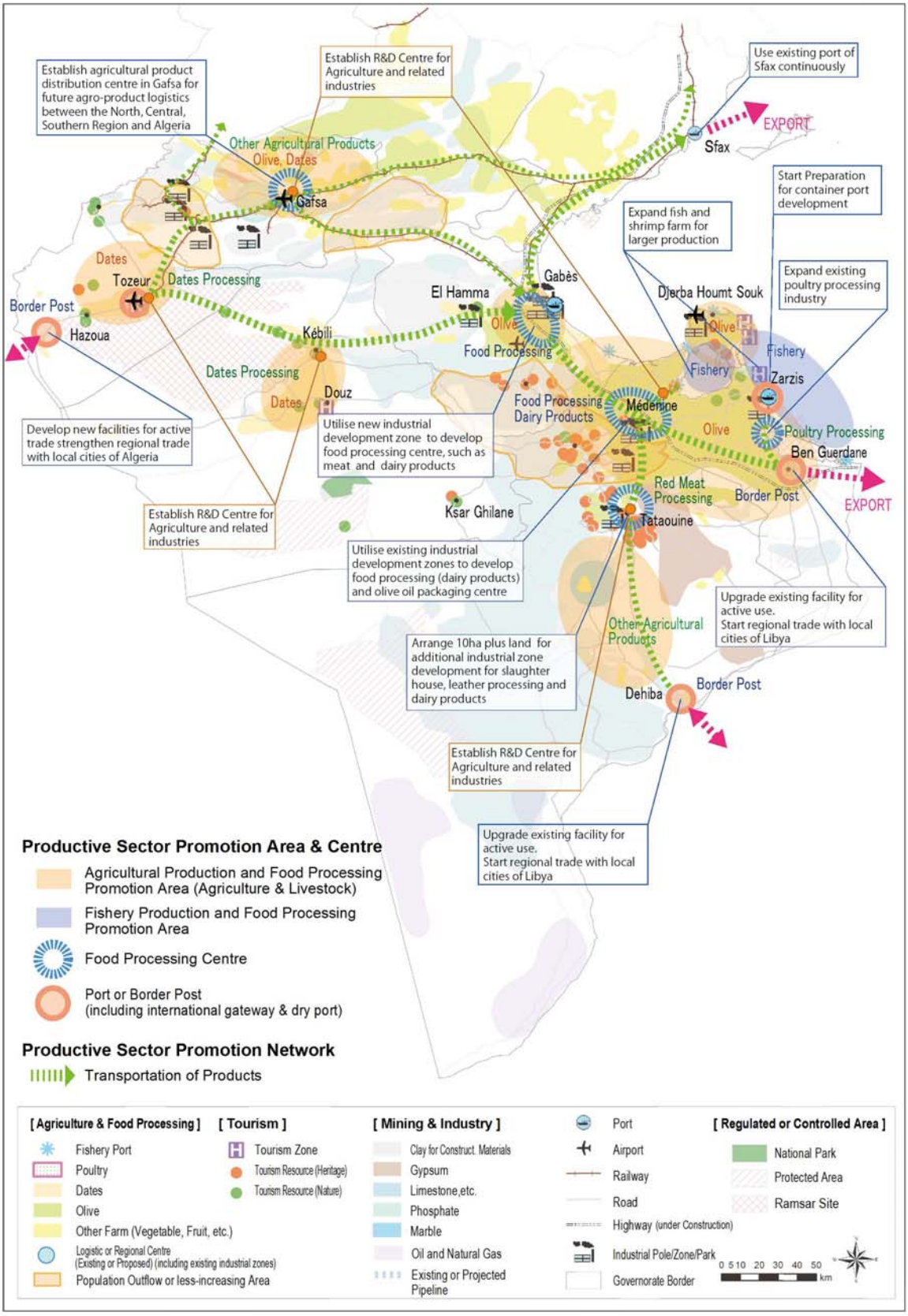
(4) Handicraft sector

(a) Outline of development

Strong competitiveness of the sector has to be achieved by: i) development and strengthening of value chain of wool and leather handicrafts; ii) reinforcement of marketing and commercialization of (traditional and modern design) “Made in South of Tunisia” products; and iii) strengthening of micro and small scale handicrafts enterprises. First, existing schemes have to be evaluated and reviewed, and a comprehensive market study has to be conducted. Afterwards, capacity development of the relevant organisations and investment promotion has to start.

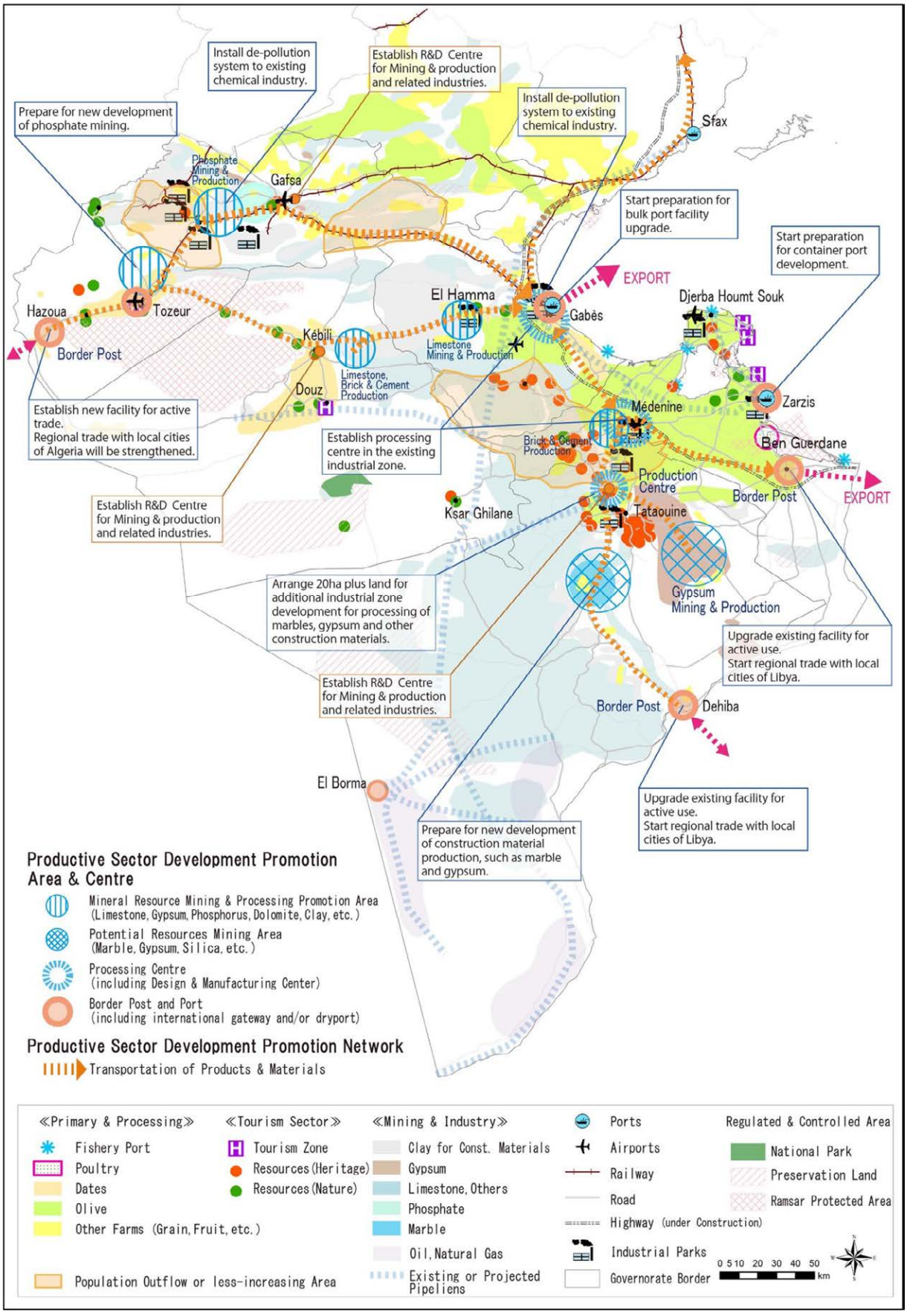
(b) Key development

- Evaluation of existing artisanal villages and revision of future plans
- Evaluation of existing financial schemes available to the sector workers
- Market study: assessment of other local markets and national markets and sales outlets, including the linkages with the tourism sector
- Capacity building of ONA (National Handicraft Office) and training of sector workers
- Investment promotion in collaboration with the tourism sector



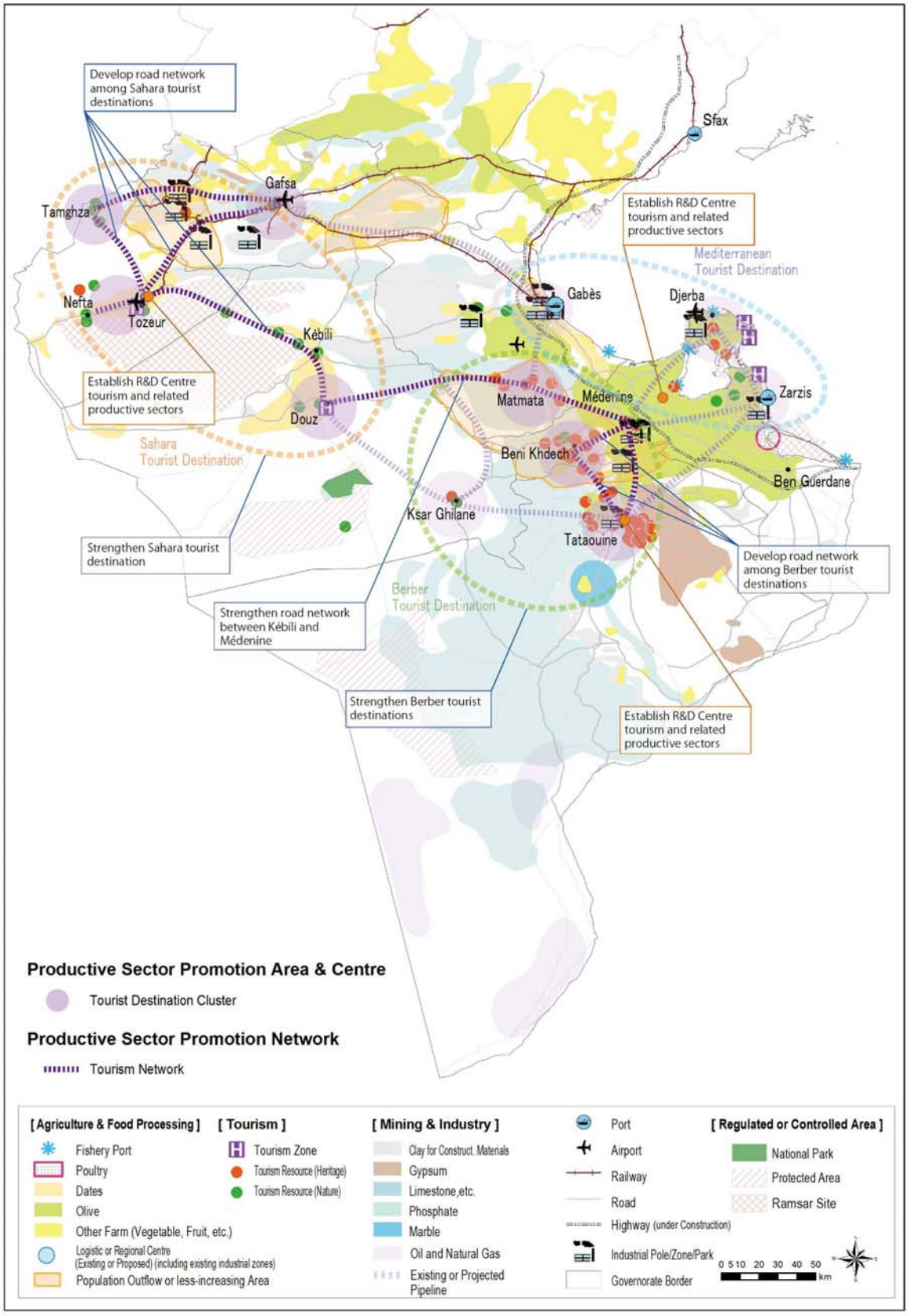
Source: JICA Expert Team

Five-year spatial development plan for agricultural and related sector



Source: JICA Expert Team

Five year spatial development Plan for mining and other industrial sectors



Source: JICA Expert Team

Five year spatial development plan for tourism sector

2 Short-term Actions for Cluster Development of the Productive Sectors

Phased development is proposed as follows because cluster development is new to the Southern Region.

Cluster development policies by development stage

Development stage	Period*	Implementation policy
Preparation stage	2016 – first half of 2018	* Research and development required for cluster formation * Legal, institutional and organisational arrangement for rigid basis of cluster formation * Formulation of implementation plans by products for cluster formation
Formation stage	second half of 2018 – 2020	* Accumulation of resources (human and technology), encouraging technology transfer, improvement in training, and improvement of business environment for upgrading quality of products and increasing productivity of the productive sectors * Fostering partnership between the public and private sectors
Execution stage	2021 – first half of 2023	* Encouraging investment * Implementation of activities for higher value-added products, such as introducing innovation, product development, etc. * Forming nuclei (agglomeration of enterprises, R&D institutes, academic institute, etc.) of clusters * Implementation of sales promotion, branding
Expansion stage	second half of 2023 – 2025	* Further attraction of investment and enterprises mainly from outside of the region * Further technology development included peripheral technology * Enhancing nuclei and developing networks among nuclei and with related industries. * Further sales promotion, branding
Development stage	2026 onward	* Establishing high competitiveness in the global market * Self-sustained activities for further innovation, development of new products

Note: * Period may vary depending on the productive sector and the product
Source: JICA Expert Team

Detailed phased cluster development of productive the sectors as well as infrastructure sectors is shown in the following tables. Durations of the development phases vary depending on productive sectors as well as on respective products. Development phases for infrastructure sectors are generally defined corresponding to needs for the infrastructure by cluster development of the productive sectors.

Roadmap of cluster development

Stages of Southern Region Cluster Development: Preparation | Formation | Execution | Expansion | Development

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026-
Administrative Activities for Regional Development											
Planning and Implementation of Southern Region Cluster Development Plan	Study & Planning Stage	Implementation Stage			Evaluation and Revision Stage	Study & Planning Stage	Implementation Stage			Evaluation and Revision Stage	Hold Southern Region Development Committee meeting twice a year
Planning and Implementation of each Cluster Development Plan	Study & Planning Stage	Implementation Stage (Agricultural Sector)									Hold each Cluster Development Committee meeting six times a year
						Implementation Stage (Other Sectors)					
Agriculture, fishery, livestock breeding and food processing											
Dates	1. Feasibility study & establishment of institutional framework			2. Test run of the pilot cluster (- 2025)		3. Evaluation & review of the pilot cluster (- 2025)				4. Deployment of the cluster (- 2025)	
Olive	1. Feasibility study & establishment of institutional framework			2. Test run of the pilot cluster (- 2025)		3. Evaluation & review of the pilot cluster (- 2025)				4. Deployment of the cluster (- 2025)	
Livestock & Aquaculture	1. Feasibility study & establishment of institutional framework			2. Test run of the pilot cluster (- 2025)		3. Evaluation & review of the pilot cluster (- 2025)				4. Deployment of the cluster (- 2025)	
Food Processing	1. Feasibility study & establishment of institutional framework			2. Test run of the pilot project (- 2025)						4. Deployment of the project - 2025)	
High Potential Products	1. Feasibility study & establishment of institutional framework			2. Test run of the pilot cluster (- 2025)		3. Evaluation & review of the pilot cluster (- 2025)				3. Deployment of the cluster (- 2025)	
Multi-Sector Utilization	1. Feasibility study & establishment of institutional framework			2. Test run of the pilot project (- 2025)						3. Deployment of the project (- 2025)	
Mining and other industrial sectors											
Phosphate	1 Establishing the basis for sustainable development			2. Accumulation of resources (capital, human, scientific) and network (- 2025)			3. Autonomous development through innovation (- 2025)				
Construction material ※limestone, marble and gypsum	1 Establishing the basis for sustainable development			2. Accumulation of resources (capital, human, technology) and network (- 2025)			3. Promotion and innovation (- 2025)				

Stages of Southern Region Cluster Development	Preparation	Formation	Execution	Expansion	Development

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026-
Cosmetic products	1 Establishing the basis for sustainable development			2. Accumulation of resources (capital, human, technology) and network (- 2025)			3. Promotion (- 2025)				
Oil and gas	1 Establishing the basis for sustainable development			2. Accumulation of resources (capital, human, technology) (- 2025)			3 Upgrade of the industry by developing metal service for oil and gas facilities (- 2025)				
Other potential natural resources ※ceramic, glass, silicate, salt	1 Establishing the basis for sustainable development			2. Accumulation of resources (capital, human, technology) and network (- 2025)			3. Promotion (- 2025)				
Textile	1 Establishing the institutional framework			2. Development of productive capacity and productivity (- 2025)			3. Design and product development (- 2025)		4. Promotion and innovation (- 2025)		
Renewable Energy	1. Strengthening regional knowledge base and targeting, and accumulation of human resources			2. Investment in demonstration and improvement of business environment and Infrastructure for Innovation (- 2023)			3. Deployment/Activation of clustering for manufacturing and services (- 2025)		4. Advancing private sector-led clustering and synergy creation with wider array of economic activities (- 2025)		
Tourism	1. Establishing institutional framework			2. Accumulating human capital and business incentives (- 2025)			3. Developing tourism products and services (- 2025)		4. Promoting the Destination（- 2025)		
Handicrafts	1. Knowledge Creation			2. Skill building, Know-how transfer, Infrastructure (- 2025)			3. Activation of Cluster Network（- 2025)				

Roadmap of cluster development for infrastructure sectors

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026 - 2035
Development of Major Infrastructure (New Development & Improvement (Expansion or Rehabilitation))											
Road Network Development											
Development of National Reegional Road Network between cities	Survey, Planning, Designing of new Roads and/or Improvement of existing roads								Start of Services to public in order of		completion
Railway, Airport and Sea Port Development											
Development of Railway Network	Survey, Planning, Designing of new Railway					New Construction					Start of Services to public in order of completion
Airport Development	Survey, Planning, Designing for facility improvement					Improvement Work			Start of Services to public in order of		completion
Sea Port Development	Survey, Planning, Designing for new facility and existing port Expansion					New Construction and Expansion Work					Start of Services to public in order of completion
Water Supply, Power Supply and Telecommunication Network Development											
Development of Desalination Plants	Start of Services to public in order of completion										
Development of Desalination Plants	Start of Services to public in order of completion										
Development of Power Supply and Telecommunication Network					Survey, Planning, Designing		Improvement Work		Start of Services to public in order of		completion

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026 - 2035
Development of Major Facilities in relation with Productive Sector Cluster Development											
Common Facility Development											
Logistic Centre Development	Survey, Planning, Designing	Improvement Work	Start of Services to public in order of completion			Survey, Planning, Designing	Improvement Work	Start of Services to public in order of			completion
Facility Development for Agriculture, Fishery and Food Processing Sector Cluster Activities											
Research and Development Centre Development						Survey, Planning, Designing	Improvement Work	Start of Services to public in order of			completion
Industrial Zone Development (including FEZ)						Survey, Planning, Designing	New Construction & Improvement Work	Start of Services to public in order of			completion
Facility Development for Mining and Manufacturing Sector Cluster Activities											
Research and Development Centre Development	Survey, Planning, Designing	Improvement Work	Start of Services to public in order of completion								
Industrial Park Development (including FEZ)						Survey, Planning, Designing	New Construction	Start of Services to public in order of			completion

3. Short-term Actions for Infrastructure Development

(1) Transport Infrastructure

Plans of short-term for transport infrastructure are listed below. The actions are generally those of preparation for implementations. Major infrastructure development projects are supposed to be implemented after feasibility studies and environmental impact assessment studies.

Implementation plans of transport infrastructure development

Type	Reference	Comments
	Roads	
Fast track/ short term (before end 2020)	TR 3-5	Road database is prerequisite to realize works in an integrated manner
	TR 3-4	Maintenance of itineraries (to be contd.)
	TR 2-5	Prerequisite to fund more easily works on other main roads
	TR 3-9	Prerequisite to fund more easily smaller scale works
	TR 4-1	Prerequisite to know where black spots and main causes of accidents are
	TR 4-5	Use of the Fund to implement works on case by case basis.
	Railways	
Fast track/ short term (less than 5 years)	TR 1-3	Conclusions of the fast train study to be available by 2020 (see TR 3-7)
	TR 2-4	First wagons to replace are purchased and put into service. Audit of locomotives – Definition of needs for upgrading or replacement
	TR 3-7	Comprehensive study (passengers + freight, all network) terminated by 2019
	Ports	
Fast track/ *short term* (less than 5 years)	TR 5-4	Cleaning/depollution of Gabès port area Handling material for containers Development of a storage area for containers
	TR 5-5	Creation of an *ad hoc* development structure (port + FTZ etc.) Handling material for containers Development of a storage area for containers
	Airports	
Fast track/ short term (less than 5 years)	TR-1-9	Development of studies
	TR-5-6	Creation of project structure Study of business plan Implementation of the pilot project for 2 years
	Urban and interurban transport	
Fast track/ short term (less than 5 years)	TR 1-6	Preliminary studies and public consultation
	TR 1-7	Studies by 2020 on several itineraries
	TR 2-3	The first vehicles are procured and commissioned
	TR 3-6	The information system is commissioned and operative
	TR 4-3	All refurbishments are realized (Note: for Gabès bus station in connection – location, time - with the new train station and future LRT station)
	TR 5-2	The program is prepared and implemented in designated locations
	TR 5-3	The oldest 10% of the fleet is replaced

(2) Water supply/wastewater treatment

Short-term actions for water supply have to be implemented according to plans formulated by SONEDE and taking a little volume of additional demand caused by higher value adding productive sectors.

Short-term actions for wastewater treatment have to be carried out as planned by ONAS to raise ratios of the service coverage in town areas for sustainable development and to reduce of regional disparity in this regards.

(3) Power supply

Management of power grid can be more sophisticated through actions such as i) reduction of power losses in transmission and distribution network, ii) demand control to specifically reduce peak power demands for less power plant construction, iii) more utilisation of renewable energy for power generation for sustainable sector development taking advantage of high potential of solar radiation in the Southern Region.

(4) Telecommunications

It would be necessary for the public administration to provide some incentives for the private telecommunication operators to invest in inland areas, where commercial viability of investment in telecommunication infrastructure might be lower, to improve business environment of less developed areas.