Tunisia-Italy Power Interconnector Project

Environmental and Social Impact Assessment (ESIA)

Section 6 – Socio-economic baseline – Tunisian side

Draft for consultations

JV HPC – IDEACONSULT – PROGER – ELARD - PLEXUS

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1. INTRODUCTION

This section of the ESIA examines the socio-economics characteristics and the infrastructures and services available in the Project's Tunisian area of interest, based on the social, economic, administrative and cultural conditions.

In addition to the establishment of a good understanding of the existing social setting, the essential contents of the socioeconomic baseline are the pursuit of the following specific objectives:

1. Identify the key features of identified socio-economic receptors and resources in the project area in their current state, before any change implied by the Project (ante-operam characterization);
2. Provide elements from the analysis that inform the impact assessment, to predict and explain potential positive and negative social impacts arising from Project-related activities during each phase of the project, as well as establish mitigation measures designed to reduce, remediate or avoid potential impacts, and the residual impacts (i.e. impacts after mitigation measures are implemented).
3. Identify potentially impacted geographic areas and population groups, including particularly disadvantaged or vulnerable groups or individuals who may be subject to unconscious biases or inclusion barriers, to ensure that the Project: a) does not differently or disproportionately favor or disfavor any community, and b) recognize situations that may need special care to engage them in consultation and disclosure activities.

2. DESCRIPTION OF THE PROJECT INFLUENCE AREA

The project is located in the North-East part of Tunisia. The three terrestrial parts of the project (underground cable, Mlaâbi CS and OHL 400 kV line) crosses four governorates: Nabeul, Ben Arous, Zaghouan and Manouba.

As shown in the following Figure, the project crosses seven delegations in the Nabeul governorate (Kelibia, Menzel Temime, El Mida, Korba, Menzel Bouzelfa, Beni Khalled and Grombalia); two delegations in the governorate of Ben Arous (Mornag and Mhamedia); one delegation in the governorate of Zaghouan (Bir Mchergua); and one delegation in the governorate of Manouba (Mornaguia).

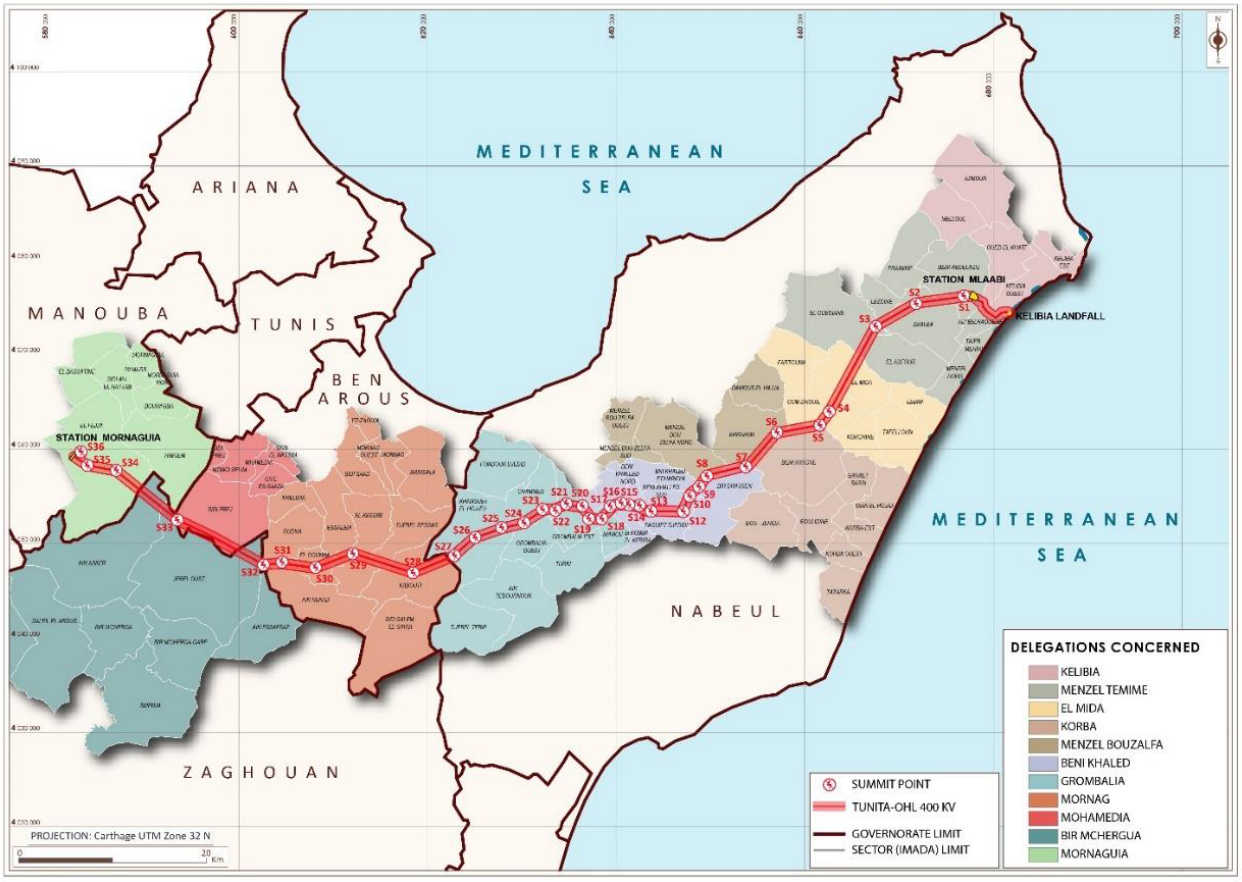

Figure 1 : Project influence area

2.1 Nabeul Governorate

Located in the extreme North-East of the country and surrounded by the Mediterranean on both sides (north and east), the governorate of Nabeul or the "Cap-Bon Region" is the first seaside resort of the country and constitutes an important strategic geographical position in the heart of the Mediterranean Sea.

The governorate of Nabeul covers 2,822 km², which represents 1.8% of the country's total surface area and extends over 200 km of coastline. The region is also known for its agricultural wealth and its touristic and industrial potential.

The governorate of Nabeul has 16 delegations.

Figure 2 : Administrative division of the governorate of Nabeul

The table below lists the delegations and their surface areas.

Table1 : Nabeul delegation's list

Delegations	Area (Hectares)	Delegations	Area (Hectares)
Nabeul	7 160	El Haouaria	33 240
Dar Châabane El Fehri	7 190	Takelsa	27 000
Béni Khiar	10 600	Soliman	14 010
Korba	20 610	Menzel Bouzelfa	14 170
Menzel Témime	26 080	Béni Khalled	11 810
El Mida	15 440	Grombalia	29 810
Kélibia	12 800	Bou Argoub	13 120
Hammam El Guezaz	7 780	Hammamet	32 090
Total		282 200	

2.2 Ben Arous Governorate

The governorate of Ben Arous was created in 1983. It is composed of 12 delegations and covers a total area of 790 km².

Table2 : Ben Arous delegation's list

Delegation			
Ben Arous	Hammam-Lif	Ezzahra	M'hamdia
Nouvelle Médina	Hammam-Chatt	Radés	Fouchana
El Mourouj	Bou M'hel El Bassatine	Mégrine	Mornag

It is delimited:

- To the North-East by the Mediterranean Sea and the Governorate of Tunis
- To the East by the Governorate of Nabeul
- To the South-West by the Governorate of Zaghouan
- To the West by the Governorate of Manouba

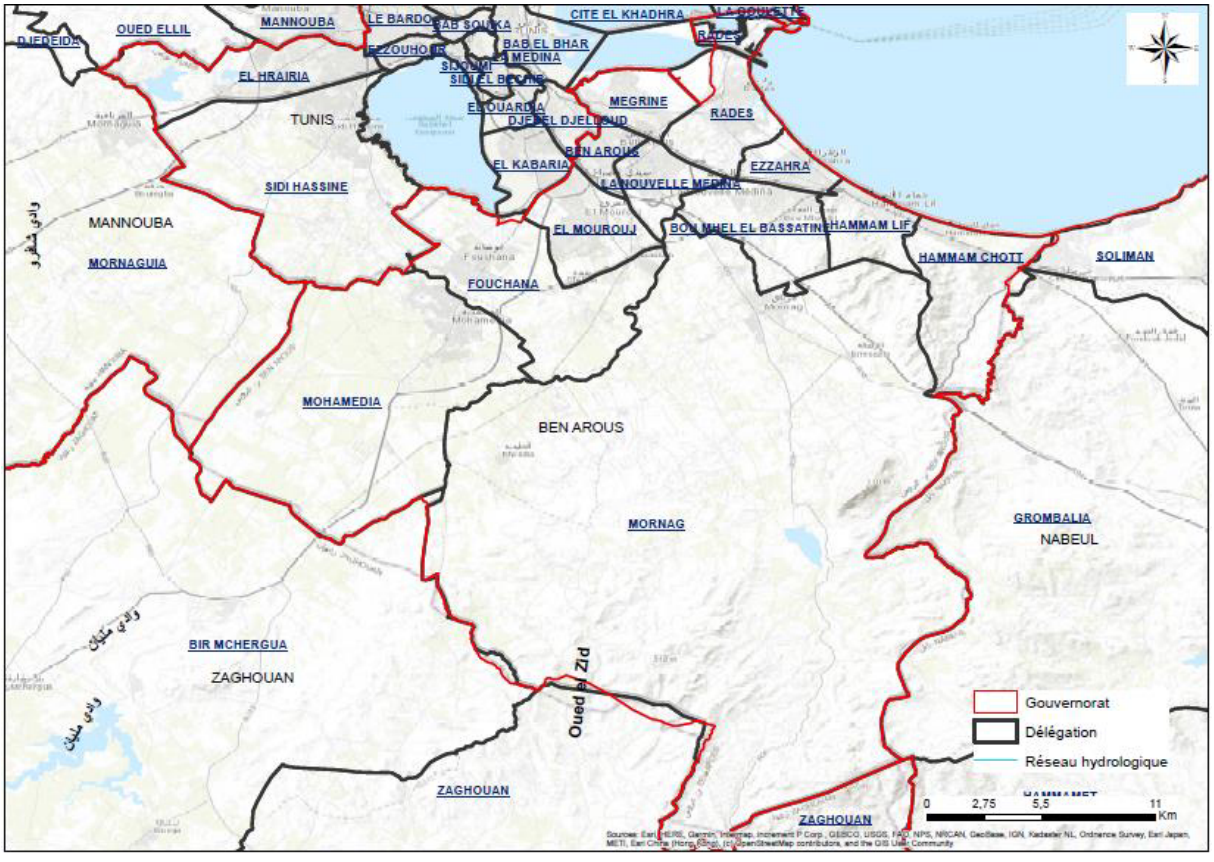

Figure 3 : Administrative division of the governorate of Ben Arous

2.3 Zaghouan Governorate

The governorate of Zaghouan was created in November 1976. It is located in the North-East of the country and covers an area of 2,820 km², or 1.7% of the country's surface area. The governorate is located at 51 km from the capital and is bounded by:

- The Governorates of Ben Arous and Manouba in the North;
- The governorates of Sousse and Kairouan in the south;
- The governorates of Siliana and Béja to the West.

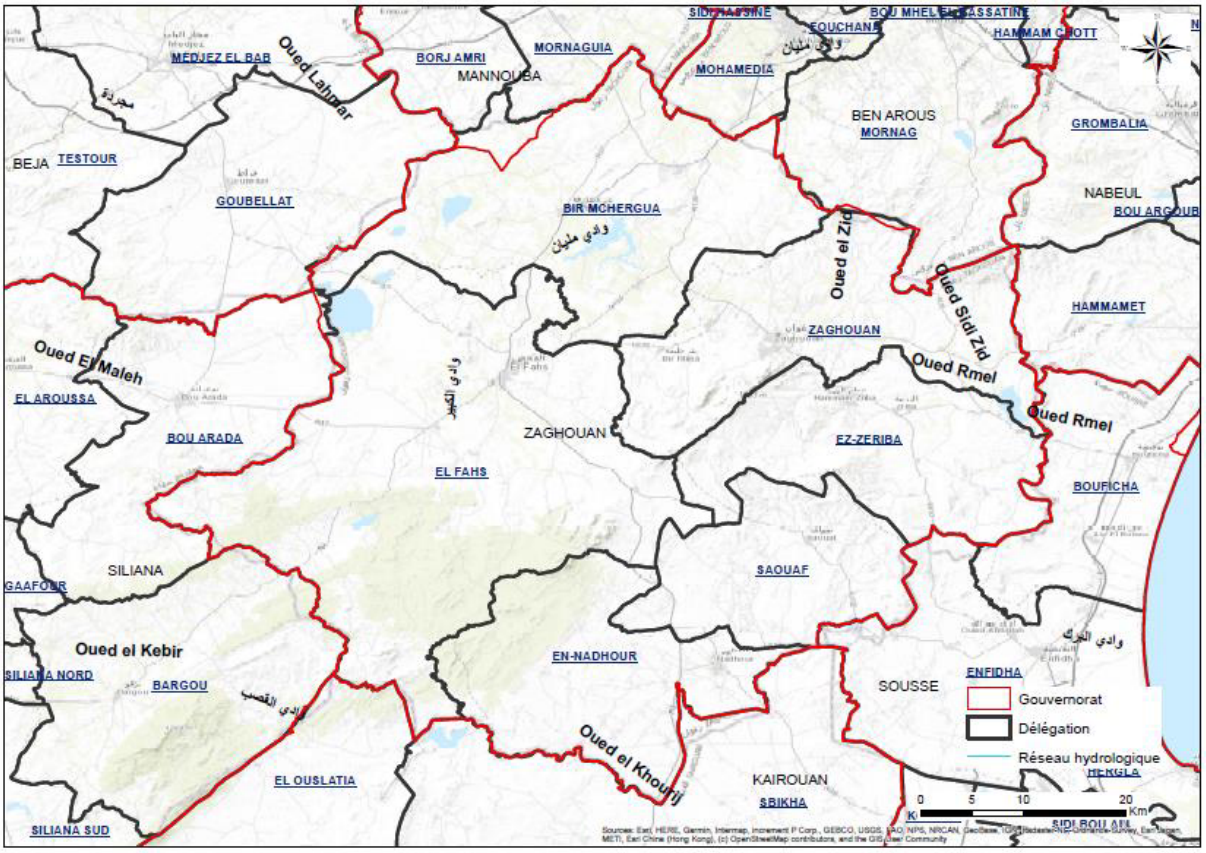

Figure 4: Administrative division of the governorate of Zaghouan

The governorate of Zaghouan is composed of six delegations: Bir Mcherga, El Fahs, Nadhour, Saouaf, Zaghouan, Zriba.

2.4 Manouba Governorate

The governorate of Manouba is located in the North-East of the country. It is limited to the North by the governorate of Bizerte, to the West by the governorate of Béja, to the East by the governorates of Tunis and Ariana and to the South by the governorates of Ben Arous and Zaghouan. Its total surface area is 1137 km², i.e. 1.12% of the total surface area of the country.

Manouba forms with the governorates of Tunis, Ariana and Ben Arous the District of "Grand-Tunis".

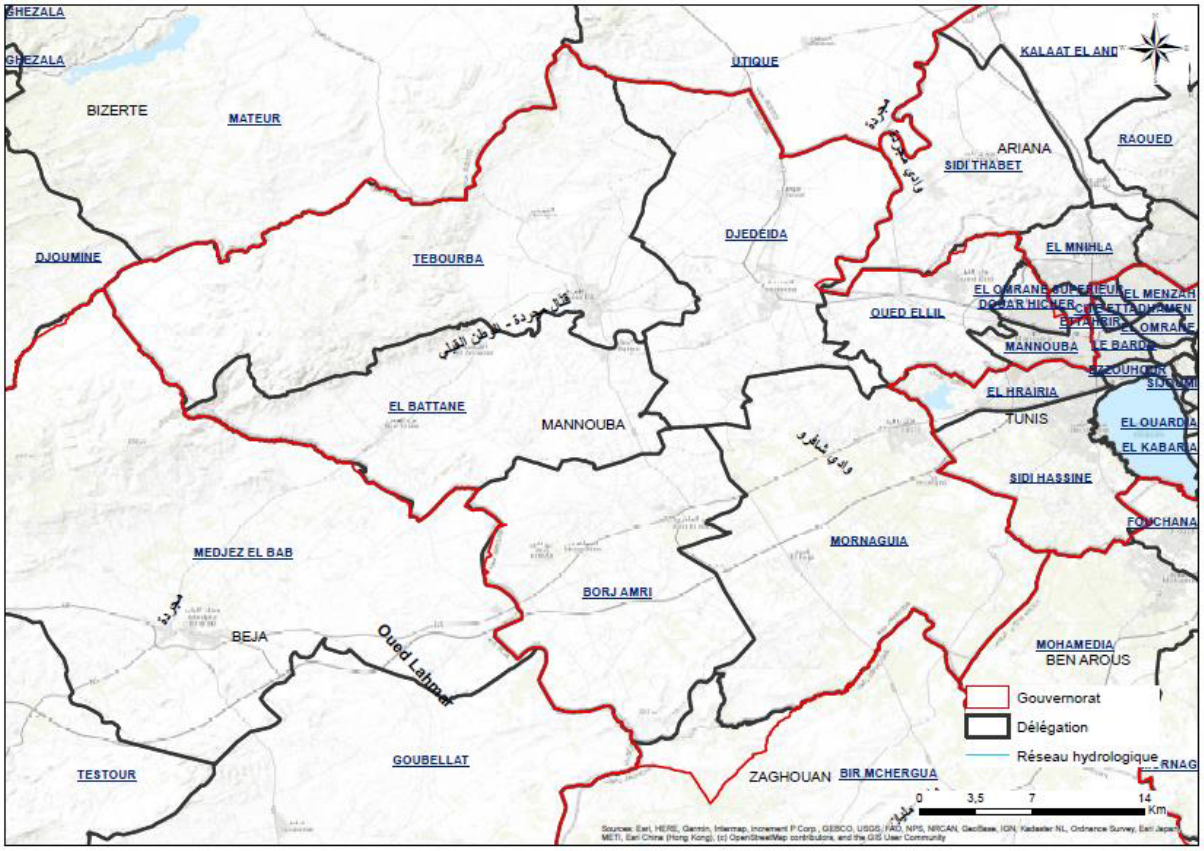

Figure 5 : Administrative division of the governorate of Manouba

The Governorate of Manouba is composed of 8 delegations, 47 sectors and 9 communes.

Table3 : Manouba delegation's list

Delegation	Area (ha)	Délégation	Area (ha)
Manouba	1 170.35	**Jedaïda**	18 333.77
Douar Hicher	909.20	**Mornaguia**	26 330.73
Battan	15 408.17	**Oued Ellil**	5 705.85
Borj El Amri	17 262.98	**Tebourba**	28 750.50
Total Governorate		113 871,55	

3. DEMOGRAPHIC TREND

3.1 Population of the project area

The project area covers four governorates and eleven delegations. The total population of the governorates concerned by the project is estimated at 2 194 258 inhabitants in 2020, while the population of the delegations concerned is estimated at 602 496 inhabitants in 2020.

The table below details the distribution of the population by Delegation:

Table 4: Distribution of the population by Delegation

Governorate	Population in 2020	Delegation	Population in 2020
Nabeul	866 412	Kelebia	62 486
		Menzel Temime	70 600
		El Mida	29 478
		Beni Khalled	41 082
		Korba	75 263
		Grombalia	76 293
		Menzel Bouzelfa	41 123
Ben Arous	714 801	Mornag	64 756
		Mohamedia	81 422
Zaghouan	190 205	Bir mchergua	26 479
Manouba	422 840	Mornaguia	33 514
Total	2 194 258	Total	602 496

The figure below shows the distribution of the population in the eleven delegations concerned by the project:

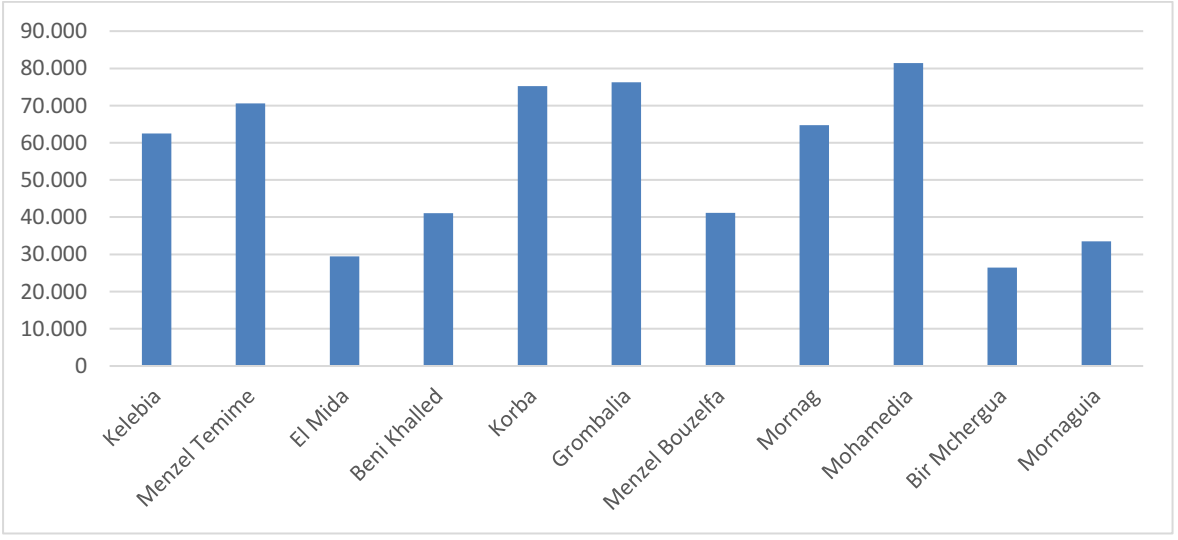

Figure 6: Distribution of the population in the eleven delegations

The most populated delegation in the project area is Mhamedia with more than 81 000 inhabitants, while the delegation of Bir Mcherga is the least populated with just over 26 000 inhabitants.

3.2 Distribution of the population by age groups

The population of the project area is relatively young. In fact, 45% of the population of the project area is under 30 years old, while the population over 60 represents only 13%. The graph below shows the distribution of the population by age group:

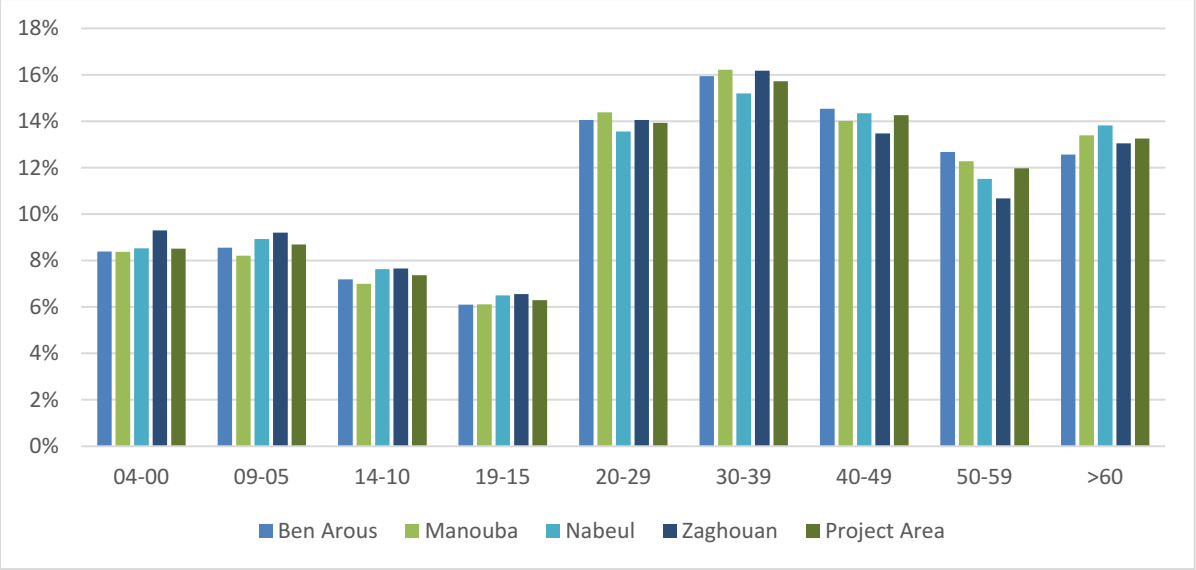

Figure 7: Distribution of the population by age groups

3.3 Distribution of the population by gender

The gender distribution population of the project area is fairly balanced. Indeed, men represent 50.1% of the population and women represent 49.9%. The figure below shows the population distribution of each governorate by gender:

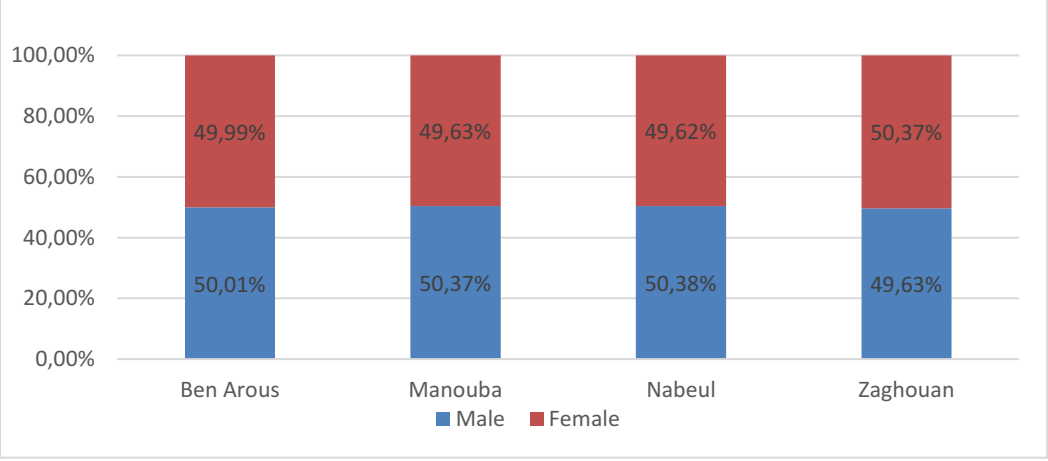

Figure 8 : Distribution of the population by gender

4. EDUCATION

4.1 School enrolment and distribution of teachers for basic education

The figure below shows the distribution of school enrollment in the project area.

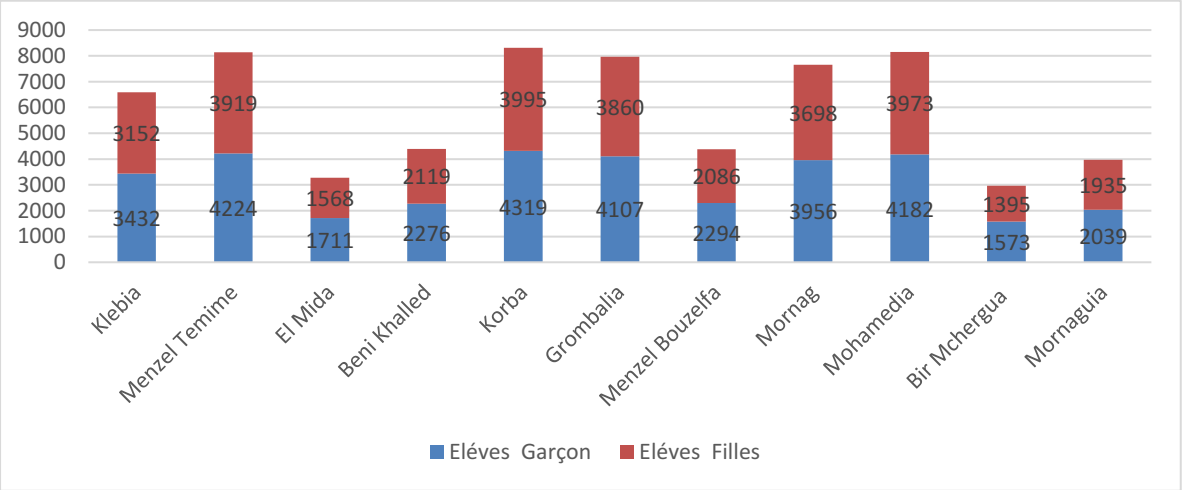

Figure 9: Distribution of school enrollment in the project area for basic education

The project area has 65 642 students, 48% of whom are girls. The delegations of Menzel-Temime, Korba and Mhamadia have the highest number of students with 8143; 8314 and 8155 students respectively.

The figure below shows the distribution of teachers and the representation of women in the teaching body by delegation.

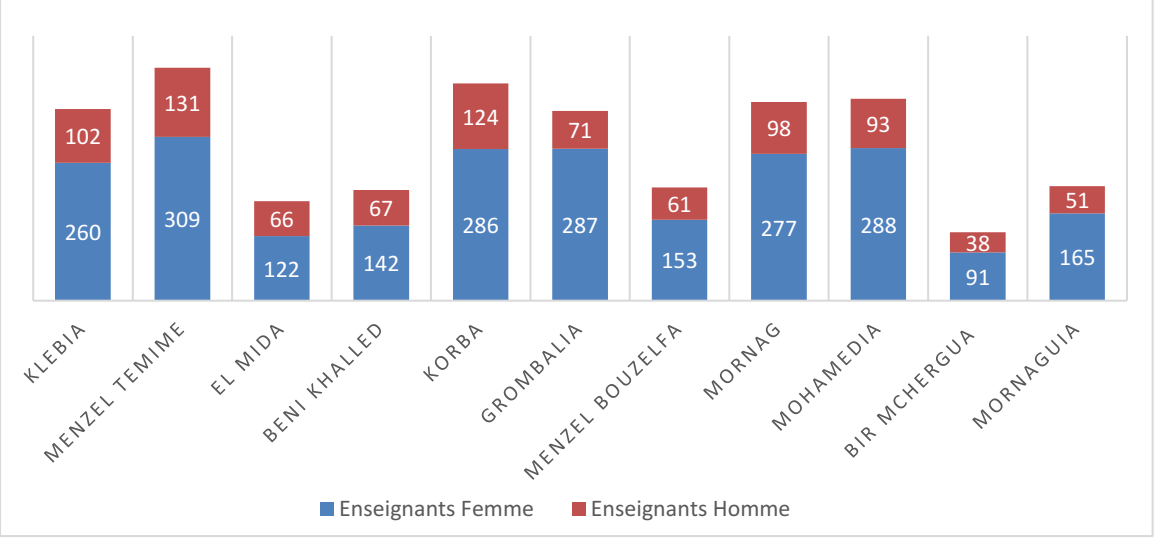

Figure 10: Distribution of teachers for basic education

The total number of teachers is 3,282 teachers. Female teachers represent on average 72% of the teaching staff.

The graph below shows the student to teacher ratio in the project area.

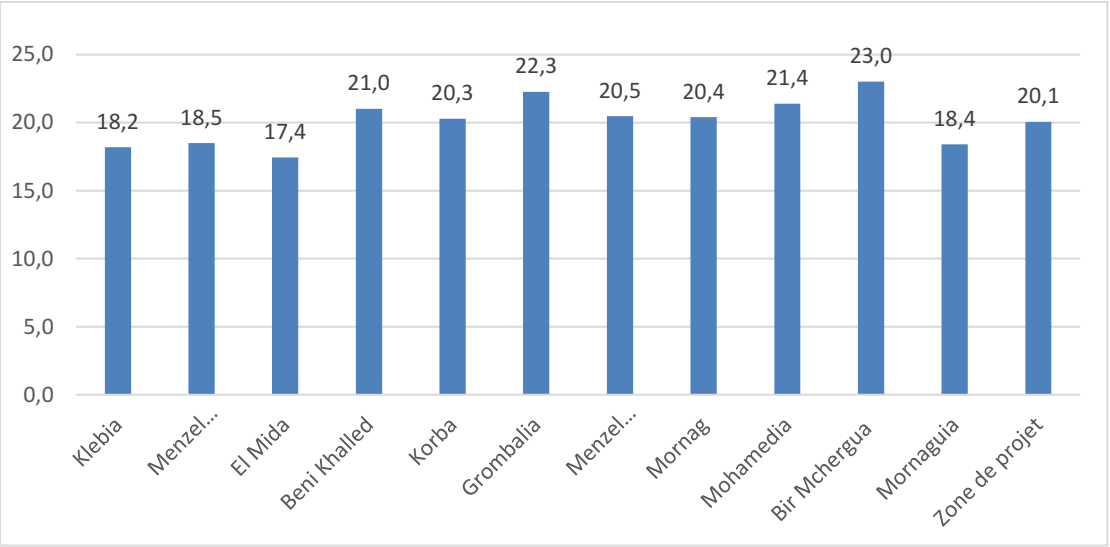

Figure 11: Pupil-to-teacher ratio in the project area for basic education

The average student to teacher ratio is 20 in the project area. The highest ratio is in the delegation of Bir Mcherga (23) and the lowest is in the delegation of El Mida (17.4).

4.2 Infrastructure of the first cycle of basic education

The delegations concerned by the Project include 206 schools and 1335 classrooms. The figure below lists the primary schools and classrooms existing in the project area by delegation:

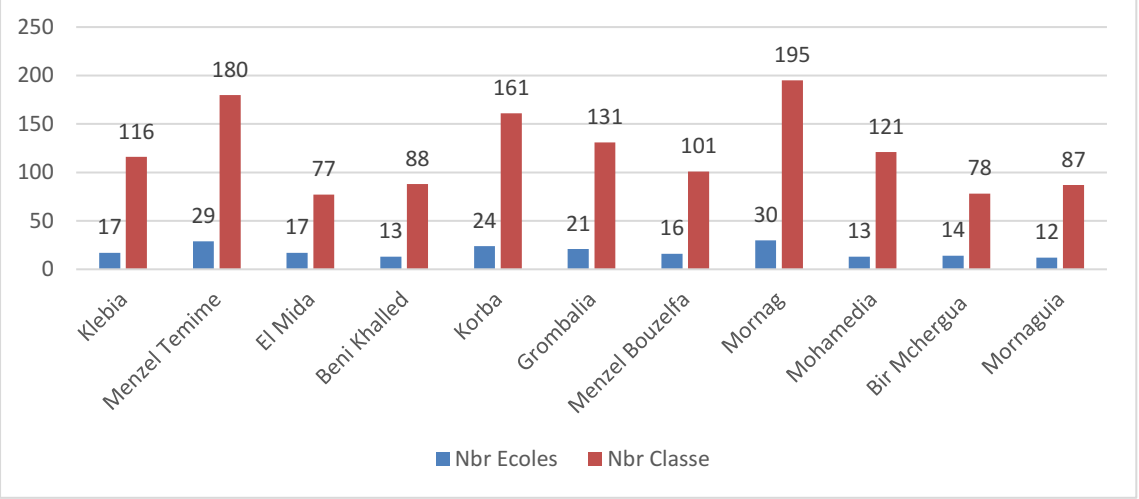

Figure 12: Distribution of schools and classrooms in the basic education project area

The delegation with the largest number of schools and number of classrooms is that of Mornag.

Figure 13: Primary school in the project area

4.3 School enrolment and distribution of teachers in the second cycle of basic education and secondary education

The project area has several establishments of the second cycle of basic education and secondary education. The figure below gives the breakdown of enrolments by delegation:

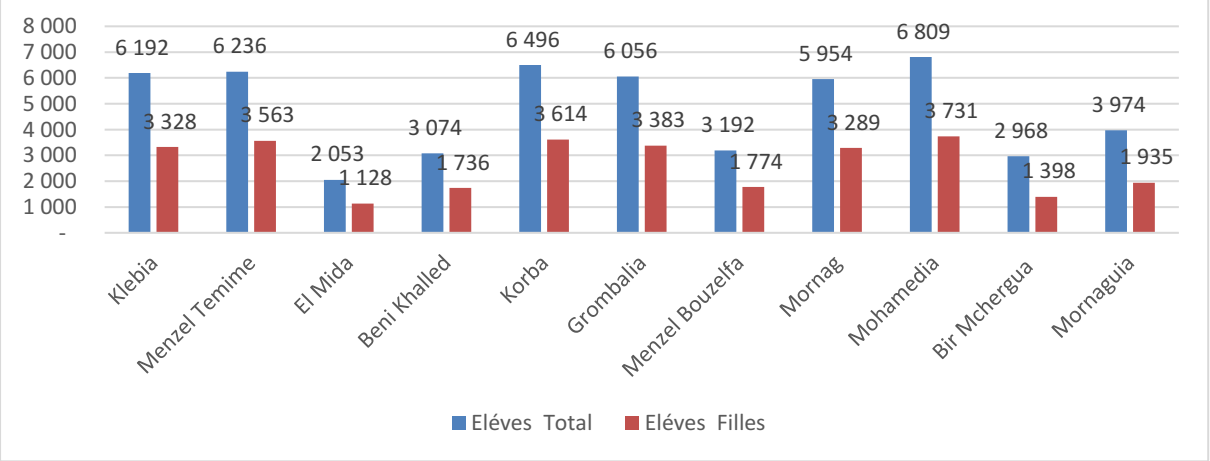

Figure 14: Distribution of enrollments in the project area in the second cycle of basic education and secondary education

The delegations of Mhamedia, Korba and Menzel Temime have the largest enrollments with 6809; 6496 and 6236 pupils respectively.

The figure below shows the distribution of teachers and the representation of women in the teaching body in the second cycle of basic education and secondary education by delegations.

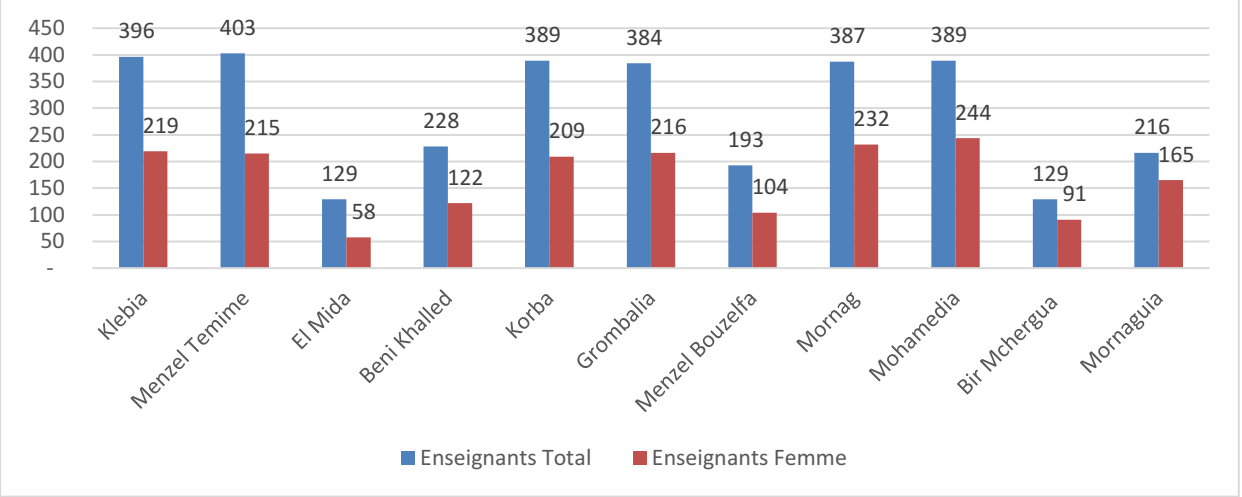

Figure 15: Distribution of teachers for the second cycle of basic education and secondary education

In the project area, women represent 57% of teachers in this education cycle.

The diagram below gives the ratio of pupils per teacher for the second cycle of basic education and secondary education:

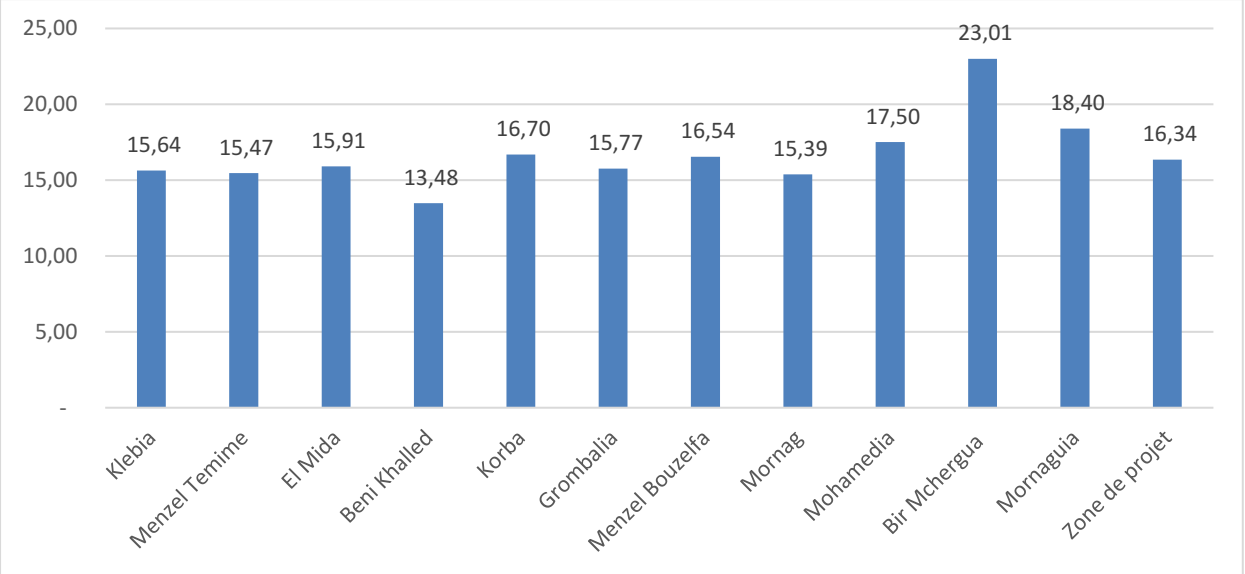

Figure 16: Pupil-to-teacher ratio for upper basic education and secondary education

The average pupil/teacher ratio for upper basic education and secondary education is equal to 16.34 in the project area. The highest ratio is in the delegation of Bir Mcherga (23) and the lowest is in the delegation of Beni Khaled (13.48).

4.4 Infrastructure of the second cycle of basic education and secondary education

The figure below shows the distribution of infrastructure for the second cycle of basic education and secondary education.

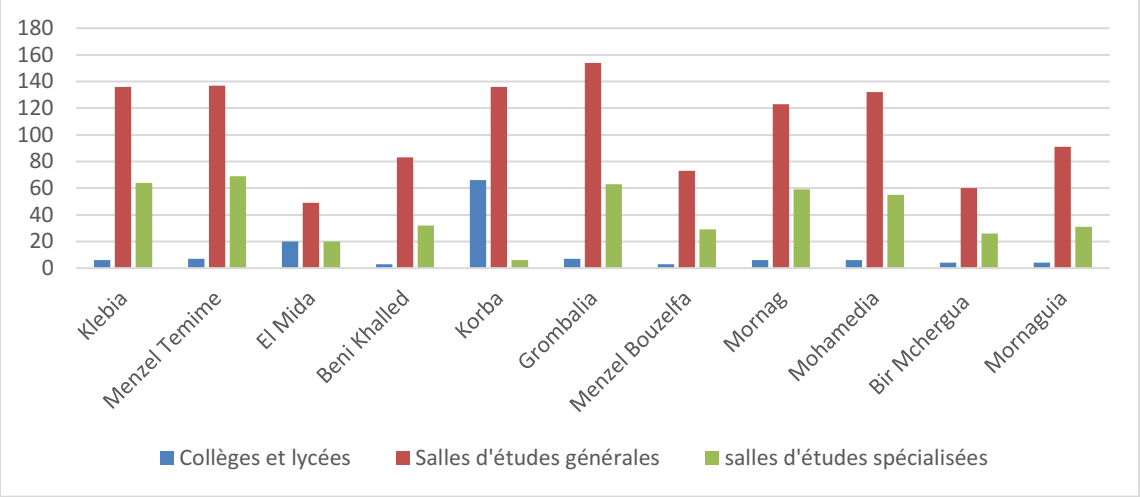

Figure 17: Upper basic and secondary education infrastructure

The project area has 132 middle and high schools. These institutions have 1174 general study classrooms and 454 specialized study classrooms.

Figure 18: Menzel Temim Technical High School and El Mida High School

4.5 School dropout rate

School dropout rates vary between delegations and cycles. This variation is shown in the graph below:

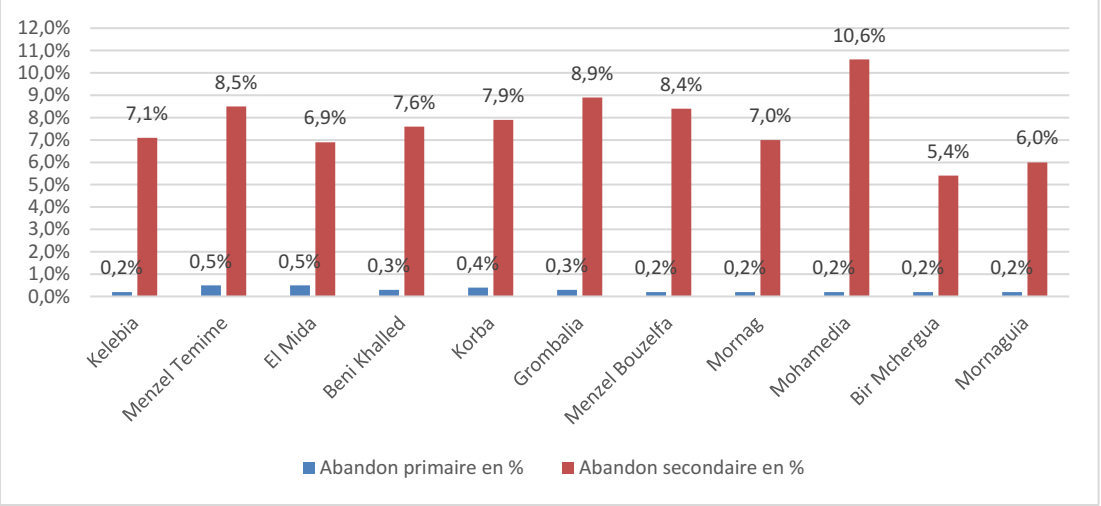

Figure 19: School dropout rate by delegation

The average primary school dropout rate is 0.3%, while the average school dropout rate is 7.7%.

The dropout rate in secondary education is quite high in all the delegations concerned by the project. One of the reasons for this abandonment is the lack of establishments, which sometimes leads to fairly substantial travel.

5. PUBLIC HEALTH

5.1 Public health infrastructure and equipment

The table below describes the distribution of public health infrastructure and equipment in the project area:

Table 5: Distribution of public health infrastructure and equipment

	Hospitals Reg ., of cir . and united.	Operating rooms	Number of beds	Basic health centers	Nbr of laboratories
Nabeul	11	21	1040	115	17
Ben Arous	1	12	364	47	7
Zaghouan	4	5	507	45	6
Manouba	3	8	976	41	6

Despite the availability of health infrastructures in the four governorates, the state of these infrastructures is quite poor. Indeed, most establishments suffer from a lack of equipment and staff.

Figure 20: Public health facility in the project area

5.2 Medical staff

The following table gives the distribution of medical personnel in the governorates concerned by the project:

Table 6: Distribution of medical staff

Governorate	Generalists		Specialists		Dentists		Pharmacists	
	Audience	Private	Audience	Private	Audience	Private	Audience	Private
Nabeul	126	267	110	391	40	320	19	187
Ben Arous	105	226	84	344			8	203
Zaghouan	66	38	30	33	13	23	10	32
Manouba	71	121	109	53			12	74

The table shows an imbalance in the geographical distribution of medical personnel in the project area. Indeed, in the case of the governorate of Zaghouan, the lack of specialists is flagrant.

5.3 Health indicators

The National Institute of Statistics (INS) provides, as part of its missions (Census and/or MICS), regular estimates for a large number of health indicators to the authorities. These indicators cover the Governorates, Delegations and Imadas (smallest administrative entity), including the project influence area. The main indicators reported are:

- Life expectancy at birth;
- Neonatal mortality rate per 1000 live births (2015);
- Mortality rate per 1,000 children under 5 years of age (2015);
- Maternal mortality ratio per 100,000 live births;
- DTP3 vaccine coverage among one-year-olds (%);
- Density of doctors (public health and free practice) per 1000 people;

- Density of medical personnel (nurses, midwives, paramedics, senior technicians) per 1000 people;
- Government expenditure on health as % of total government expenditure;
- Private expenditure on health as % of total health expenditure;
- % of population with sustainable access to a safe water source;
- % of population using improved sanitation facilities;
- Human Development Index.

➢ The Ministry of Health monitors occasionally (in time) and partially (in space) key indicators of Tunisians' health in the '***Tunisian Health Examination Survey'*** study. The main indicators reported are:

- MORBIDITY (15 years and over) :
  - Prevalence of obesity,
  - Prevalence of diabetes,
  - Proportion of known diabetes, of treated diabetes among known diabetes, of treated diabetes among diabetics
  - Prevalence of hypertension
  - Proportion of known, treated hypertension among known, treated hypertension among hypertensives
  - Overall prevalence of dyslipidemia
  - Proportion of dyslipidemia known, treated among known, treated among dyslipidemics
  - Overall prevalence of hypercholesterolemia
  - Prevalence of anemia
  - Prevalence of co-morbidity "diabetes and hypertension
  - Prevalence of co-morbidity "diabetes, dyslipidemia, obesity and hypertension
  - Frequency of people who declared that they are in good health
  - Average score of sleep disorders and lack of energy
  - Average score of anxiety disorders
- HEALTH-RELATED BEHAVIOURS
  - Prevalence of smoking
  - Prevalence of cigarette smoking
  - Prevalence of hookah use
  - Prevalence of alcoholic beverage consumption
  - Insufficient physical activity
  - Frequency of consumption of 5 fruits and vegetables/day
- USE OF HEALTH CARE DURING THE LAST 12 MONTHS BEFORE THE SURVEY
  - Use of a general practitioner
  - Use of a specialist doctor
  - Use of a dental doctor

- Frequency of hospitalization during the 12 years preceding the survey
- Frequency of not using care
- Share of financial reasons for not seeking care

- CATASTROPHIC EXPENDITURE AT 10% THRESHOLD
- CATASTROPHIC EXPENDITURE AT 25% THRESHOLD
- CATASTROPHIC EXPENDITURE AT 40% THRESHOLD
- WOMEN'S AND CHILDREN'S HEALTH
  - Proportion of women who had at least one antenatal visit
  - Proportion of women who had 4 or more antenatal visits
  - Proportion of women who had 8 or more antenatal visits
  - Proportion of deliveries in health facilities
  - Proportion of women who have had a Pap smear in the last 5 years
  - Proportion of women having had a mammogram in the last 2 years
  - Proportion of women who have had a clinical examination in the last 12 months
- CONTRACEPTIVE PREVALENCE USING MODERN CONTRACEPTIVE METHODS
- VACCINATION COVERAGE ATTESTED BY A VACCINATION RECORD FOR 18-29 MONTHS: BCG, Hepatitis 1, Polio 1,2 and 3, Measles 1 and 2.
- DEATH CERTIFICATE ISSUED BY A DOCTOR
- OBTAINING A MEDICAL CERTIFICATE OF DEATH
- DECLARATION OF DEATH TO THE CIVIL REGISTRY

➢ The indicators reported annually by the Ministry in the area of influence of the Project are integrated in the document "Annual Performance Project" and are presented by program:

- BASIC HEALTH CARE PROGRAMME:
  - Rate of coverage by 5 prenatal consultations
  - Rate of diabetics and hypertensives screened at the complication stage
- HOSPITAL HEALTH SERVICES PROGRAM
  - Rate of coverage of priority areas with specialist doctors
  - Rate of hospital services using the digital daily prescription system,
- RESEARCH AND UNIVERSITY HEALTH SERVICES PROGRAM
  - Rate of procedures performed in day hospitals
  - Rate of evolution of renal transplant procedures
  - Rate of evolution of interventional cardiology procedures
  - Number of projects carried out in investigation centers
  - Rate of change in reported adverse drug reactions
- STEERING AND SUPPORT PROGRAM
  - Rate of implementation of the recommendations of the strategic steering committees

- Rate of visits to the mission site
- Rate of achievement of objective contracts of EPNAs and EPAs
- Gap between forecast and realization of salaries
- Rate of implementation of the training plan
- Budget execution rate
- Operating costs per employee

6. INFRASTRUCTURES AND SERVICES

6.1 Road infrastructure

The national road network totals 19 782 km of roads, distributed as follows:

- Local roads: 5928 km;
- Regional roads: 6513 km;
- National roads: 4750 km;
- Roads under classification: 1979 km;
- Highways: 612 km.

The following figures show the presence of roads in the 4 governorates of the project area by type of road.

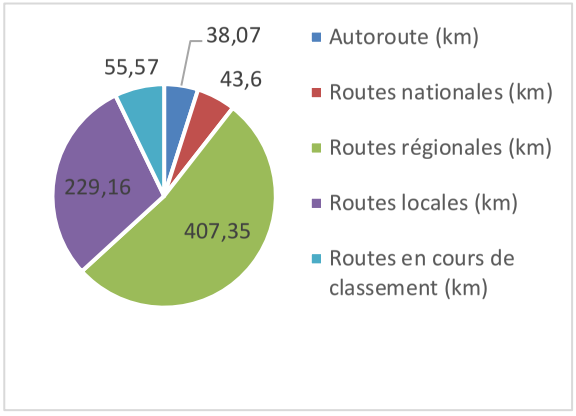

Figure 21: Type of roads in the Nabeul Governorate

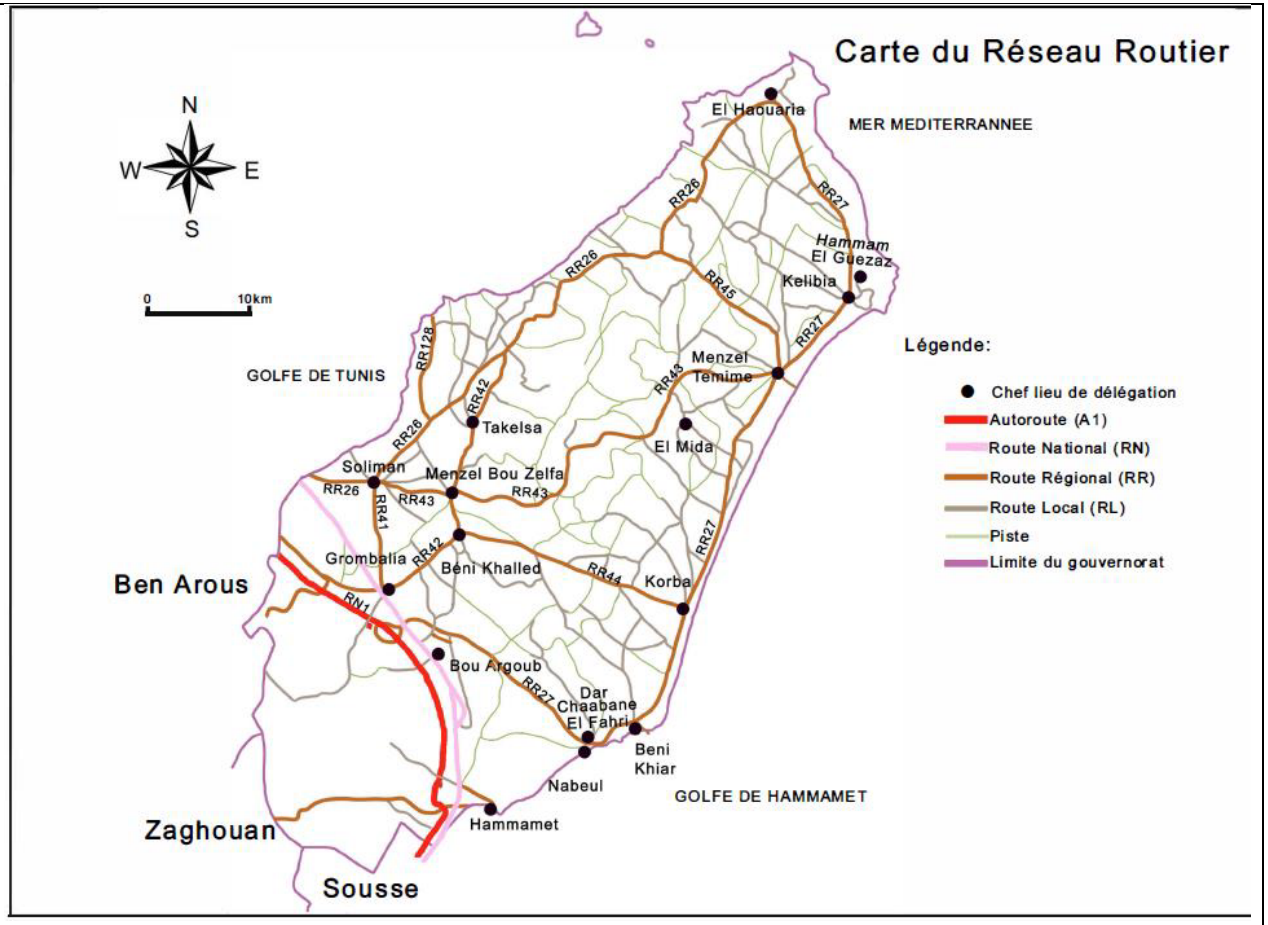

Figure 22: Nabeul road network (source Atlas Nabeul)

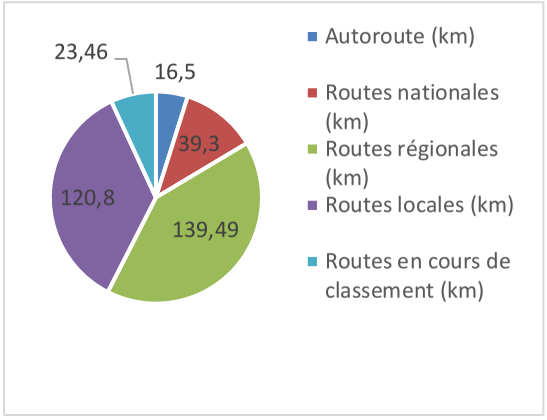

Figure 23: Type of road in the Ben Arous Governorate

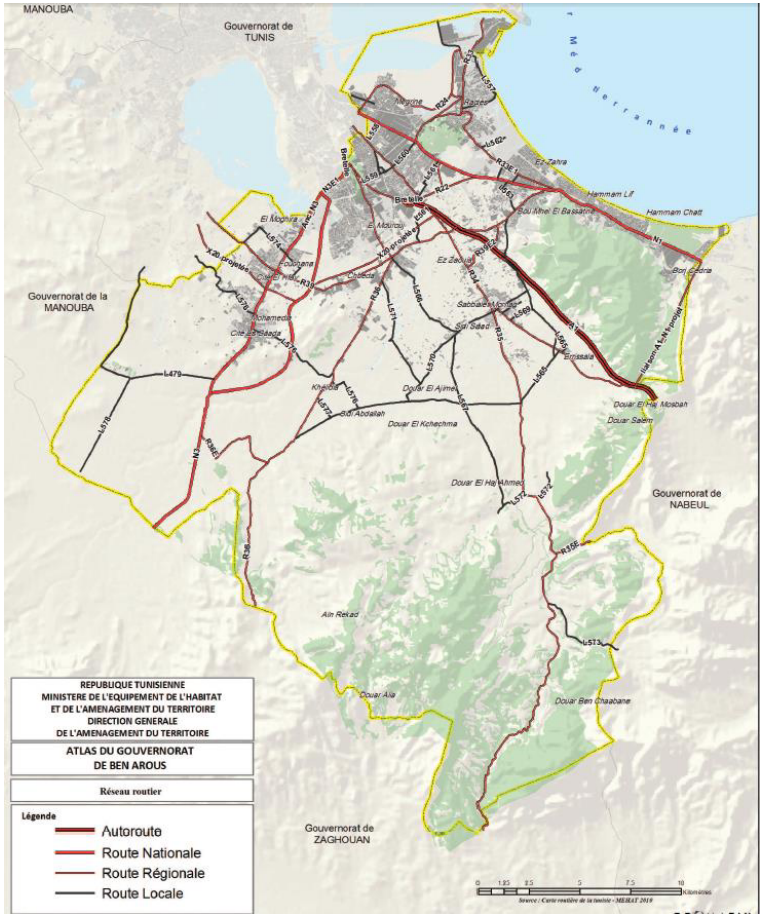

Figure 24: Network roads of Ben Arous Governorate (Source: Atlas Ben Arous)

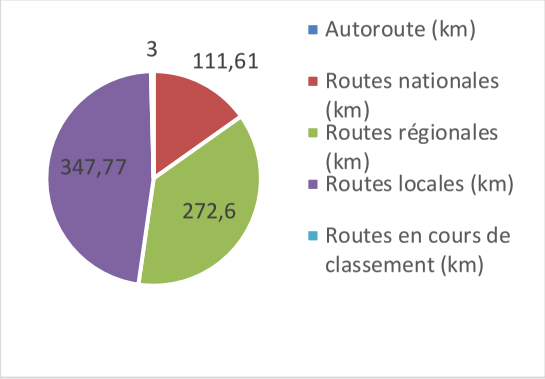

Figure 25: Type of road in the Zaghouan Governorate

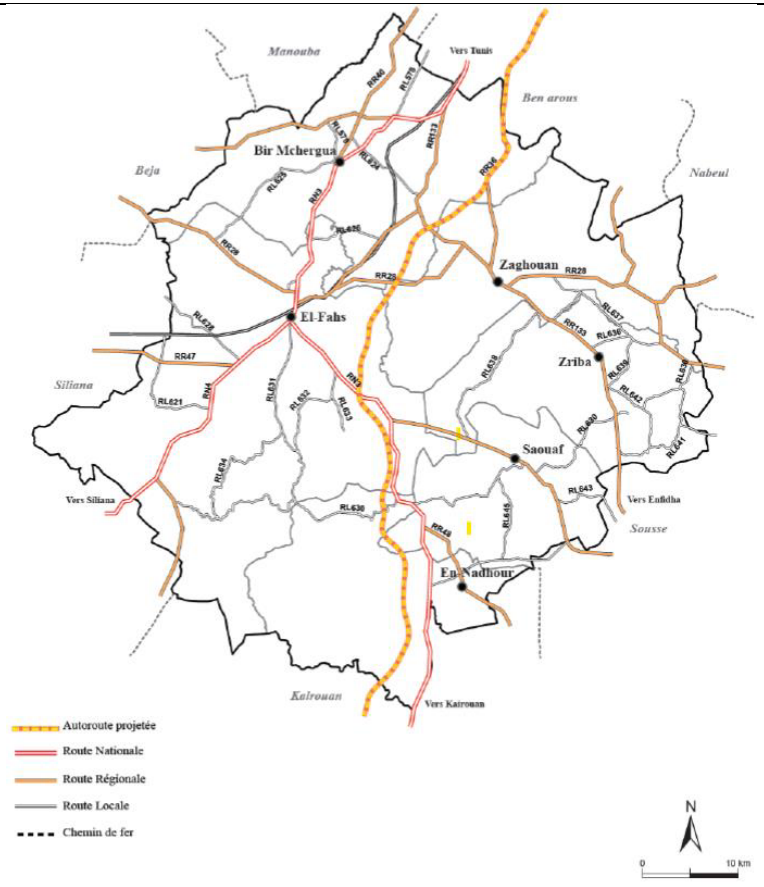

Figure 26: Zaghouan road network (Source: SDA Zaghouan)

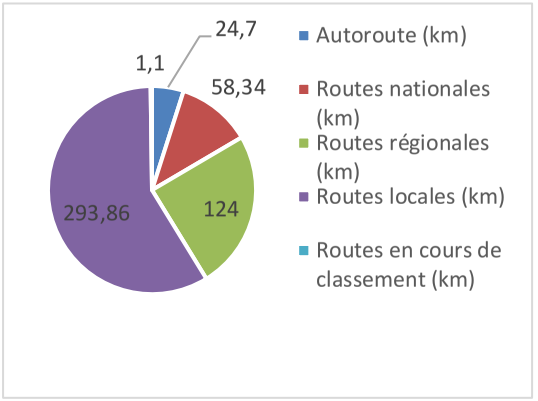

Figure 27: Type of road in the Manouba Governorate

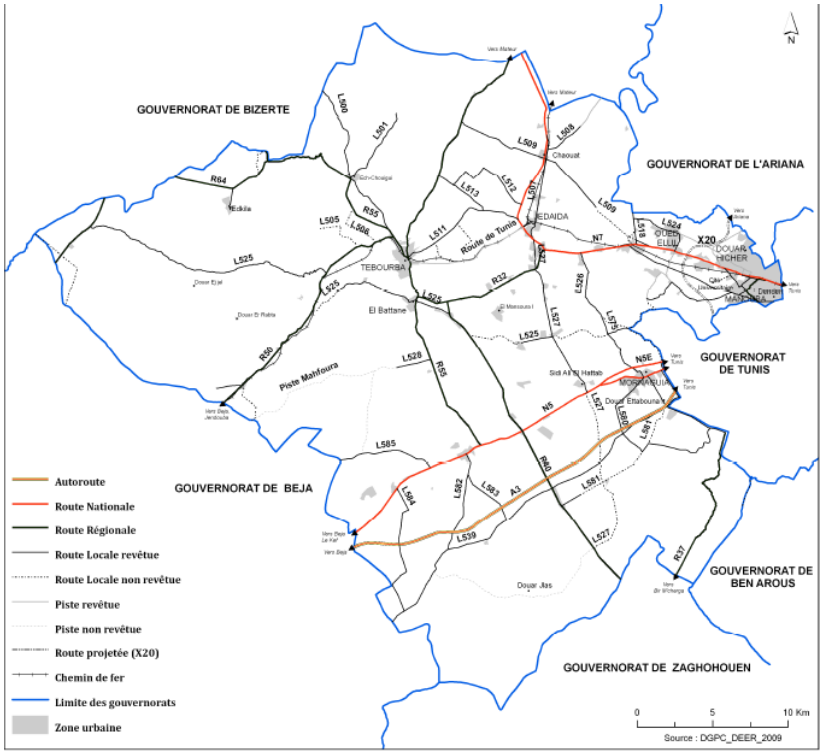

Figure 28: Manouba road network (Source: Atlas Manouba)

The figures above show the absence of highway connections in the Zaghouan region and that the Manouba region has the highest rate of roads being classified.

Figure 29 : Road and track in the project area

In general, the road network is not enough dense and the state of the roads is quite poor, which creates travel difficulties, especially in winter.

6.2 Water Supply

The drinking water supply rate in the project area is almost equal to 100%. The total population served is 2.2 million. The following table describes the situation by Governorate.

Table 7: Rate of drinking water supply and served population

Governorate	Nabeul	Ben Arous	Zaghouan	Manouba
Drinking water supply rate	99.20%	99.90%	98.60%	100%
Population supplied with drinking water (thousands of inhabitants)	866.4	719.9	188.8	425.8

Among the four governorates concerned by the project, the lowest Drinking Water Supply (DWS) network connection rate is observed in the Zaghouan region (85.8%) while the highest is observed in Ben Arous (99.8%) as shown in the table below.

Table 8: Household connection rate to the DWS network

Governorate	Nabeul	Ben Arous	Zaghouan	Manouba
Household water connection rate	95.30%	99.80%	85.80%	98.90%

Despite the high figures, the drinking water supply is experiencing major disruption due in particular to the state of the distribution network and the drought that the country is experiencing.

6.3 Wastewater Management

The total number of households connected to the sanitation networks is 473,200 households. The table below details the number of households connected to the sanitation network and the connection rate by Governorate.

Table 9: Number of households connected to the sanitation network and the connection rate

Governorate	Nabeul	Ben Arous	Zaghouan	Manouba
Number of households connected to the sanitation network	166,800	184,200	25,400	96,800
Household connection rate to the sanitation network	69.70%	91.60%	49.40%	79.90%

The table shows an imbalance between regions in terms of connection rate. Indeed, while the Zaghouan region has a sanitation network connection rate of 49.4%, the Ben Arous region has a rate of 91.6%.

6.4 Energy

The household connection rate to the electricity network is around 100% and the number of connected households is 612 500 households as shown in the table below.

Table 10: Access rates to electricity by governorate

Governorate	Nabeul	Ben Arous	Zaghouan	Manouba
Rate of connection of households to the electricity network	99.90%	99.90%	99.80%	99.90%
Number of households connected to the electricity grid	239 100	201,000	51,400	121,000

7. ECONOMIC ACTIVITIES

The governorates concerned cover a total area of 746,508 ha. The local communities' means of livelihood are predominantly based on crop farming. Fishing activities do occur but are not a main source of livelihood for the local communities. The impact on local communities' livelihoods is therefore mostly limited to the land acquisition process during pre-construction and construction, and to changes in the river flow during operation. During construction, no construction activity will occur outside the Project's footprints. Some impacts on fishing activities are expected during construction, while no impact on fishing activities is expected during operation.

Agricultural land represents 68%, non-farmable land represents 8%, while forests and pastures represent 24%. The details of this distribution by governorate are given by the following figures.

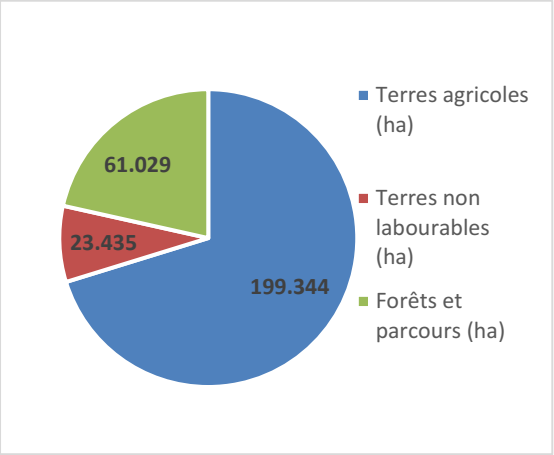

Figure 30 : distribution by land use category Nabeul

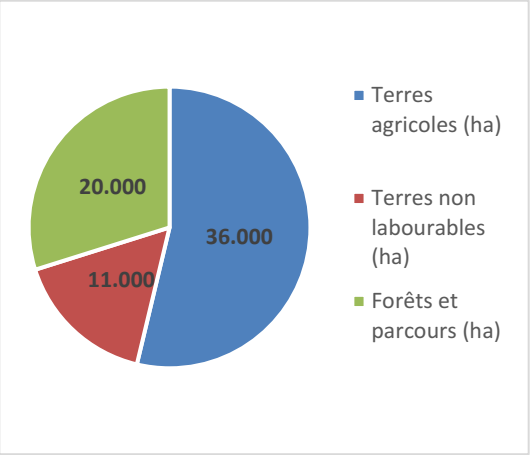

Figure 31distribution by land use category Ben Arous

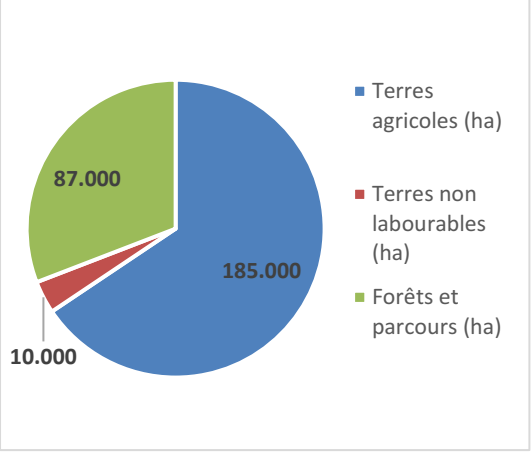

Figure 32: distribution by land use category Zaghouan

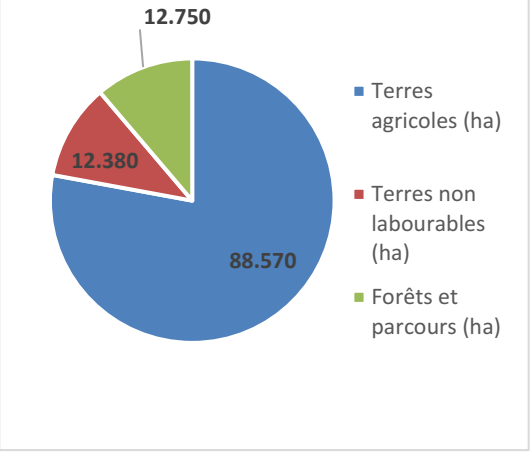

Figure 33: distribution by land use category Manouba

The distribution of land uses by delegation is given by the figure below:

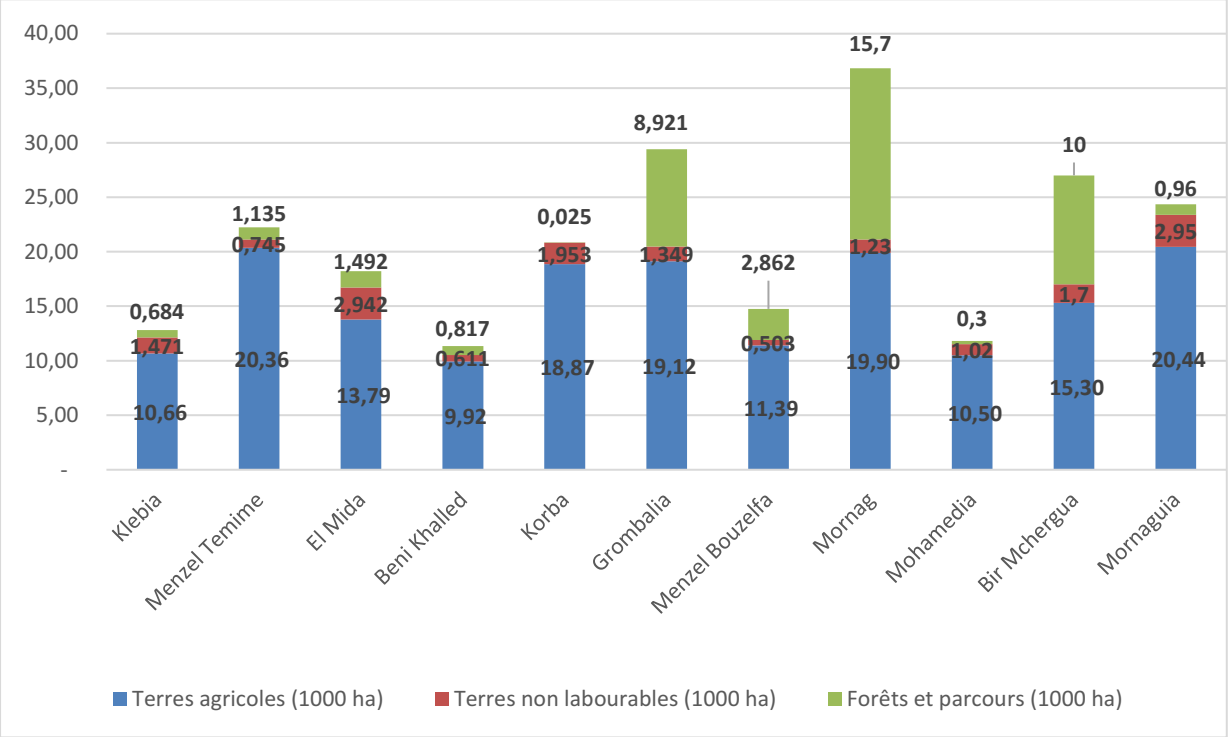

Figure 34: distribution by land use category

The figure shows that the delegations concerned by the project are mostly agricultural delegations. Indeed, the agricultural areas represent 74% of the total area of the delegations.

7.1 Agriculture

Agriculture is the most important economic sector in the project area. The figure below shows agricultural production by type and by governorate.

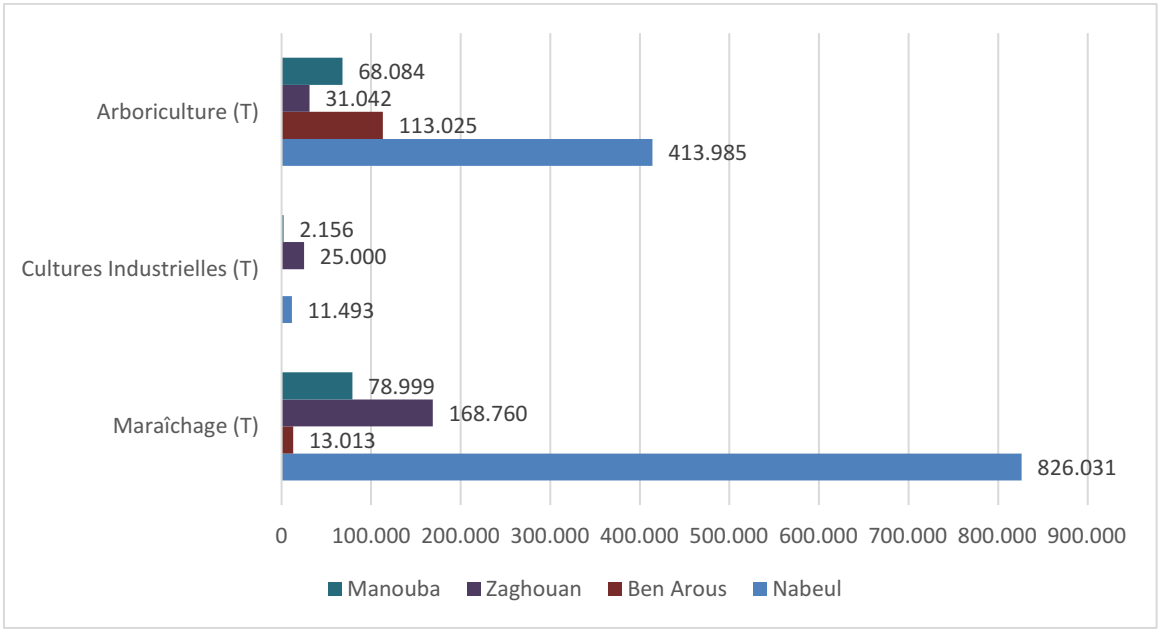

Figure 35: agricultural production by type and by governorate in 2020

Vegetable crops is the dominant agricultural activity in the four regions. In 2020, the total vegetable production is 1 086 803 tons, the total production of tree fruits is 626 136 tons.

The figure below shows vegetable production by delegation in 2020:

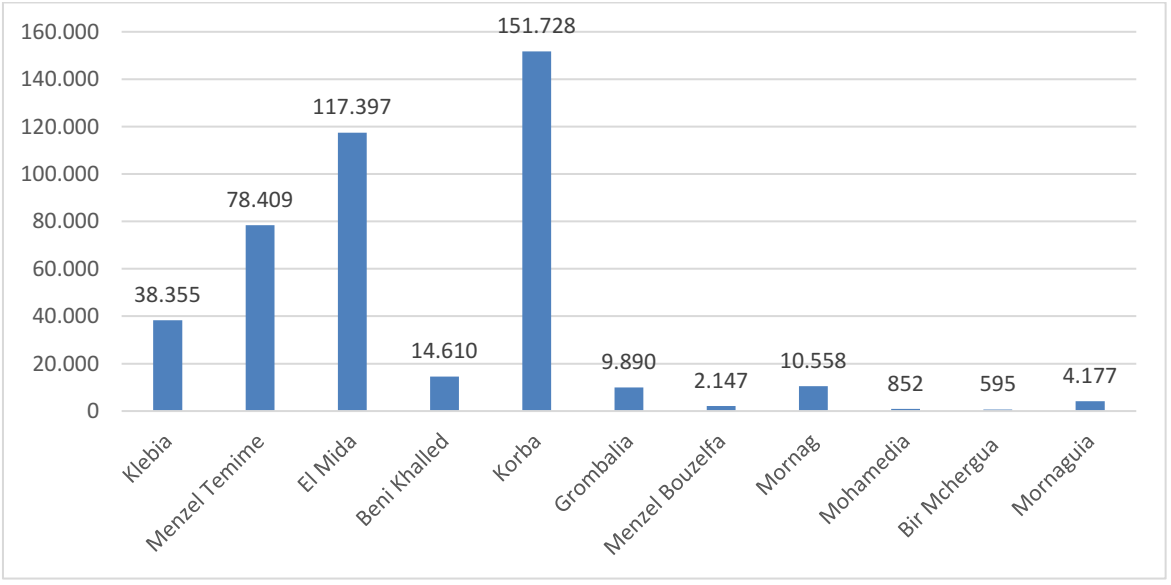

Figure 36: Vegetable production by delegation in 2020

The delegations of Korba, El Mida and Menzel Temime are those producing the largest quantities of vegetables with 151 728 T; 117 397 T and 78 409 T respectively.

The figure below shows tree production by delegation in 2020:

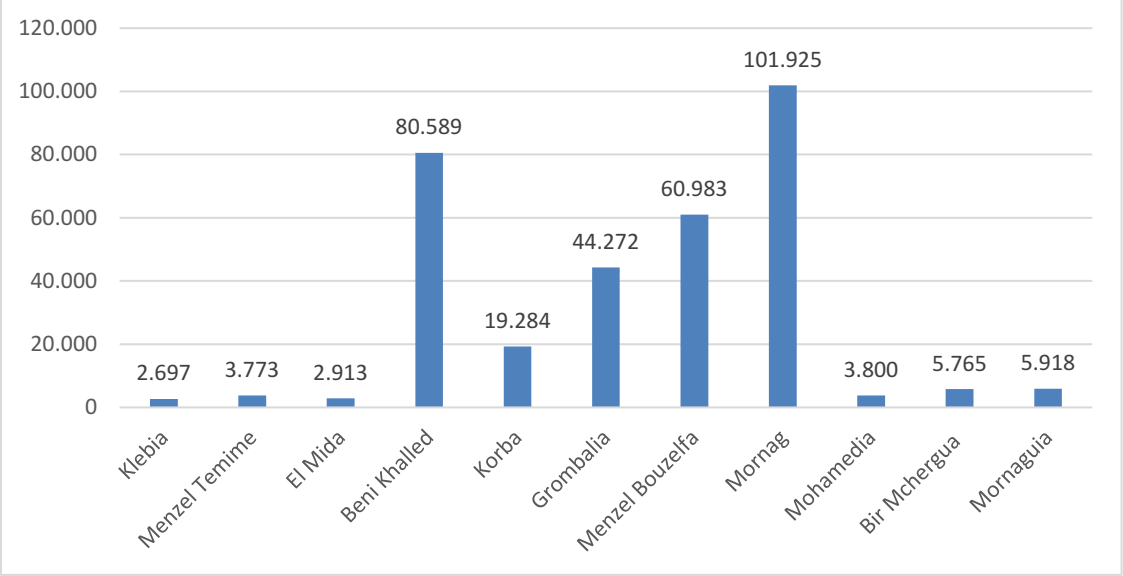

Figure 37: Tree production by delegation in 2020

The delegations of Mornag, Beni Khalled and Menzel Bouzelfa are the delegations that produce the largest quantities of fruit with 101 925 T; 80 589 T and 78 409 T respectively.

Industrial crops are only present in 5 delegations. The figure below shows the production of industrial crops by delegation in 2020:

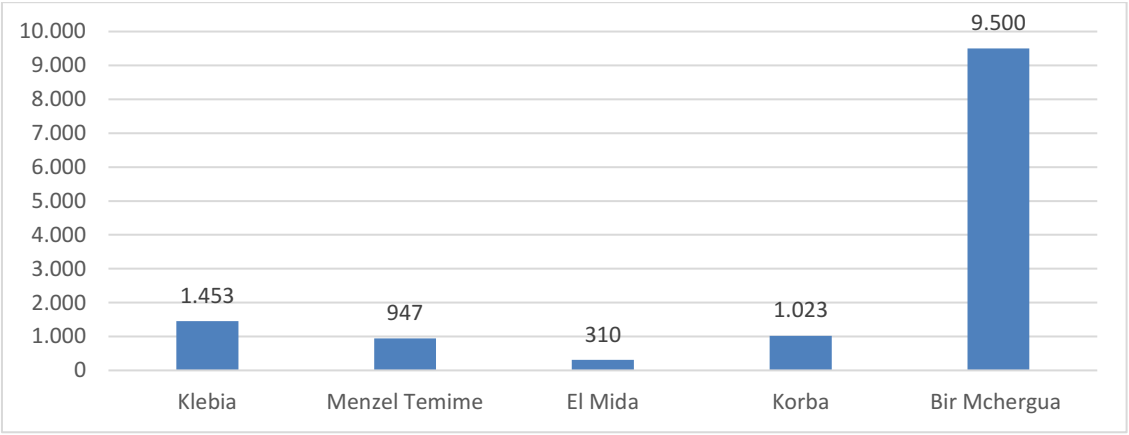

Figure 38: Production of industrial crops by delegation in 2020

Bir Mcherga's is the delegation that produces the largest quantities of industrial crops with 9500 tons.

7.2 Livestock

Livestock is a very important activity in the four governorates. There are cattle, sheep, goat and poultry farms. The figure below gives the size of livestock and the number of poultry units in the 4 governorates.

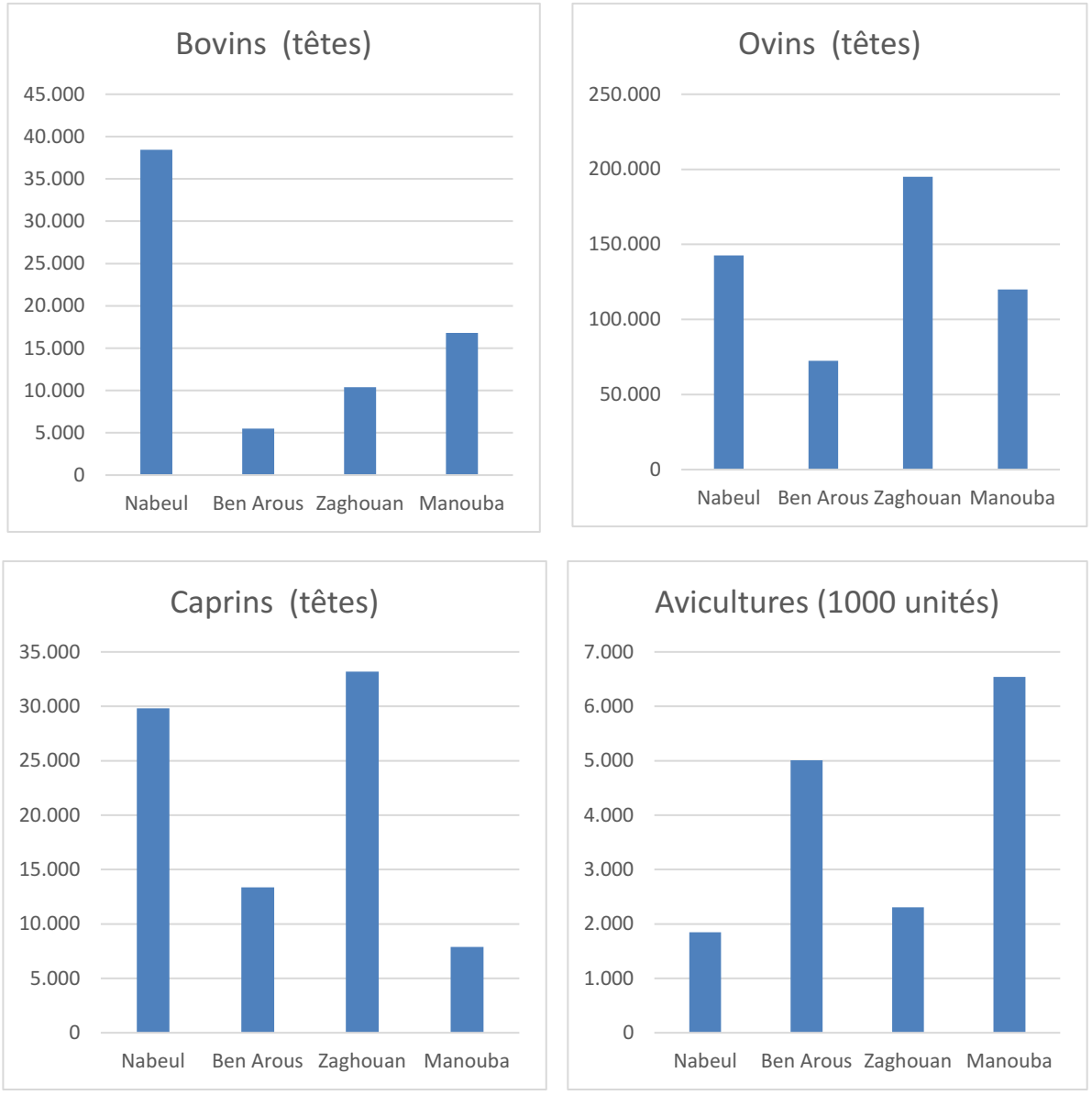

Figure 39: livestock sizes in the governorates

The four regions total 71 144 cattle, 530 127 sheep, 84 287 goats and more than 15 million poultry.

The figure below gives the size of the herds and the number of poultry units in the eleven delegations:

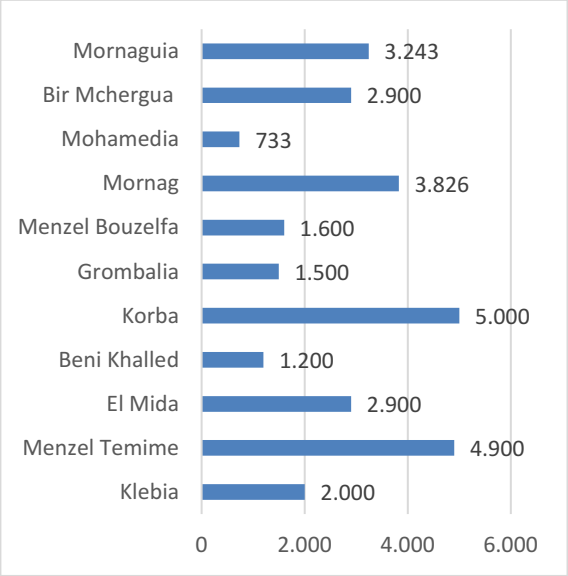

Figure 40: Number of bovine heads per delegation

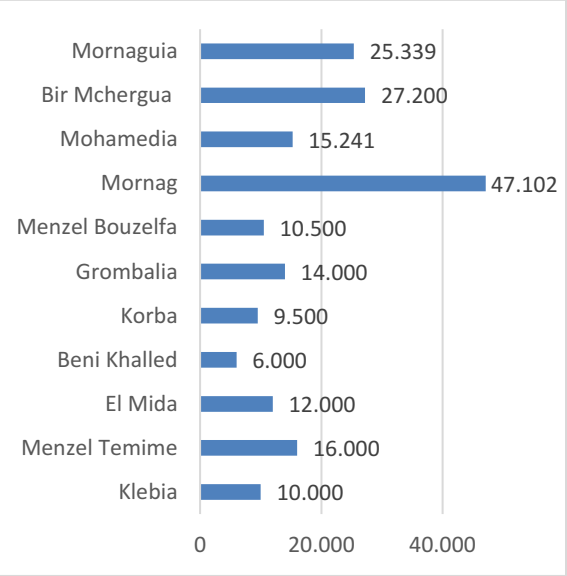

Figure 41: Number of sheep heads per delegation

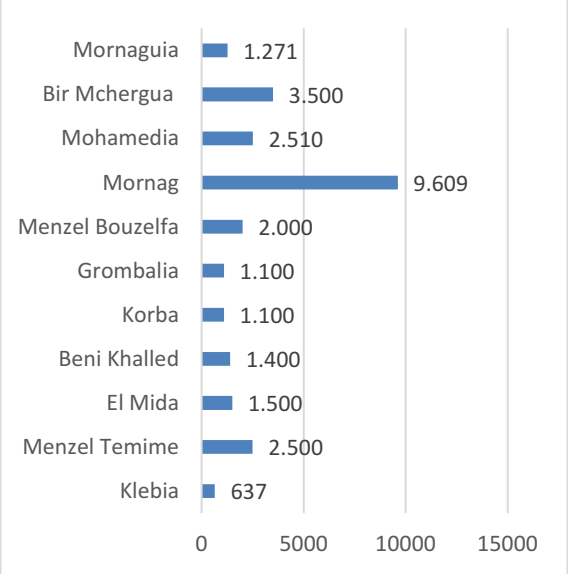

Figure 42: Number of goat heads per delegation

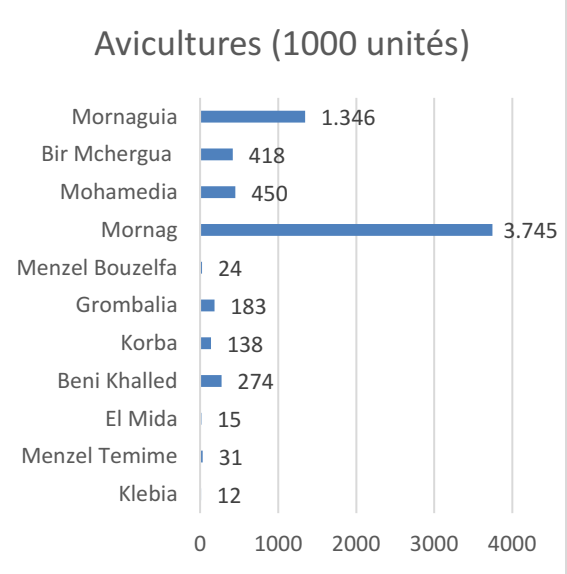

Figure 43: Number of poultry units per delegation

For cattle breeding, the Korba and Menzel Temime delegations have the largest number of head of cattle. For sheep, goat and poultry farming, the Mornag delegation is the largest with 47 102 sheep; 9 609 goats and 3.745 million poultry.

In recent years, breeders have encountered a lot of difficulty due in particular to the drought which has led to the reduction of grazing areas. In addition, the rise in feed prices for animal feed is making it difficult to maintain this activity in the area.

7.3 Fishing and Aquaculture Activities

Among the four governorates concerned, only two are coastal regions: The governorate of Nabeul with 698 fishing fleets and the governorate of Ben Arous with 312 fishing fleets. Fishing production is 15,008 tons for Nabeul and 244 tons for Ben Arous.

The fishing sector employs 3 410 people in the governorate of Nabeul and 624 people in the governorate of Ben Arous.

Table 11: Fishing figures in 2020

	Number of fishing fleets	Fishing production (T)	Job posts
Nabeul	698	15,008	3,410
Ben Arous	312	244	624

7.4 Tourism

At the National Level, tourism is based on mass seaside tourism. The tourism sector is one of the sectors that creates the most direct and indirect jobs. In 2019, tourism employed 11.14% of the working population. The table below details the availability of reception facilities in the 4 governorates.

Table12 : Touristic reception facilities by governorate

Governorate	Nabeul	Ben Arous	Zaghouan	Manouba
Number of hotels	157	3	4	
Number of beds in hotels	50,881		169	

Cap Bon is one of the most important tourist centers in the country and tourist activities is highly developed in the governorate of Nabeul. This governorate has 157 classified hotels and a capacity of 50,881 beds.

7.5 Industry

The industrial fabric in the four regions is quite dense and varied. The types of industry present in these regions are:

- Food Industry (IAA);
- Building Materials, Ceramics and Glass Industry (IMCCV);
- Mechanical and Metallurgical Industries (IMM);
- Electronics, Electrical and Appliance Industries (IEEE);
- Chemical Industries;
- Textile and Clothing Industry (ITH);
- Wood and Cork Industry and Furniture (IBLA);
- Leather and Footwear Industry (ICC);
- Miscellaneous industry (ID).

The composition of the industrial fabric of each governorate is shown in the figure below:

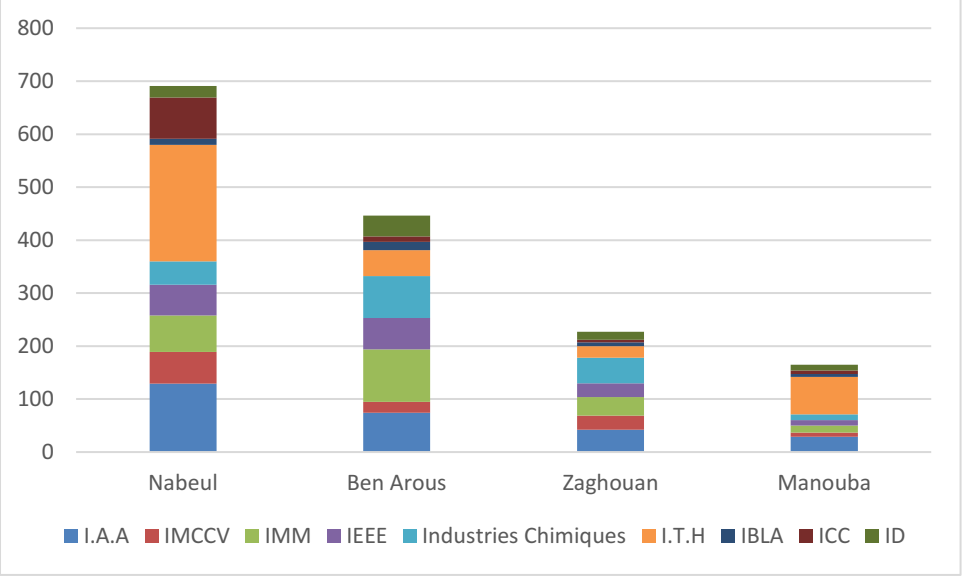

Figure 44: Presence of different types of industry in the four regions

The Agro-Food Industry and the Textile and Clothing Industry are the most present in the project area.

The composition of the industrial fabric in each delegation is shown in the figure below:

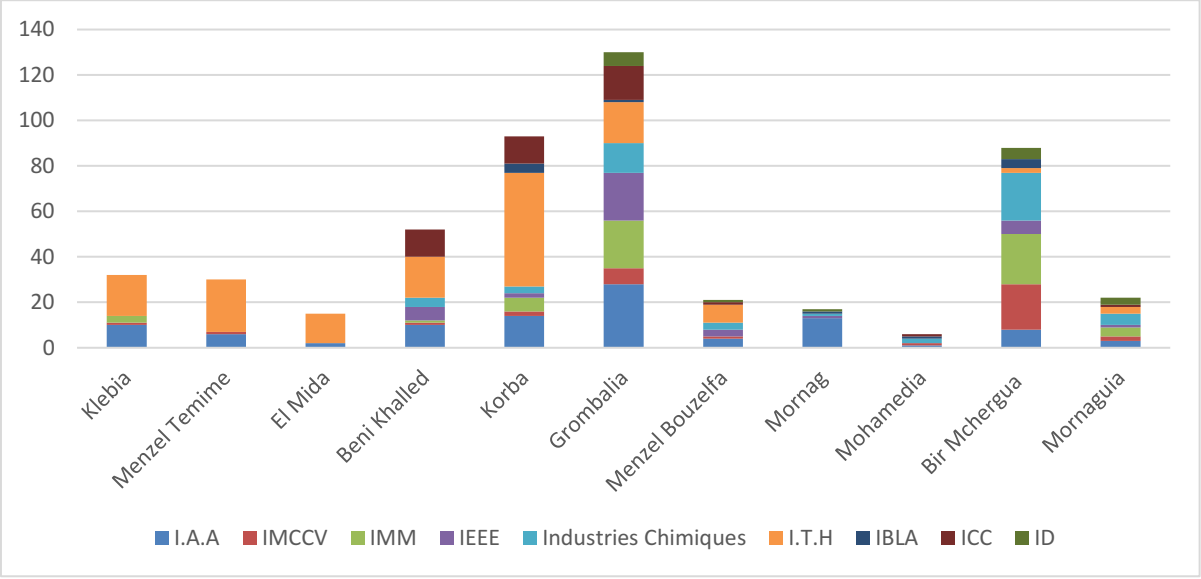

Figure 45: Presence of different types of industry in the delegations concerned by the project

The delegations of Grombalia, Korba and Bir Mcherga concentrate the largest number of industries with respectively 130; 93 and 88 industrial units.

The industrial sector is the most important in terms of job creation in the project area. The industry employs 118 348 people. The figure below shows the number of people employed in the different types of industry by delegation.

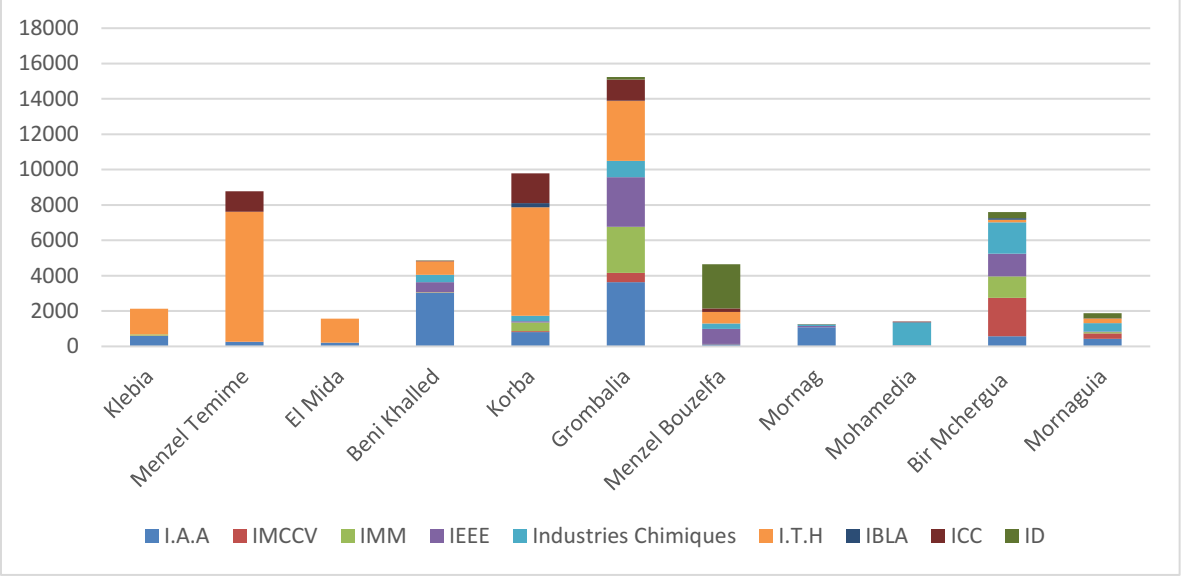

Figure 46: Number of people employed in the different types of industry by delegation

The textile and clothing industry is the industry that offers the most jobs (21 503 jobs), followed by the agro-food industry (10 825 jobs). The figure below shows the distribution of jobs by type of industry in the delegations concerned by the project:

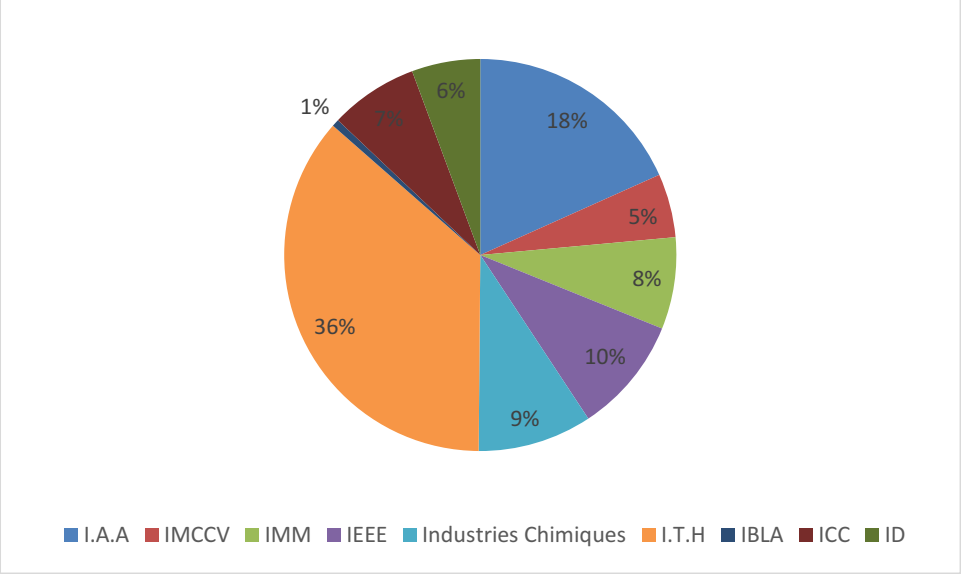

Figure 47: Distribution of jobs by type of industry in 2020

8. POVERTY AND INEQUALITIES

8.1 Poverty rate

The poverty rate at the national level is 21% of the population in 2020. The poverty rates by delegation are given by the following figure.

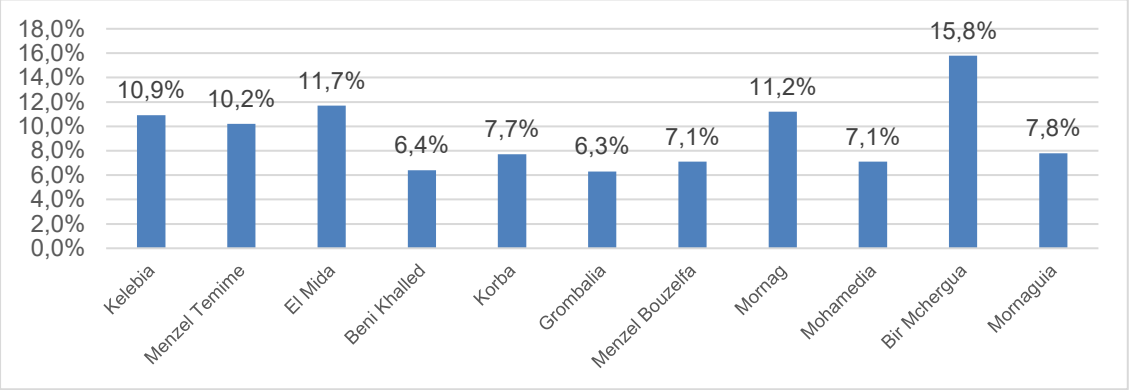

Figure 48: Poverty rate

The highest poverty rates are observed in the delegations of Bir Mcherga (15.8%), El Mida (11.7%) and Mornag (11.2%), but they are all below the national mean level.

8.2 Unemployment

The unemployment rate at the national level is 16.1% of the population in 2020. The unemployment rates by region in 2019 are given by the following figure:

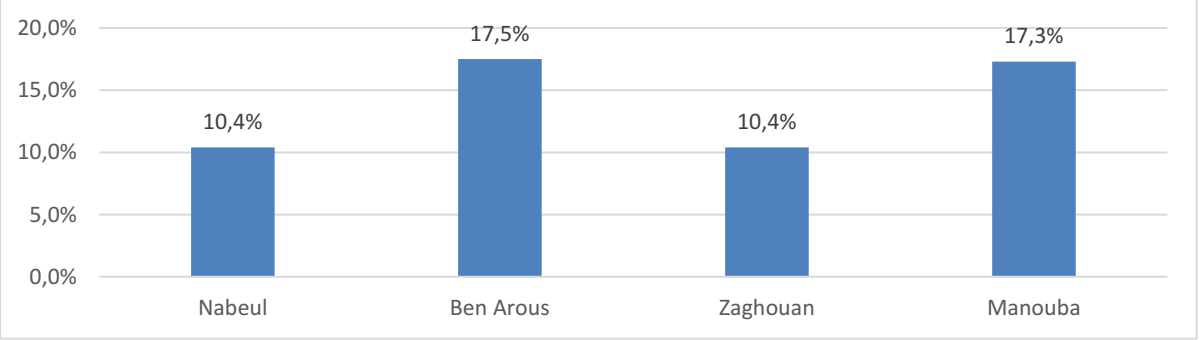

Figure 49: Unemployment rate by region June 2019

The figure below describes the evolution of the unemployment rate at the national level by gender:

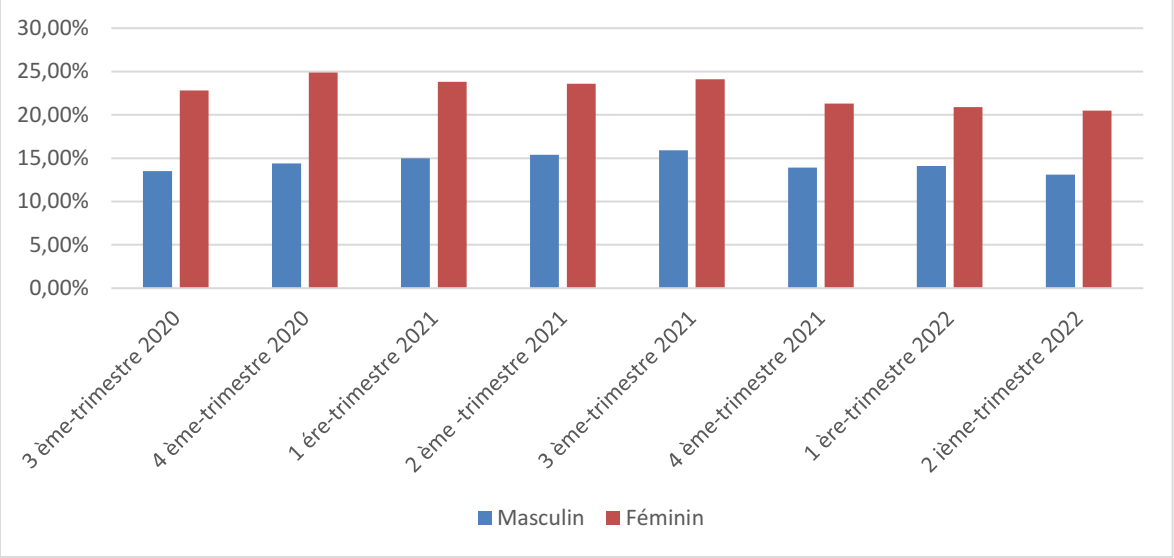

Figure 50: Evolution of the unemployment rate by gender

The graph shows a decrease in the unemployment rate in general. This reduction also concerns women, even though this rate remains quite high. Indeed, the national unemployment rates by gender in the second quarter of 2022 are 13.1% for men and 20.9% for women.

9. ARCHAEOLOGICAL HERITAGE

9.1 Nabeul Governorate

The governorate of Nabeul has more than 30 historical monuments inscribed on the Tunisian national heritage list, including one of the country's major ancient sites.

The archaeological site of Kerkouane is among the most important. It is a Punic site which is located in the middle between the two points of the peninsula (Haouaria and Kelibia), in the middle of a rural area. This site is classified as World Heritage.

The site of "Fort Kelibia" has lived through all the historical periods that Cap Bon has known and it sums up this story in a way. This citadel was built on top of a 1.50 m high rocky promontory which dominates the open sea on the northeast flank of Cap-Bon.

Figure 51: The archaeological site of Kerkouane

Figure 52: Fort Kelibia

9.2 Ben Arous Governorate

The governorate of Ben Arous has no less than 21 historical monuments inscribed on the Tunisian national heritage list, including one of the country's major ancient sites, Oudhna (ancient *Uthina*). The *Colonia Iulia Pietas Tertiadecimanorum Uthina* , known its apogee under the reign of the Antonines and Severes (2nd and first half of the 3rd century AD) and whose main remains consist of an amphitheater that can accommodate 15,000 spectators, a capitol whose dimensions make it the one of the largest temples in Roman Africa, public baths with an area of approximately 10,000 m^2 , dating from the time of Emperor Trajan.

It also has several patrician residences, the most important of which is the house of Ikariosqui (2300 m^2) and hydraulic monuments such as the aqueduct and the public cisterns.

This heritage is made up of a myriad of monuments as diverse as the Dar El Bey or Husseinite Palace of Hammam-Lif or the Rades aqueduct bridge.

Figure 53: Radès aqueduct bridge

Figure 54: Oudhna Archaeological Site

9.3 Zaghouan Governorate

The governorate of Zaghouan has an immense and very varied heritage potential, the number of which reaches 56 monuments which are still undervalued. The most famous ancient sites in the region are:

- The spa town of Jbel El Oust, presumably located on the ancient site of *Onellana* , halfway between the *Ciuitas* of *Uthina* and *Thuburbo Maius* and whose remains extend between the beginning of the Empire and the beginning of the 7th century. This site exhibits many remains from the Roman period, particularly a set of cisterns, probably connected to Hadrian's aqueduct and a pagan temple built in two phases (early empire and Antonine period) later transformed into a church. having hosted a Christian community, as well as magnificent thermal baths and sumptuous polychrome mosaics with floral and geometric motifs.
- *Thuburbo Maj*. This archaeological site is located on the banks of Oued Miliane in the vicinity of the city of Fahs and covers a total area of approximately 120 hectares. *Municipium* under the reign of Hadrian in 128, then honorary colony under Commodus (188), under the name of *Colonia Julia Aurelia Convenience* a. It exhibits several monuments such as the forum, the capitol and several temples including those of Mercury, Balaat, Saturn, Peace and the sanctuary of Caelestis, protective priestess of the city, as well as a Christian church of the 5th century refitted in the site of an ancient pagan temple and a basilica. Other public and private monuments have been unearthed there, including the thermal baths, the amphitheater and many houses.
- The city of Zaghouan. Nestled on the slopes of the eponymous Jbel, this immemorial city (former *Ziqua)* is a veritable palimpsest and a major component of the governorate's heritage. It conceals several archaeological and historical treasures including the nymphaeum better known as the Temple of the Waters built by the Emperor Hadrian around the year 130 AD. J.-C., and which is part of an imposing hydraulic complex combining four components: the capture of four sources, a 132 km aqueduct which ends in the cisterns of the Maalga which supply the Antonine baths in

Carthage [1]. Zaghouan is also known for its Andalusian medina built by the large community of Morisco refugees who came to settle after 1609 and whose major buildings are the Great Mosque, the marabout of the scholar Sidi Ali Azouz (early 18th century), but also the Hanafia Mosque, public fountains and the Rabha (public square).

Finally, the heritage is represented in the governorate by the national park of Jbel Zaghouan (creation decree dated March 29, 2010) which covers 40.2 km ^{2}. It abounds in a very rich and diversified flora and fauna, the most remarkable species of which are the holm oak, the Aleppo pine, the kermes oak and the carob tree, while the golden eagle, the peregrine falcon, Egyptian vulture, wild boar, jackal, mongoose, hare, lizard and grass snake are the main species of fauna. In addition to this biodiversity, there is great beauty of the landscapes and attractions such as the karstic caves ("Gouffre des 4 fous" with a depth of 265 m).

Figure 55: Aqueduct Roman

Figure 56: Nymphaeum of El Ain Kasbah

9.4 Manouba Governorate

The governorate of Manouba conceals numerous archaeological remains, including no less than 14 monuments classified on the list of Tunisian national heritage. They cover the period from antiquity to modern times and whose main jewels are a portion of Hadrian's aqueduct extending between Manouba and Jdeïda, the dam bridge of El Battan, completed in 1690, and work of Morisco refugees who came to settle in Tunisia at the beginning of the 17th century.

A good part of the governorate's archaeological heritage is made up of hydraulic installations and rural developments, as well as princely residences and industrial units (sheet factories, mills, etc.) dating back to the Mouradite and especially Husseïnite periods. The region is also renowned for its many historic towns and villages including the Julian colony of Tébourba de Thuburbo Minus (current Tébourba) and which are full of religious buildings (the Great Mosque of Tébourba , the Zawiya of Sidi Ben Aïssa , the mosques al - Haj Ramdhân al - Andalusî and Jaafar).

[1]The dossier for this hydraulic complex was submitted in 2012 for inclusion on the World Heritage Tentative List ,

Figure 57: El Battan dam bridge

Figure 58: Sainte-Félicité and Sainte-Perpétue church in Tebourba