

Regional Initiative for Promoting Small-scale Renewable Energy Applications in Rural Areas of the Arab Region

Study on Gender Mainstreaming, Social Inclusion, Human Rights Processes and Outcomes of Access to Energy in Targeted Local Communities in Tunisia

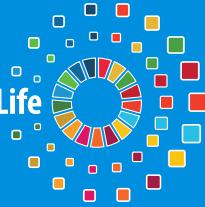


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Economic and Social Commission for Western Asia

Regional Initiative for Promoting Small-scale Renewable Energy Applications in Rural Areas of the Arab region (REGEND)

Study on Gender Mainstreaming, Social Inclusion,
Human Rights Processes and Outcomes of Access
to Energy in Targeted Local Communities in Tunisia

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Preface

The Energy Section in the Climate Change and Natural Resource Sustainability Cluster (CCNRS) at the United Nations Economic and Social Commission for Western Asia (ESCWA) prepared this report, within the context of the Regional Initiative for Promoting Small-scale Renewable Energy Applications in Rural Areas of the Arab Region (REGEND). The initiative was launched by ESCWA in partnership with the Swedish International Development Cooperation Agency (Sida).

REGEND is being implemented with a view to supporting rural communities across the region, and is currently being rolled out in three pilot countries, namely the Hashemite Kingdom of Jordan, the Lebanese Republic and the Republic of Tunisia. It provides for the assessment of key areas, including access to energy, entrepreneurial development, gender mainstreaming, social inclusion, human rights and building resilience to climate change. REGEND will help identify challenges and recommendations to ensure that renewable energy technologies, entrepreneurial development, education, awareness-raising activities and policy formulation promote gender mainstreaming and the economic empowerment of women.

The report covers the case study for Tunisia, and was prepared by Hatem Miliki, gender expert, with substantive contribution and supervision by Radia Sedaoui, Chief of the Energy Section. Valuable inputs were provided by Narjess Hamrouni Idriss, General Director,

Rural Women Support Office (BAFR) at the Ministry of Agriculture, Water Resources and Fisheries; Khaled Bedoui, ESCWA Consultant in Tunisia; and Mohamed Zied Gannar, Energy Section Economic Affairs Officer, ESCWA. Fidele Byiringiro, Economic Affairs Officer, and Jil Amine, Sustainable Development Officer, both at ESCWA, provided peer review. Support was provided by Maya Mansour, Research Assistant and George Saliba, Individual Contractor at ESCWA.

Data sources

The report uses data from a number of sources, including key national stakeholders and members of the REGEND national facilitating team, including: Mohamed Abdessalem, Central Director, General Commission for Regional Development (CGDR); Nafâa Baccari, Director of Renewable Energy, National Agency for Energy Conservation (ANME); Helene Ben Khemis, Chief of Section, ANME; Kaouther Kouki, Chief of Service, Agency for the Promotion of Agricultural Investments (APIA); and Hedia Sassi Chaabouni, Director, National Water Distribution Utility (SONEDE), Tunisia. The report draws on the outcomes of the study for Tunisia, and those related to national and regional workshops and focus group discussions.

Executive Summary

Since 2011, Tunisia has undergone a complex political transformation that paved the way for public sector management and governance reform. This has included a restructuring of institutional mechanisms and, to ensure greater transparency and accountability, participation of the population in decision-making at all levels.

The fundamental rights and freedoms enshrined in the new constitution of 2014 have allowed citizens movements to emerge in different areas, advocating for an end to all forms of insecurity, exclusion and discrimination.

The political progress achieved remains fragile given the presence of strong inequalities between regions and areas (rural/urban), and the rise of social movements in disadvantaged areas calling on the Government to develop interior regions according to specific need. Political instability has limited public finances, while the complexity of reforming public administrations reduces the ability of authorities to achieve meaningful change.

The country is experiencing a slowdown in economic growth, relatively high inflation and a chronic and structural deficit in its balance of payments. A greater reliance on debt, especially foreign debt, is becoming more prevalent. At the national level, a debate is under way on the need for more significant reform of management and governance of public finances.

The debate on public finance reform is largely concerned with the compensation policy that has been in place for many years, including a significant part related to energy subsidies. Since 2000, Tunisia has had a deficit in its energy balance, which in 2018 reached one third of the

country's overall trade deficit. A solar plan has been adopted that favours renewable energy (RE), with the target of reaching 30 per cent of the electricity mix by 2030.

Since 2011, Tunisia has undertaken reforms aimed at enhancing gender equality. Changes include women's political participation (parity in national and local elections), addressing violence against women, and the lifting of reservations to the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW). The improvement noted in Tunisia's ranking ahead of other Arab countries, such as Algeria and Jordan, according to the Global Gender Gap index remains limited in the economic sector.

Despite their access to and progress in education, and access to health, employment and political life, women remain vulnerable, particularly in rural areas. According to the 2014 general population census, the unemployment rate for women was 21 per cent (compared with 12 per cent for men), their participation rate in economic life was 28 per cent (72 per cent for men) and they represented more than 67 per cent of the illiterate population. The wage gap between men and women was about 35 per cent in 2012.

In rural areas, where women represent 32 per cent of the total female population of Tunisia, their situation is more problematic. Only 4 per cent of women own land and 6 per cent livestock. Access to finance is extremely low and financial and commercial decision-making within households remains dominated by men. These difficulties are compounded by the higher participation of women in unpaid productive activities, as low-

wage labourers and under poor work conditions that can threaten their lives. Several fatal accidents have been recorded relating to the transport of women workers from rural areas.

- Within this context, ESCWA launched the Regional Initiative for Promoting Small-scale Renewable Energy Applications in Rural Areas of the Arab region (REGEND). The main objective is to improve livelihoods, satisfy energy needs, increase economic benefits, ensure social inclusion and promote gender equality for Arab rural communities, particularly marginalized groups. REGEND adopts an integrated rural development approach with a focus on enabling the agency of rural women. It seeks to demonstrate that development-driven approaches attuned to entrepreneurship and local knowledge are more sustainable in addressing gender inequality, economic disempowerment, political exclusion, natural resource challenges and other social vulnerabilities.
- This report, based on a human rights-based approach, feeds into the 2030 Agenda for Sustainable Development. It focuses on Sustainable Development Goal (SDG) 7 on affordable and clean energy, SDG 5 on gender equality, and SDG 10 on reducing inequality. Beginning with an analysis of gender conditions in Tunisia, it pays particular attention to gender mainstreaming mechanisms in national energy policies, especially promoting women's entrepreneurship in rural areas. The objective is to formulate practical recommendations for gender-based social inclusion in energy access programmes aimed at promoting the use of small-scale RE technologies, within the framework of local entrepreneurial development and income-generating activities in rural areas.
- Tunisia still has difficulty implementing an effective policy for the economic emancipation of women, particularly rural women. In addition to the absence of certain

gender equality indicators in the economic sector (investment, access to credit, financial and commercial transactions), scant data and, therefore, gender analysis are available in the energy field. This statistical weakness, despite annual gender report publications, must be addressed to better guide policymakers and stakeholders.

- Despite the interest of the Tunisian authorities in espousing gender equality through policies promoting rights, freedoms and participation in public life, there are few programmes to improve women's economic equality, especially in rural areas.
- The use of small-scale RE technologies in rural areas has several important advantages. It contributes to improving the country's energy balance and promoting agriculture that respects the environment. Further, it can be an effective tool for improving the environment, and the productivity and performance of the rural economy. And, above all, it is an efficient alternative for facilitating women's economic empowerment, offering them socioeconomic opportunities.
- Piloting gender-focused programmes and projects for access to energy, particularly RE, in rural areas requires better coordination between institutions. The weakness here is more prevalent at local level and must be addressed to improve the relevance, effectiveness and sustainability of interventions.
- Access to small-scale RE technologies for productive activities in rural areas must be systematically combined with action to support economic sectors. This will help promote territorial development, improve living conditions, tackle poverty and promote community resilience and empowerment.
- Gender-disaggregated data and indicators must be elaborated to measure the effectiveness of energy policies in rural

areas, including the use of RE. These should be subject to continuous monitoring and periodic publishing, including in the annual national gender report.

- Extensive capacity-building and curricula in vocational training on RE operation and maintenance for both men and women must be reinforced, ensuring that activities promote gender equality.
- Financial institutions must become involved, especially microfinance units, in adopting

preferential measures in favour of gender and RE in rural areas. These may involve granting credits for creating/extending projects for women using RE with appropriate facilities.

- The role of civil society in rural areas working in the field of renewable energy and gender justice/mainstreaming must be strengthened to support awareness training for rural women and responsible advocacy with public authorities, and international programmes and institutions.

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Abbreviations

ANME	Agence Nationale pour la Maîtrise de l'Énergie (National Agency for Energy Conservation)
APIA	Agence de Promotion des Investissements Agricoles (Agricultural Investment Promotion Agency)
BFPME	Banque de Financement des Petites et Moyennes Entreprises (Financing Bank for Small and Medium Enterprises)
COLIBE	La Commission des libertés individuelles (Commission on Individual Liberties and Equality)
CRDA	Commissariat Régional de Développement Agricole (Regional Commission for Agricultural Development)
GDA	Groupement de Développement Agricole (Agricultural Development Group)
GDP	gross domestic product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Agency for International Cooperation)
INS	Institut National de la Statistique (National Institute of Statistics)
ISIE	Instance Supérieure Indépendante pour les Élections (Independent High Authority for Elections)
MW	megawatt
NGO	non-governmental organization
PV	photovoltaic
RE	renewable energy
Sida	Swedish International Development Cooperation Agency
SMSA	Société Mutuelle de Services Agricoles (Mutual Society of Agricultural Services)
STEG	Société Tunisienne de l'Electricité et du Gaz (Tunisian Company of Electricity and Gas)
TSP	Tunisian Solar Plan

Introduction

On 17 December 2010, a 26-year-old street vendor named Mohammed Bouazizi had his produce cart confiscated by a policewoman who insulted and physically attacked him. In response to his public humiliation, he set himself on fire in front of the local municipal building in his hometown Sidi Bouzid. The suicide fed into the narrative on governmental corruption, social inequalities, unemployment and political repressions, leading to protests in Sidi Bouzid and spreading across Tunisia for 28 days. This eventually led to the ejection from office of President Zine El Abidine Ben Ali. The revolution inspired other Arabs throughout the Middle East to rise up against oppression and corrupt Governments.

Since 2011, Tunisia, a country of some 11.7 million inhabitants, has undergone a political transformation and faces institutional, social and economic challenges. The constitution

adopted in January 2014 advocates for a political system based on a parliamentary regime with separation of powers, the adoption of human rights and the establishment of a decentralized system of local affairs.

Despite the gains in human development, individual freedom and civil and political rights, the country continues to face high rates of unemployment (more than 15 per cent), particularly among young graduates. There is significant inequality between regions and strong disparities between urban and rural areas. The slowdown in economic growth in the past 10 years, as well as the high levels of indebtedness and budget deficit, reduce Tunisia's ability to deal with rising social unrest.

The adoption of better governance, gender equality and anti-violence laws, and the

Table 1 Key socioeconomic indicators

Population, July 2019	Million	11.7	Human Development Index value	0.735	GDP per capita, PPP	\$	11 599
Population growth	% per annum	1.1	Human Development Index, rank out of 189	95	Gini Index 2015	%	30.9
Life expectancy	years	75.5	UN Education Index	0.685	Poverty	%	9.1
Urban population	%	67.0	Gender inequality	0.289	Aid per capita	\$	42.1
Unemployment rate, fourth quarter 2019	%	14.9	Inflation, February 2020	5.8%	Economic growth, fourth quarter 2019	%	0.8
Poverty rate, 2015	%	15.2	Extreme poverty, 2015	2.9%			

Note: GDP per capita, PPP is gross domestic product converted to international dollars using purchasing power parity rates and divided by total population; Human Development Index value is a summary measure of average achievement in key dimensions of human development, such as a long and healthy life, being knowledgeable and have a decent standard of living; The Education Index is a component of the HDI calculated through the average of two indicators: mean years of schooling and the expected years of schooling; Gini Index is a statistical measure of distribution used as a gauge of economic inequality, measuring income distribution among a population.

establishment of several independent bodies (access to information, anti-corruption, fight against torture, protection of personal data), are important steps forward. Due to severe precariousness, however, they remain limited, particularly in rural areas, especially those related to women's rights.

Despite political transformation, Tunisia continues to experience considerable regional inequality that essentially marks rural areas and affects, in particular, the most vulnerable populations, including women. The success of democratic transition thus depends on the promotion of human rights and social inclusion of vulnerable groups.

Deep reform of public local affairs management and governance is required. In addition to difficulties related to political and institutional restructuring, Tunisia faces significant economic challenges that hamper its ability to reduce major disparities between regions, especially high unemployment, poverty and low literacy in rural areas.

With an average economic growth rate of about 2 per cent over the past seven years,¹ the country is increasingly weakened by a chronic current account deficit, rising indebtedness and inflation, recurrent devaluation and, importantly, an increasing energy deficit since 2000.²

In 2008, Tunisia developed and implemented a solar plan to consolidate its energy conservation policy, emphasizing renewable energy (RE) technologies and applications. The Tunisian energy transition policy – which since 2014 has aimed at providing 30 per cent of electricity from RE by 2030 – led to the reinforcement of the 2012 Tunisian Solar Plan (TSP) and its update through the adoption in 2018 of an action plan for the acceleration of RE projects.³

This ambitious strategy focuses on reducing the national energy deficit, though success remains linked to resolving other problems in the country, including reducing regional disparities

and gender inequality, particularly in the largely disadvantaged rural environment.

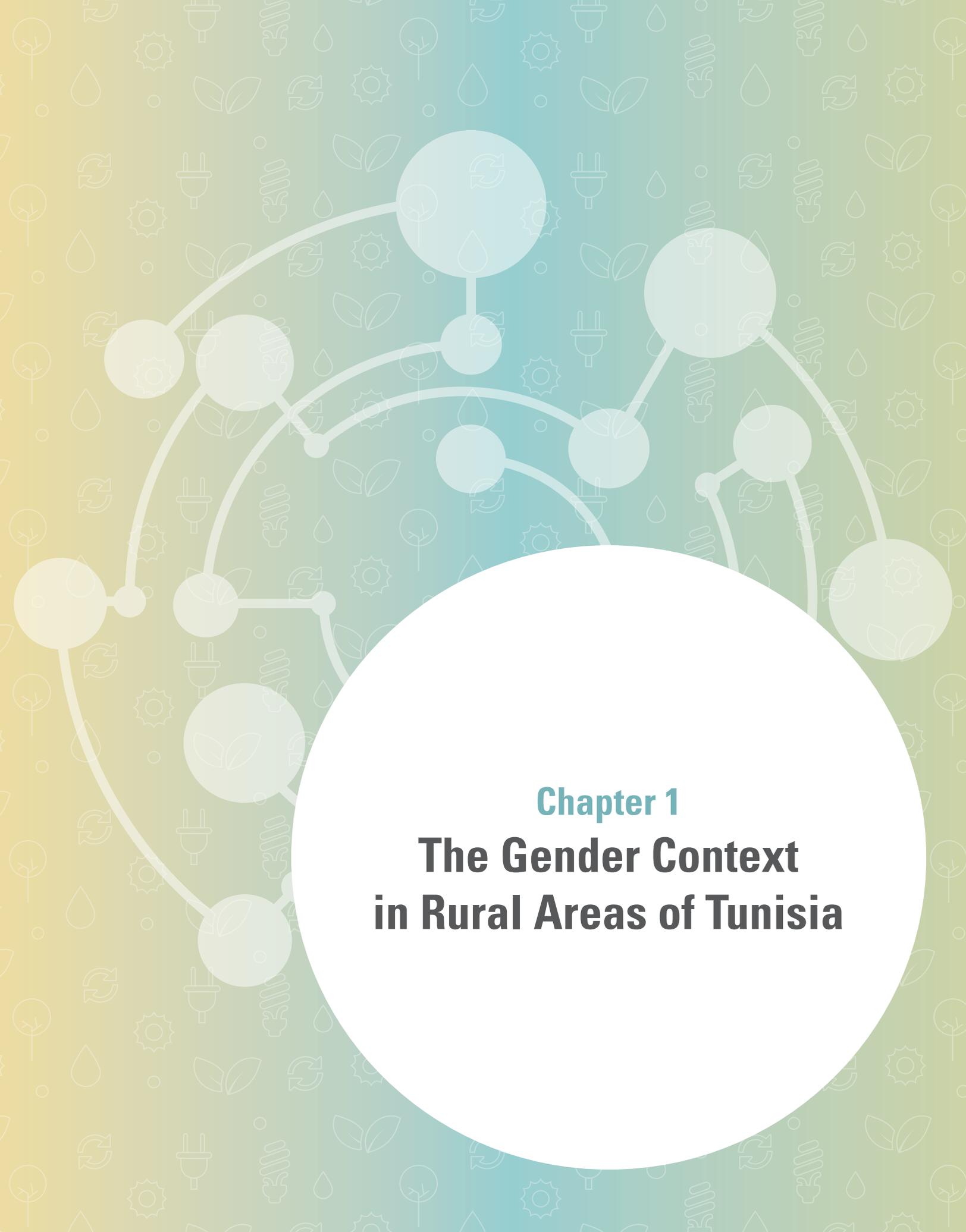
Within this context, ESCWA launched the Regional Initiative for Promoting Small-scale Renewable Energy Applications in Rural Areas of the Arab Region (REGEND) in partnership with the Swedish International Development Cooperation Agency (Sida). The main objective is to improve livelihoods, economic benefits and social inclusion, and promote gender equality in Arab rural communities, marginalized groups in particular, while also satisfying their energy needs.

REGEND will place emphasis on addressing energy poverty, water scarcity and vulnerability to climate change by promoting pro-poor investments using appropriate small-scale RE technologies for productive activities and entrepreneurial development. In addition, the project will showcase supporting initiatives to stimulate private sector investment, entrepreneurial development and women's empowerment. Such initiatives will stress job creation and development of robust value chains, in a nexus approach to encourage a sustainable economy.

The report, based on a human rights-based approach, feeds into the 2030 Agenda for Sustainable Development. It focuses on SDG 7 (clean and affordable energy), SDG 5 (gender equality) and SDG 10 (reducing inequality). Further, it endeavours to ensure gender issues are systematically integrated at each stage of the project cycle and involve all national and local stakeholders. It will include a study of the socioeconomic context of project intervention, with an overview of key gender issues, constraints and opportunities to support: (a) the strengthening of practices in the energy sector; (b) women's empowerment by way of rural employment, based around cultural tradition and education; and (c) the local private sector in promoting and expanding the use of small-scale RE technologies and their associated environmental benefits.

The aim is to define practical and sustainable ways of mainstreaming gender through the project approach, via: (a) assessment of the gender aspects in public development policies, with a focus on the main challenges and opportunities in rural areas; (b) analysis of the national energy policy; and (c) definition of a viable business model that supports access to small-scale RE technologies in rural areas. The goal is to formulate practical recommendations for gender-based social inclusion in energy access programmes promoting the use of small-scale RE technologies, within the framework of local entrepreneurial development and of income-generating activities.

The report is composed of five chapters. Chapter 1 examines the gender approach in Tunisia based on statistical data, focusing on public policies, particularly in rural areas. Chapter 2 identifies the challenges of integrating gender in public development policies, especially in relation to the energy sector, while chapter 3 analyses the risks and opportunities, and data gaps, of gender mainstreaming in actions promoting RE. Chapter 4 develops an action plan for gender mainstreaming in project activities, and chapter 5 provides recommendations for moving forward.

The background features a repeating pattern of small, light-colored icons including leaves, gears, water droplets, and recycling symbols. Overlaid on this is a network diagram consisting of several interconnected circular nodes of varying sizes, some containing icons like a leaf or a gear, connected by thin white lines. A large white circle is positioned in the lower right quadrant, containing the chapter title.

Chapter 1
The Gender Context
in Rural Areas of Tunisia

1. The Gender Context in Rural Areas of Tunisia

A. Context

As regards public policies, gender mainstreaming is an approach that takes into account both women's and men's interests and concerns. They must be treated equally and not be subjected to discrimination, except in cases where the differentiation is justified by a valid biological difference. The gendered approach focuses on power relations between men and women on the basis of socially constructed roles. In practical terms, this analysis covers the following areas:

- Identity;
- Social and gender norms;
- Roles and responsibilities;
- Access to and control over resources;
- Participation in household decision-making;
- Participation in public decision-making;
- Access to public spaces and services;
- Violence and justice;
- Aspirations.

In Tunisia, the general principle of equality dates back to independence. The Code of Personal Status, promulgated on 13 August 1956, and still in force after coming into effect on 1 January, enshrined several principles, including the prohibition of polygamy, introduction of judicial divorce, setting the minimum age of marriage for women at 17 years with the condition of their consent, and the mother's right of guardianship over her minor children. These were supported by the constitution, drafted in June 1956 after the country's independence, article 6 of which stipulated, "all citizens have the same rights and duties" and "are equal before the law".

The constitution also recognized in articles 20 and 21 that "women are voters and are eligible to vote".

Since then, several important reforms promoting gender equality have been adopted, including those relating to social rights, such as the following:

- Non-discrimination between men and women in all aspects of work;
- Automatic granting of family allowances to the mother who has custody of the children;
- Unification of eligibility criteria for benefits, in terms of social security coverage, between the public and private sectors, to guarantee gender equality;
- Continuation of the payment of orphans' pensions for children pursuing higher education until the age of 25;
- Possibility for both spouses to take out an individual loan for the purchase of the shared home.

Other measures have been introduced concerning social protection, labour law, marriage, divorce and maintenance. These achievements were reinforced by the constitution of 27 January 2014, which preserved women's rights and adopted the principle of equality between women and men. Article 34 provides that "election rights, to vote and to run as candidate are guaranteed, in accordance with the provisions of the law. The State shall ensure the representation of women in elected assemblies".

In addition, according to article 46, "the State shall guarantee the rights acquired by women, preserve them, and strive to improve them". It

provides that “the State shall guarantee equal opportunities for men and women to assume the various responsibilities and in all areas. The State is working to achieve parity between men and women in elected councils. The State shall take the necessary measures to eradicate violence against women”.

As a result, on 26 July 2017, the Organic Law on Elimination of Violence against Women was adopted. This amended article 277 of the Penal Code, stipulating that “anyone who has sexual intercourse with a consenting minor under 16 years of age and anyone who has sexual intercourse with a consenting minor over 16 years of age and under 18 years of age shall be punished with a double penalty, if the accused is a member of the victim’s immediate entourage”. The law also provides for significant penalties that punish sexual harassment of women in the public space.

Law No. 16 of 2014 on legislative and presidential elections and referendums had introduced the principle of vertical parity, and women made up 31.3 per cent of the Assembly of People’s Representatives, elected in 2014. Amendments in January 2017, following the adoption of provisions concerning local elections, introduced horizontal parity and, in the municipal elections of 6 May 2018, allowed a strong women’s presence; up to 47.5 per cent of those elected were women. Women made up 29 per cent of positions at the head of municipal electoral lists, and Tunisia, at the time of writing, has some 68 women mayors out of 350. The Local Authorities Code, Act 29 of 2018, also provides that the mayor and the first deputy-mayor must be different gender, which means that women occupy the position of either mayor or deputy mayor in all municipalities. Several other provisions have also been introduced, in particular through the creation within local councils of a committee on equal opportunities. Further, article 75 of the code provides that equality between users is a fundamental principle in the management of local services; article 106 stipulates that

local development programmes must comply with the principle of equal opportunities, paving the way for local councils to adopt gender-sensitive budgets; article 109 directs local authorities to take measures to promote the sustainable and rights-based social and solidarity economy to better integrate rural women and people with reduced mobility; and article 112 delivers financial support for local programmes benefiting female victims of violence.

In the World Economic Forum’s 2018 report on the Global Gender Gap, Tunisia ranks 119 out of 149 countries, with a score of 0.648. Despite this advanced position compared with several other Arab countries, Tunisia has dropped two places compared with 2017. Benchmarked to 2006, the report shows a relative improvement in gender parity.⁴

The report data show a significant increase in parity with regard to political empowerment, with Tunisia ranked 55 out of the 149 countries evaluated in 2018. The main weakness is in the dimension of economic participation and opportunity (ranked 135 out of 149).

Table 2 Global Gender Gap score, 2006 and 2018

	2006		2018	
	Rank	Score	Rank	Score
Global Gender Gap score	90	0.629	119	0.648
Rank, out of	114		149	
Economic participation and opportunity	97	0.480	135	0.439
Educational attainment	76	0.959	108	0.966
Health and survival	98	0.966	105	0.971
Political empowerment	53	0.110	55	0.216

Source: World Economic Forum, 2018.

Note: Progress towards gender parity is marked on a scale from 0 (disparity) to 1 (parity).

B. Statistical data

According to the 2014 general population census by the National Institute of Statistics (INS), Tunisia has 10,782,954 inhabitants, women comprising 50.2 per cent and men 49.8 per cent of this total.⁵ This differs from 1966, when men made up 51.1 per cent of the population, and is largely explained by the greater gap in life expectancy at birth for women than for men, which reached 3.5 years in 2014. The progress recorded in Tunisia since independence is due to both family planning policy and improved health care for the population.

With life expectancy, in 2018 Tunisia ranked 82 out of 189 countries globally, and first in the African continent, with a value of 75.9 years. This increase has been much more favourable for women (77.4 years in 2014). However, such advances must not hide significant disparities between regions and areas. According to 2009 data, the mortality rate for children aged under one was 12.8 per thousand in Tunis compared with 28.5 per thousand in the Kebili Governorate in the south-west. Similarly, the rate is quite different between urban (15.2 per thousand) and rural areas (26.4 per thousand).

This inequality between regions and environments can be explained by the way care is financed, with per capita expenditure

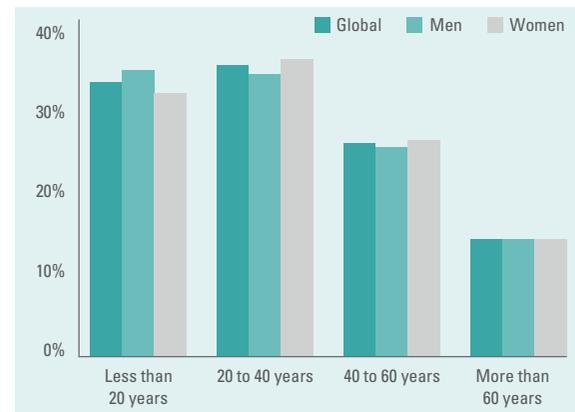
Table 3 Expenditure and poverty per region, 2015

	National	Urban	Rural
Expenditure/persons (TND)	3 871	4 465	2 585
Expenditure/households (TND)	15 561	17 365	11 264
Poverty (%)	15.2	10.1	26.0
Extreme poverty (%)	2.9	1.2	6.6

Source: INS, 2017a.

Note: TND is Tunisian dinar.

Figure 1 Demographic structure by age group and gender (percentage)



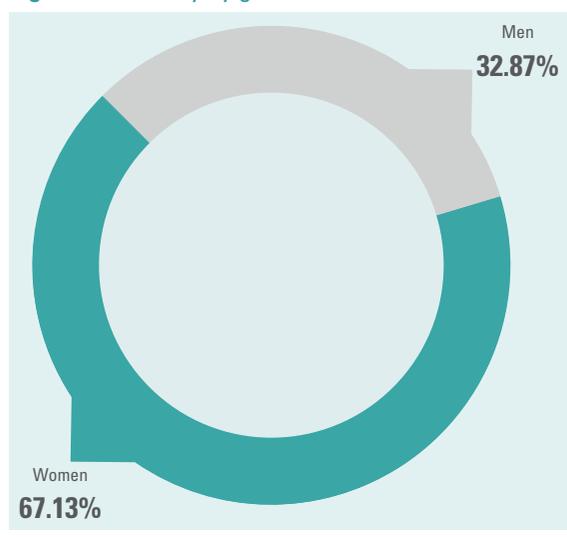
Source: Tunisia, INS, 2014.

multiplying tenfold between 1990 and 2014 but still mainly financed by households (55 per cent). This puts the most vulnerable social groups and those living in a rural environment at a disadvantage. INS data for 2017 on personal and household spending and poverty in both environments clearly show this inequality.⁶

Demographically, the Tunisian population is rather young, with more than 64 per cent aged under 40. Compared with men, the age structure of women aged under 40 is slightly lower (64.2 per cent compared with 65.1 per cent).

C. Education

Despite significant progress in overall education outcomes, the rate of illiterate people stood at 19.3 per cent in 2014 (population total of 1,755,300). It was 84.7 per cent in 1956. The rate of those unable to read or write is significantly higher among women than men, at 25.6 per cent compared with 12.8 per cent. Women accounted for 67.13 per cent of the illiterate population.⁷

Figure 2 Illiteracy by gender

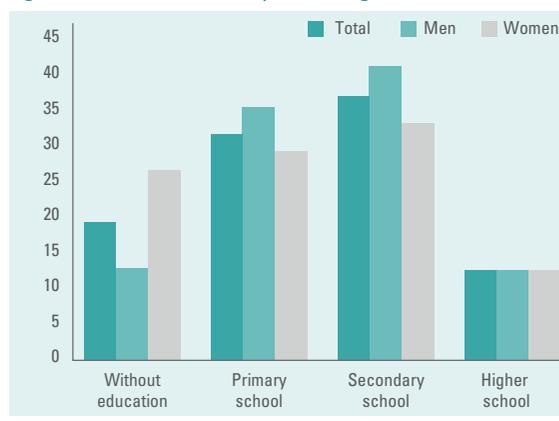
Source: Tunisia, INS, 2017b.

This disparity is primarily due to the number of women aged 10 and older who do not have access to the education system.⁸

The disparity can also be attributed to existing inequalities between rural and urban areas. The illiteracy rate in predominantly rural governorates is high; it stood at more than 35 per cent in Kairouan in 2014. In rural areas, the female illiteracy rate is 41.7 per cent compared with 17.9 per cent in urban areas.⁹

Despite inequalities in access to education, the dropout rate is higher for boys. According to the Ministry of Education, for the academic year 2012/13, the secondary school completion rate was 41.8 per cent for girls and 23.1 per cent for boys. Similarly, at the higher education level in 2013/14, approximately 67 per cent of graduates were female, with a preference for scientific subjects. For engineering, manufacturing and construction, for instance, the number of female graduates increased from 3,417 to 4,898 while males increased from 5,577 to 6,356.¹⁰

According to data from the Tunisian Agency for Vocational Training (ATFP), job placement has been in favour of women since 2011. While the

Figure 3 Level of education by gender of people aged 10 and over, 2017 (percentage)

Source: Tunisia, INS, 2017a.

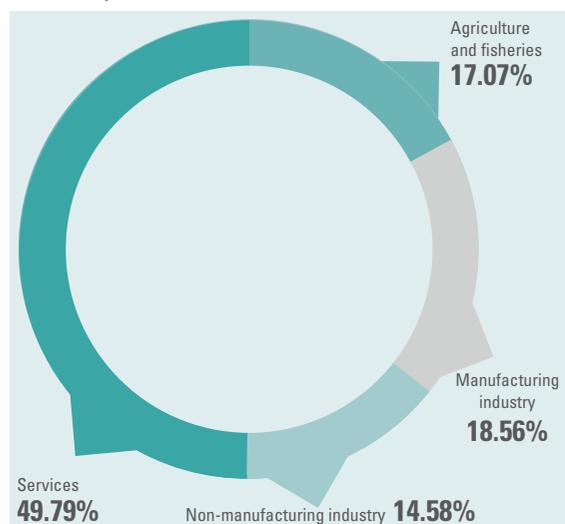
placement of female employees represented 44.3 per cent of the total in 2009, by 2015 it had risen to 58.3 per cent.

D. Economic participation

Despite the achievements in education, gender disparity remains striking in the economic sector, significantly limiting the ways in which women can transform their identity, beyond marriage and motherhood to self-autonomy and work. Studies show that despite advances, disparity remains high, due to: (a) sociocultural constraints, particularly in rural areas, which subject women to several forms of precariousness; (b) limited participation of women in economic activities, leading to higher levels of unemployment and wage gaps; and (c) weak presence of women in advanced decision-making positions.

In 2019, Tunisia had an economically active population of 4,190,300, composed mainly of men (71 per cent). The national unemployment rate was 14.9 per cent in the fourth quarter of the year, unevenly distributed between men and women. Male unemployment was estimated at 12.1 per cent, and female at 21.7

Figure 4 Distribution of labour force by sector of activity



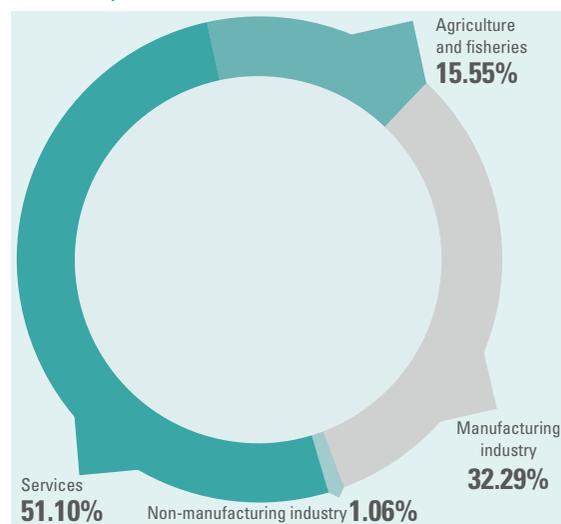
Source: Tunisia, INS, 2015.

per cent.¹¹ National figures mask significant inequality between regions. Unemployment rates reach high levels in the inland and predominantly rural governorates. For the Governorates of Tataouine (in the south) and Kairouan (in the centre-east and mainly rural), the rate exceeds 30 per cent. There is also an educational pattern. The unemployment rate is higher for university graduates than any other educational category, reaching 27.8 per cent, with greater disparity between men (15.7 per cent) and women (38.1 per cent).¹² In rural areas, the unemployment rate for women graduates exceeds 50 per cent.¹³

The distribution of the labour force by sector of activity indicates the importance of the service sector, which is dominated by public services (approximately 40 per cent of the sector).¹⁴

Since the 1990s, industrial sector jobs have become increasingly precarious, taking the form of fixed-term contracts that are characterized by high instability. Many women are thus forced into economic vulnerability. According to a 2019 study by the Tunisian Forum for Economic and Social Rights,¹⁵ in the services

Figure 5 Women's occupations by sector of activity



Source: Tunisia, INS, 2015.

sector, particularly public services, only 2 per cent of management positions (general or central director) were held by women despite their relatively high presence in public administration (48 per cent). In the agricultural sector, women's economic vulnerability takes many forms, due to low wages, unfavourable working conditions and limited access to resources and land ownership.

According to four periodic INS studies between 1997 and 2012, the gender wage gap is widening in almost all formal sectors.¹⁶

Table 4 Evolution of average monthly gender pay gap by sector, 1997-2012 (percentage)

Sector of activity	1997	2002	2007	2012
Industry	-25.0	-49.3	-35.2	-27.5
Construction	-22.0	17.2	-26.3	-14.9
Trade, repair of automobiles/ household goods	-24.7	-32.4	-25.2	-30.7
Services	-25.8	-30.1	-32.7	-40.4
Global	-24.5	-32.3	-30.5	-35.5

Source: Tunisia, INS, 2015.

The INS National Report of 2015 shows the gender pay gap (difference between the average hourly pay of men and women) is significant in the formal private sector, with a gap of 24.5 per cent. For the informal sector over the period 1997-2012, women's wages remained below the minimum mandatory industrial wage in order to keep male salaries above minimum wage, with an average of 34.5 per cent in 2012 compared with men.

A Tunisian General Labour Union study indicated that about 306,000 women work in the informal sector. A study from 2000 shows that for the population aged 15 to 29, 43 per cent of employed women do not have a contract.

In the agricultural sector, in addition to wage inequality, women endure relatively unfavourable working conditions. Several transport incidents have been recorded, including on 12 April 2019, when two women working in the agricultural sector were killed in Zaghouan Governorate. In the Cebelet Ouled Asker region of Sidi Bouzid Governorate on 27 April 2019, 15 people were killed, 12 of them rural women. Many citizens considered the accident a national disaster that required a response from the authorities to protect women's rights.

A survey on gender parity by the Financing Bank for Small and Medium Enterprises (BFPME), the main public financial institution for small and medium-sized companies, found only 17 per cent of projects approved in 2015 were initiated by women. Those that were represent 65 per cent of the total projects. They were concentrated in textile and clothing industries (24.8 per cent), the service sector and miscellaneous (20.9 per cent) and agrifood industries (19.3 per cent).¹⁷

In Tunisia, women devote 77.6 per cent of their time budget to unpaid housework, men 9.4 per cent. The unpaid domestic work was evaluated at 64 per cent of Tunisia's gross domestic product (GDP) in 2006.¹⁸

With regard to access to drinking water and sanitation, inequality between rural and urban areas is prominent. According to 2014 national census data, the connection to drinking water (tap) in rural areas was 66.6 per cent, and 98.9 per cent in urban areas. Household connections to the rural sanitation network were 9.9 per cent compared with 82.2 per cent in urban areas.¹⁹

E. Public life and decision-making

After independence in 1956, Tunisia's first president, Habib Bourguiba, considered women's emancipation a priority for his country's development. That same year, Bourguiba introduced the Code of Personal Status, a set of laws that changed the family law and the legal status of women. In 1980, Tunisia signed the Convention of the Elimination of All Forms of Discrimination against Women (CEDAW), though did not ratify it, subject to reservation, until 1985. The following year it established its first ministry dedicated to women's affairs.

Decree No. 2003-2020 of 22 September 2003 governs this ministry, which is in charge of matters related to women, family and childhood. The decree states that the ministry is responsible for the following:

- Executing government policy in the areas of women, family and childhood;
- Paying special attention to women, families and children with special needs;
- Providing information services on women, family and childhood;
- Undertaking research in the fields of women, family and childhood;
- Supervising institutions whose field of activity is women, family and childhood.²⁰

On 17 April 2014, shortly after the new constitution was adopted, the Government sent official notification to the United Nations

Secretary-General signifying the lifting of all reservations to CEDAW and its commitment to “not take any organizational or legislative decision, which could conflict with article 1 of the Tunisian constitution”.²¹

The notification enshrines Legislative Decree 103. Promulgated in 2011, it was the subject of controversy following the filing of a cancellation request in February 2014 by 11 deputies of the parliamentary group of the Islamist party Ennahda. The cancellation requests did not lead to anything and the new laws were legally established since, as explained by Mr. Beji Caid Essebsi, the former President and Prime Minister, “the current constitution no longer responds to the aspirations of the people after the revolution and is overtaken by events”. The deputies’ objection was to paragraphs 2, 9, 16 and 29, concerning “the right of Muslim women to marry non-Muslims, the right to inherit, the right to give children the surname of the mother, the right to move freely, perfect equality in the possession of property and perfect equality before the courts”.

On 13 August 2017, the Commission on Individual Liberties and Equality (COLIBE) made several proposals, including equal inheritance rights for men and women. The initiative, translated into a draft law that was adopted on 25 November 2018, is a first in the Arab region. Advocates present it as an instrument that can promote women’s economic empowerment and significantly reduce inequality in accessing resources. The draft law, which has not yet been examined by the Assembly of People’s Representatives, remains contentious.

Regarding public life and decision-making, women make up 47 per cent of registered voters. According to Mr. Nabil Baffoun, the president of the Independent High Authority for Elections (ISIE), however, women represent more than 60 per cent of non-registered voters, the majority of whom reside in rural areas. Similarly, ISIE statistics

for the 2014 parliamentary election indicated that while women constituted 49 per cent of polling station members and 42.5 per cent of observers, they represented only 30 per cent of polling station presidents, and 26 per cent of candidates’ representatives.²²

F. Gender policies

To limit violence against women, article 2 of the Organic Law on Elimination of Violence against Women broadened the legal definition of violence to include “any physical, moral, sexual or economic harm to women based on discrimination on the basis of sex that results in bodily, psychological, sexual or economic harm, suffering or injury, and also includes the threat of such harm, pressure or deprivation of rights and freedoms, whether in public or private life”. Such achievements must be accompanied by action to raise public awareness, particularly among women, so that measures can be translated into improvements on the ground. Efforts must be made in implementing legislation and training police and judicial bodies to strictly apply penalties provided for by law.

In addition to equal inheritance, COLIBE introduced measures in its draft law to consecrate equality. These include: (a) recognizing the mother’s guardianship on the same basis as the father; (b) establishing the principle of shared burdens and household responsibilities between parents without distinction; and (c) granting children born outside of marriage the right to filiation and inheritance. The proposals are not yet the subject of a government bill but are currently being debated publicly pending consideration of the draft law on inheritance by the Assembly of People’s Representatives.

G. Rural women empowerment and social inclusion

Legal advances are frequently criticized for not giving sufficient importance to what detractors consider to be the main challenge to gender equality, namely, economic participation and opportunities, particularly in disadvantaged rural areas. The National Strategy for the Economic and Social Empowerment of Rural Women and Girls 2017-2020, produced by the Ministry of Women, Family and Children and whose action plan was approved by the Council of Ministers on 11 August 2017, provides five main areas of intervention, as follows:

Axis 1 Economic empowerment: improving women's employability through bringing together and diversifying vocational training, access to and control over resources and means of production (including land and facilitating transitions from the informal to the formal sector), promoting the social and solidarity economy, and access to markets.

Axis 2 Social empowerment: combating school dropout, access to decent work (equal pay, social security coverage, protected work and transport), bringing together and improving maternal and child health and basic health services.

Axis 3 Participation in public life and local governance.

Axis 4 Improving the quality of life: infrastructure and the right to culture and leisure.

Axis 5 Data and statistics: producing data and statistics by gender and geographical area, and their integration into the preparation and evaluation of development plans.

The strategy is based on the relevant SDGs, including SDG 1 (no poverty), SDG 2 (zero hunger), SDG 3 (health and well-being), SDG 4 (quality education), SDG 5 (gender equality), SDG 6 (clean water and sanitation), SDG 8 (decent work

and economic growth), and SDG 10 (reducing inequality). It provided for an overall budget of 53.5 million dinars (\$18.5 million), 55 per cent from the State, the remaining 45 per cent financed through international cooperation.

The approved action plan for 2018 included a set of results for each axis, as follows:

Axis 1

- **Outcome 1:** decrease in the female unemployment rate in rural areas by five points by 2020;
- **Outcome 2:** rural women are involved in the social and solidarity economy;
- **Outcome 3:** improved ownership of production tools by rural women;
- **Outcome 4:** rural women market their products.

Axis 2

- **Outcome 1:** rural women benefit from quality and uninterrupted education;
- **Outcome 2:** child labour below the legal age is abolished;
- **Outcome 3:** rural women work in decent conditions that guarantee their safety;
- **Outcome 4:** social coverage for rural women is improved by 20 per cent by 2020;
- **Outcome 5:** rural women have access to quality health services.

Axis 3

- **Outcome 1:** rural women exercise their rights as citizens without discrimination;
- **Outcome 2:** rural women's participation in local, regional and national elections increased by 15 per cent;
- **Outcome 3:** information, guidance, legal and social training and information services are available for rural women.

Axis 4

- **Outcome 1:** women access cultural and recreational services.

Axis 5

- **Outcome 1:** gender-based national and sectoral statistical data are available.

Guidance notes for the five-year plan 2016-2020 provide for an increase in the labour force participation rate of women to 35 per cent in 2020 (in 2015 the rate was 26.2 per cent). According to INS data for the fourth quarter of 2018,²³ the rate remained at 26.4 per cent. Realistically, it is unlikely to reach 35 per cent by 2020. Based on the latest INS data, during the fourth quarter of 2019, the evolution of action population of females was estimated to be 29 per cent.

Further, a draft law on the social and solidarity economy has been initiated and is being prepared. It has not yet been examined by the Council of Ministers before being submitted for discussion by the Assembly of People's Representatives. It is, therefore, unlikely any significant action will be undertaken on the plan before the end of 2020. According to a report by the *Tunis Afrique Presse* on 18 June 2020, however, the Assembly has approved the draft law, which could potentially generate more than 200,000 jobs and contributing to about 10 per cent of the country's GDP.

With regard to female employment, Tunisia continues to face constraints related to the country's economic context (low growth rate), high regional inequality (particularly in infrastructure and basic services, with limited public investment in these areas), dominance of informal sector, and sociocultural practices that can restrict gender equality, particularly on wages, social security coverage and working conditions. In 2015, mechanisms to encourage female entrepreneurship were introduced, in particular through the Regional Support Initiative for Sustainable Development (IRADA), a programme set up by the Ministry of Women, Family and Children and the Tunisian Solidarity Bank. IRADA provides support programmes on preferential terms for creating businesses and financing women SMEs, including no personal contribution or interest for projects with a value of less than 10,000 dinars (\$3,300), and an interest rate of only 3 per cent for projects between 100,000 dinars (\$33,000) and 150,000 dinars (\$50,000). The programme was launched

in 2015 with the aims of financing 8,000 projects by the end of 2020. According to data provided by the ministry in June 2018, only 2,300 projects had been approved, falling far short of the initial objectives set.

H. Key constraints in rural areas

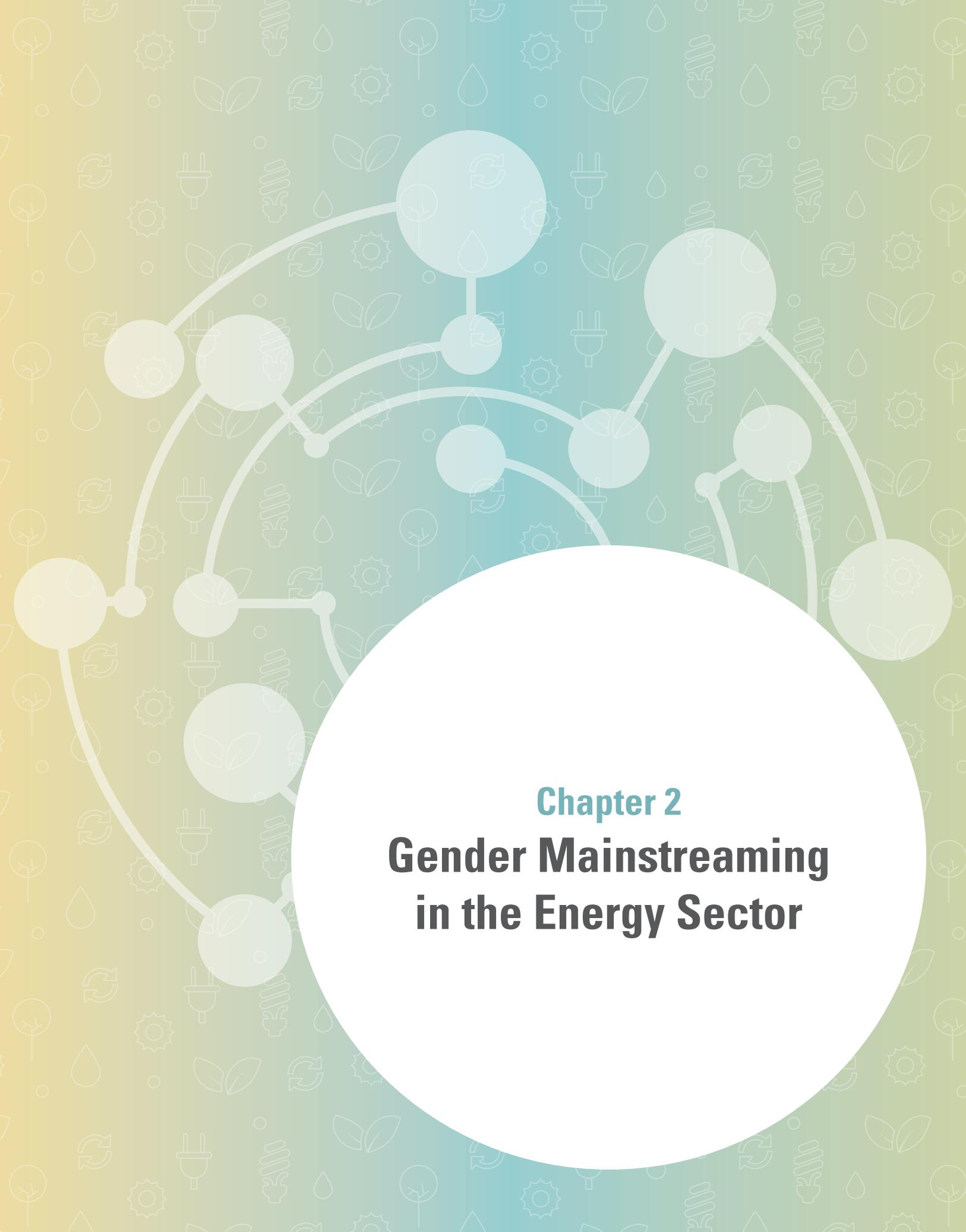
The rural environment remains dominated by agriculture, which employs the majority of the working population. Women living in rural areas represent 35 per cent of the total female population.²⁴

According to the Ministry of Agriculture statistics, 509,208 women worked in the sector during 2011-2012.²⁵ Of these, 427,534 were engaged in unpaid family support activities. In addition to the absence of a social security coverage system, women also experience a gender wage gap, a high number of hours worked in agriculture (some nine hours per day) and major sociocultural constraints. For example, only 4 per cent of women are landowners and only 6 per cent own cattle.²⁶

In rural cultures, the identity of women is associated with their family and reproductive functions. Their participation in productive activities is subject to several constraints, including the following:

- a. Limited access to land despite the law stipulating that men and women have equal access. In practice, women are often forced to give up their land to family members. This significantly reduces the possibility of access to bank finance, increasingly essential for modern land-based agriculture. The information in this report concerning the ownership of agricultural land by women and access to bank credit demonstrates this inequality. During focus group discussions with women, some testified they financed a land acquisition on behalf of their husbands, stating this was common practice in rural areas;

- b. Discriminatory practices in the decision-making process, particularly with the management of family financial resources, economic and commercial transactions (sale and rental of movable and immovable property) and investment decisions, which are often made exclusively by men. The trade of cattle is organized in markets frequented by men. Agricultural equipment is registered in the man's name. Few women are involved in the acquisition, leasing or operation and maintenance of machines, which remain men's responsibilities;
- c. Limited access to means of production, assistance and support services, agricultural equipment, water resources, fertilizers and new technologies;
- d. Low involvement in agricultural (agrifood) processing activities where the role of women is reduced to underpaid employees. The 2012 INS survey²⁷ of a sample of microenterprises indicated that self-employed women accounted for 22 per cent of the 666,284 registered firms. In the agrifood sector, women's average income is 70 per cent that of men;
- e. Under-representation of women in rural professional organizations (the Agricultural Development Group GDA, the Mutual Society of Agricultural Services SMSA, The Tunisian Union of Agriculture and Fisheries, among others), grass-roots community organizations and government bodies in charge of agricultural policies (the Regional Commission for Agricultural Development CRDA, and the territorial agricultural extension unit CTV). For example, the central office of the Tunisian Union of Agriculture and Fisheries, which is composed of 109 national and regional leaders, has only six women;
- f. Lack of information on opportunities, regulations and procedures. Due to the low representation of women in professional agricultural organizations, they are often more oriented towards actions (studies, claims, programmes) without gender variations;
- g. Lack of gender awareness and outreach programmes for men in rural areas.

The background features a repeating pattern of icons including leaves, gears, water droplets, and recycling symbols. A network diagram with circular nodes and connecting lines is overlaid on the background. A large white circle is positioned in the lower right, containing the chapter title.

Chapter 2

Gender Mainstreaming in the Energy Sector

2. Gender Mainstreaming in the Energy Sector

A. Gender and SME promotion strategies

Beginning in 1986, Tunisia adopted a structural adjustment plan for the reform of its economy. The objective was to promote the role of the private sector as the main economic actor in wealth creation and employment. Economic transformation has been accompanied by several other reforms, including that enacted in 1993 by Law No. 93-120 on investment incentives as an instrument for promoting business and “combating regional inequalities”. This was done through a set of tax and financial inducements targeted according to a categorization of regions based on a regional development index.

During the same year, two new institutions were created, namely the Tunisian Agency for Vocational Training (ATFP) and the National Agency for Employment and Independent Work (ANETI). Their responsibilities included promoting entrepreneurship, targeting young entrepreneurs to boost business creation and strengthen technical and managerial skills.

Table 5. Evolution of unemployment rate per education level, 1984-2008 (percentage)

Education level	1984	1994	2004	2008
Illiterate	15.2	16.8	12.7	5.7
Primary school	22.4	19.2	15.7	12.3
Secondary school	11.7	13.0	14.7	15.3
Higher level (after secondary school)	2.3	3.8	10.2	21.6
Total	16.4	15.8	14.2	14.2

Source: Touhami, n.d.

The new policy quickly faced two main challenges: the rising unemployment among young graduates and the difficulties for young promoters in accessing finance through traditional banking mechanisms.

Changes in the structure of unemployment have produced significant social pressure, strongly influencing public policies during the 1990s to favour programmes aimed at young graduates. This was a detriment to existing

Table 6 Women in employment and entrepreneurship programmes

Employment and entrepreneurship programmes	Percentage of women
Internship or vocational training (SIVP)	59.0
Contract for higher education graduates	65.2
State support for salaries paid for hiring new higher education graduates	51.0
Contract of adaptation and professional insertion	64.5
Initiation and adaptation course for business creation	65.3
National Employment Fund (Fund 21-21)	28.0
Tunisian Solidarity Bank	29.0

Source: Tunisia, National Agency for Employment and Independent Work (ANETI). See <http://www.emploi.nat.tn> (accessed on 2019).

mechanisms dedicated to unemployed citizens with a primary and secondary education as well as illiterate people.

As a result, in 1997, the Tunisian Solidarity Bank was established, the main public financial institution dedicated to small and medium-sized companies. It facilitates access to financing, for young entrepreneurs in particular, by simplifying the conditions for granting loans, subsidizing interest rates, reducing self-financing requirements and offering favourable repayment terms.

This policy supporting entrepreneurial activities did not provide for a gender approach. According to the National Agency for Employment and Independent Work (ANETI) data in 2008, there is a clear difference between employment assistance programmes and those concerning entrepreneurship (table 5).

These data indicate that in the absence of a gender approach, public policies favouring employment and entrepreneurship have increased graduate employment instability due to the adoption of mechanisms that only support their integration into working life for limited periods (one to three years), and failed female entrepreneurs.

More recent data show the gap between female and male entrepreneurs remains significant. A survey for the period 2012-2016²⁸ conducted as part of the International Labour Organization project, "The Way Forward after the Revolution: Decent Work for Women in Egypt and Tunisia", indicated that 43 per cent of Tunisian Solidarity Bank credit recipients were women, with only 29 per cent of the amounts. For the BFPME, women's share of loans granted was 9 per cent of beneficiaries for an average loan of 158,000 dinars (\$52,600) against 232,000 dinars (\$77,000) for men.

Faced with this lack of interest in national strategies for gender equity in entrepreneurship promotion, and the limited number of financial mechanisms for less educated populations, microfinance institutions

Table 7 Evolution of characteristics of target population, 1999-2004 (percentage)

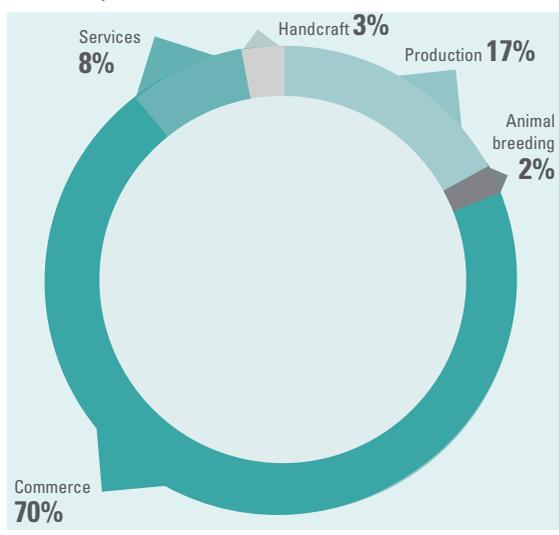
	1999	2001	2004
Gender			
Women	71	80	92
Men	29	20	8
Education level			
Illiterate	27	32	27
Primary school	61	45	43
Secondary school and more	12	23	30

Source: Mahjoub and Bala, 2005.

have been introduced, particularly Enda Inter-arabe. According to an impact study by the organization for the period 1999-2004, approximately 90 per cent of the funds allocated were for women, and 70 per cent of the beneficiaries were illiterate or at primary school level.

Sectoral analysis for the same period indicates this financing mechanism was mainly intended to finance commercial activities.

Figure 6 Classification of microenterprises per type of activity



Source: Tunisia, INS, 2015.

Table 8 Mapping projects for rural women

Programme	Objectives
Competitive agriculture	Support Tunisian agricultural and agribusiness sectors through the creation and consolidation of value chains and promotion of modern farming techniques and agricultural mechanization, with the experience of Italian good practices.
Women's Entrepreneurship Promotion Programme RAIDA	Protect and sustain women's rights and promote equal opportunities through their increased participation in economic life.
Women's single-parent economic programme	Promote the participation of women single-parent families in economic life.
Socioeconomic empowerment programme for families in special situations	Promote and strengthen the socioeconomic situation of families in particular situations by helping them create sources of income and ensuring their autonomy.
Rehabilitation and preservation of the biodiversity of Ghannouch Gabes Oasis	Contribute to safeguarding oasis biodiversity and change of environment in a healthy, prosperous and welcoming way where inhabitants are creators of their own wealth.
GEMAISA II (enhancing gender mainstreaming in sustainable rural development and food security actions)	Empower rural women by promoting natural resource management, food security, economic empowerment, equal access to resources and capacity-building of partner institutions.
WIDGRA (women's land rights for inclusive development and growth in Africa)	Ensure women's access to and control over their land resources across Africa, by supporting and promoting the voices of rural women.

The revolution has given impetus to promoting both female entrepreneurship and rural development through empowering women. Thus, in 2017, Enda Inter-arabe launched the Pack Agriculture product as a financing instrument for projects in rural areas. A relatively relevant share of finance for agricultural projects was recorded, such as in 2015 by the BFPME (about 5 per cent), and in 2018 by the Tunisian Solidarity Bank (8 per cent).²⁹

In addition to programmes promoting women's civil rights and their participation in public affairs, the new constitution requires systematic gender mainstreaming in various programmes, including those for rural women. According to a joint report by the Ministry of Women, Family and Children

and the European Union that maps current and ongoing projects, there are several projects for rural women (table 8).

Although the procedure for granting loans in rural areas does not allow any gender discrimination of beneficiaries, implementing such mechanisms remains problematic for women. Apart from microfinance actions dedicated to trade in agricultural areas, where more women take part, other sectors of agricultural activity (production, agrifood industries, intensive livestock farming, arboriculture) are difficult for women to access and remain dominated by men. In addition to the technical specifications governing each activity, these types of projects generally require the provision of land and/or the legal constitution

of a company. Given their exclusion from land ownership and men's dominance in managing and making decisions about family assets in rural areas, few women are able to meet the credit requirements of financial institutions for operating productive activities.

Women are also excluded from the agricultural benefits granted by the Government, particularly with regard to sheep and cattle breeding, given their lack of land and their low representation in agricultural cooperatives (interlocutor of public entities in this area).

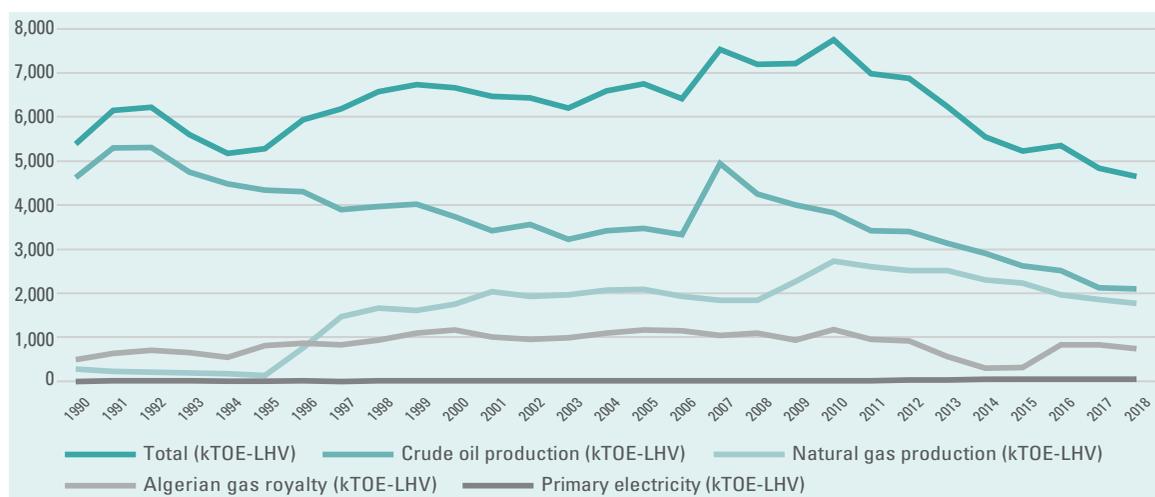
Finally, there are no real projects dedicated to improving the situation of rural women through the adoption of comprehensive RE programmes. Their promotion remains a national orientation at the moment without integrating the gender perspective in a strict sense. The objective is to formulate practical recommendations for gender-based social inclusion in energy access programmes aimed at promoting the use of small-scale RE technologies, within the framework of local entrepreneurial development and income-generating activities in rural areas.

B. Energy policies

The National Agency for Energy Conservation (ANME) was set up in 1985. Its mission is to elaborate, implement and evaluate the national policy, which is based on developing and promoting energy efficiency, RE and energy substitution. The importance granted this institutional instrument at such an early stage was justified in the 2000s, with the emergence – and continuous growth – of an energy imbalance. Primary energy demand remains dominated by hydrocarbons (natural gas and petroleum products) that cover approximately 99 per cent of total consumption. The increased dependence on conventional energy, and the increasing consumption, coupled with the decline in national hydrocarbon (figure 7), has resulted in a negative energy balance since the early 2000s (figure 8).

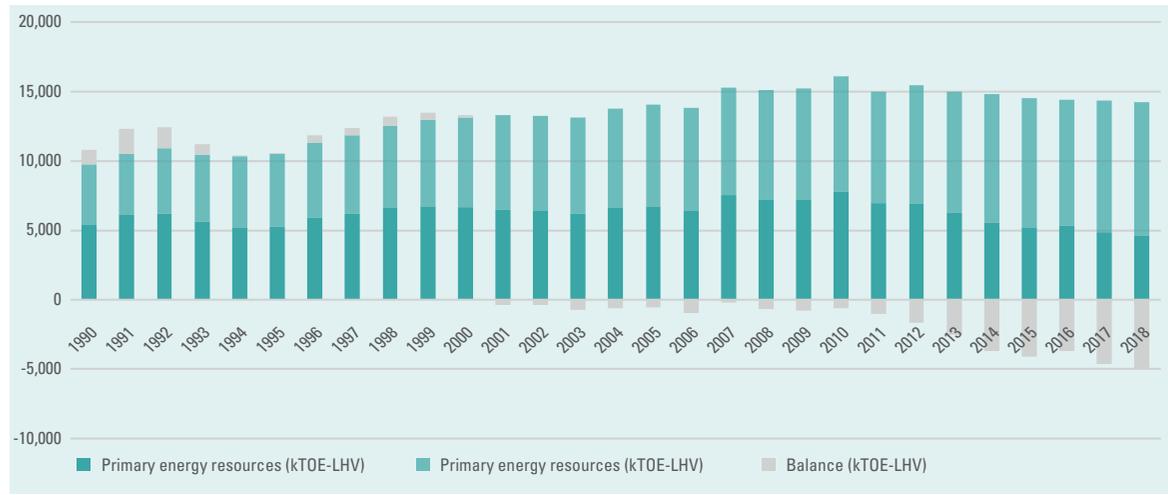
Tunisia's proactive energy conservation policy led to a decrease in primary energy intensity of about 1.8 per cent per year during the period 1990-2010. The decrease explains an average annual growth in primary energy demand of

Figure 7 Primary energy resources



Source: Klibi, 2020.

Note: kTOE-LHV is kilotons of oil equivalent-lower heating value.

Figure 8 Annual primary energy balances, 1990-2018

Source: Klibi, 2020.

Note: kTOE-LHV is kilotons of oil equivalent- lower heating value.

2.1 per cent for the period 2000-2010 compared with an average economic growth of 3.9 per cent. With continuous growth of the energy balance deficit – which in 2018 reached 52 per cent, or 32 per cent of the trade balance deficit – greater consideration has been given by policymakers to reducing the consequent negative impacts.

For years, Tunisia has faced two major energy challenges, as follows:

- An internal challenge linked to the evolution of the national energy context, characterized by a continuous growth in demand, especially for electricity, and a growing deficit in the energy balance that greatly affects the national energy bill;
- An external challenge linked to the international energy context, characterized by fluctuations in oil and gas prices, and limited national hydrocarbon resources and the growing impact of climate change.
- Faced with these challenges, in 2014 Tunisia adopted an energy transition policy to

reduce its total primary energy consumption by 30 per cent by 2030 compared with the trend scenario, plus a 30 per cent share for RE in the electricity mix, over the same period. To achieve these objectives, several measures have been embraced, including:

- Creation of an energy transition fund in 2014;
- Promulgation of Law No. 12 relating to the production of electricity from RE in 2015.

The TSP is a long-term operational programme set to achieve energy transition policy objectives in penetration of the RE technologies in Tunisia.³⁰ The plan initially spanned from 2010 to 2016, promoting renewable energy production through a set of 40 projects and partnerships; five public-led, 29 privately, five supporting the national solar plan implementation and one comprising the creation of a new institution, namely the Tunisian Company of Electricity and Gas - Renewable Energy (STEG-ER). The national solar plan aspired to reduce national energy consumption by 22 per cent in 2016 and greenhouse gas total emissions by 1.3 million tons of carbon dioxide every year. Updated in February 2018, TSP has a target to reach 30

per cent of RE production in its power mix by 2030, relying on wind and solar photovoltaic (PV) systems to meet growing energy demand.

Since 2003, Tunisia has put in place programmes aiming for better use of RE and increased energy efficiency, such as the 2003-2013 project “Promotion of Renewable Energy and Energy Efficiency” in partnership with the German Agency for International Cooperation (GIZ).³¹ The project targeted energy use in urban areas and was limited to a few actions in rural areas, including introducing energy efficient cooking technologies.

Efforts remain tentative. According to the 2019 energy progress report for the Arab region, “Tracking SDG 7”, the bulk of RE consumption in Tunisia is based on solid biofuels for heat-raising, with a small though rapidly increasing use of wind and solar energy for electricity generation.

The TSP’s 30 per cent RE production target is in line with the national strategy to diversify the fuel mix away from mostly imported fossil fuels, and there has been an increased use of solar lighting and home systems in the past 10 years, with 3,500 units installed in Tunisia in 2016 alone, and some uptake of solar water pumps.³²

The growing gap between supply and demand has placed a heavy burden on public finances, forcing the Government to adopt an action plan to scale up the implementation of RE projects that was approved by the ministerial council on 28 February 2018. A target of 3,815 megawatts (MW) of electricity from RE by 2030 was set, with an investment of about 14,000 million dinars.³³ For the TSP’s 2030 targets in installed capacity by technology see [figure 9](#).

Within this framework, the Tunisian Government has committed to a Nationally Determined Contribution (NDC) to reduce its greenhouse gas emissions in all sectors related to energy. It published a programme in December 2016 for the period of 2017-2022 to achieve such targets.

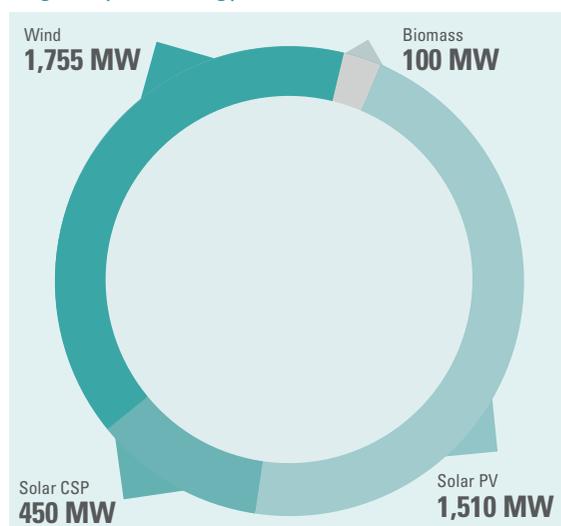
The reduction in carbon intensity requires an expansion of RE projects promoted by the Tunisian Solar Plan. The TSP aims at developing additional RE installed capacity of 3,815 MW by 2030.

In order to reach the aim of the 2020 intermediary targets, the Tunisian Government published the 01/2016 Renewable Energy Generation Notice, fixing the installed capacity 2017-2020 targets by technology and regulatory scheme. The notice has set an installed capacity target of 1,000 MW: 650 MW of solar PV and 350 MW of wind.

After the recommendations following the 7-8 December conference on the acceleration of renewable energy project development, the Government decided to update the 01/2016 objectives by increasing the total installed capacity target to 1,860 MW by 2022.

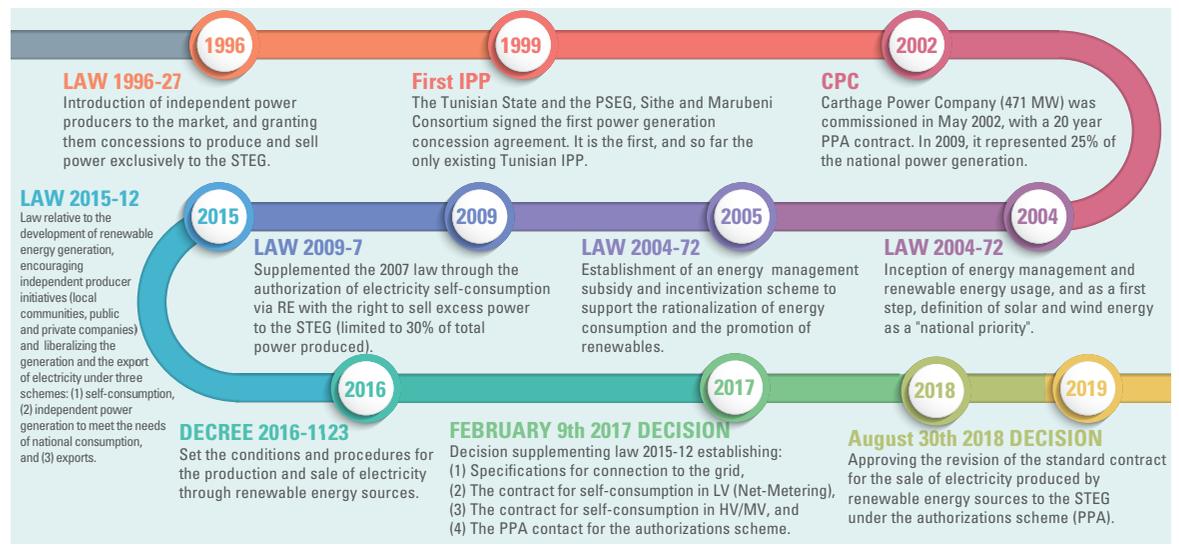
Up to 2019, the Tunisian Government authorized the implementation of a total capacity of

Figure 9 Tunisian Solar Plan 2030 installed capacity targets by technology



Source: GIZ, Ministry of Industry and Small and Medium-sized Enterprises and ANME, 2019.

Note: CSP (concentrated solar power) systems concentrate the sun’s energy using reflective devices; solar PV (photovoltaic) systems convert sunlight directly to electricity by means of PV cells.

Figure 10 Renewable energy regulatory framework, 2019

Source: GIZ, Ministry of Industry and Small And Medium-sized Enterprises and ANME, 2019.

254 MW, including 134 MW solar PV (14 projects of 1 MW each and 12 projects of 10 MW each) and 120 MW wind power (four projects of 30 MW each). They also provided an agreement in principle for the implementation of a total solar PV capacity of 70 MW (10 projects of 1 MW each and six 6 projects of 10 MW each).

Under the self-production regime, the Tunisian authorities provided 150 authorizations with a total capacity of 25 MW for medium-voltage solar PV projects. The implementation of a total capacity of 70 MW through low-voltage solar PV small-scale projects has been also authorized.

Under the concessions regime, the Tunisian authorities assigned five companies – on the basis of tenders – to implement 500 MW of solar PV capacity in the five Governorates of Tozeur (50 MW), Sidi Bouzid (50 MW), Kairouan (100 MW), Gafsa (100 MW) and Tataouine (200 MW). Each company will launch one solar PV project in the corresponding governorate.³⁴

There are also initiatives to promote RE applications in the agricultural sector. For instance, the Ministry of Agriculture, Water

Resources and Fisheries in 2017 conducted a RE project for the development of agriculture and rural areas, in partnership with the Italian Ministry for the Environment, Land and Sea. In a new partnership between the ministries, a second project, relating to climate change in the agricultural systems located at the bottom of the Nebhana dam, is expected. Activities under the RE project have included a training programme on RE and ecological and sustainable agricultural practices, with 10 pilot zones fitted with solar-powered pumps, two machines for weeding and one for desalination of water by solar energy. Studies on potential markets for using these technologies will be developed.³⁵

Tunisia's RE policy, evolving since 1996, has thus been translated into a regulatory framework by a number of laws and other instruments (figure 10).

C. Gender, productive activities and energy

The promotion of productive activities in rural areas has led to rising demand for energy. According to World Bank data, the rate of

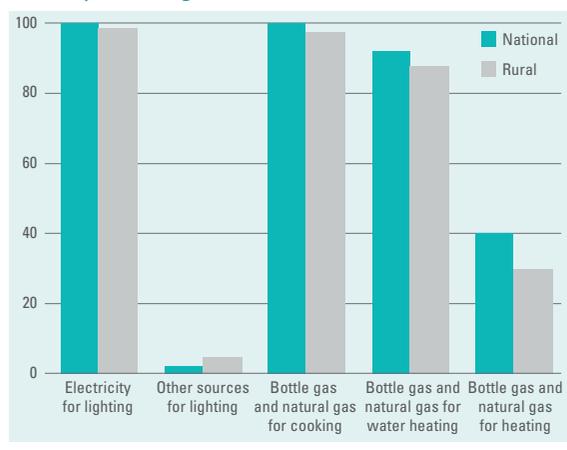
access to electricity in rural areas (as a percentage of the rural population) in 2017 was 100 per cent, from 74 per cent in 1990.³⁶

Agriculture plays a key role in the economy. The sector's performance is already challenged by changing weather patterns affecting productivity and energy intensity, with increasing demand for irrigation and increased mechanical ventilation of livestock facilities. Climate change will likely accelerate the effects over the coming decade. Changes in global demand and food prices impact the economic value created by the sector, while agriculture is also integral to food security.³⁷

Tunisia has successfully used off-grid solar systems for rural communities. The share of total population connected to off-grid solar supply is slightly higher than 0.8 per cent.

Rural electricity connections are almost on a par with the national average. The natural gas connection of households in rural areas is 2.8 per cent, compared with 30 per cent in urban areas. This implies households in rural areas rely more on bottled gas despite periodic or recurrent disruptions in supply, especially in winter.

Figure 11 Energy access, nationally and in rural areas (percentage)



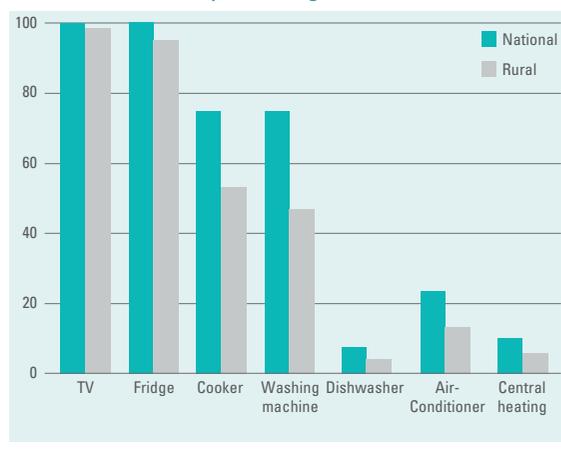
Source: Tunisia, INS, 2014.

Access to electricity has contributed to better living conditions in rural areas, including for women. The use of electrical appliances, such as televisions and refrigerators, is significant, enabling improved conditions for women, especially through access to media. Access to other facilities and equipment that can provide greater comfort for households, particularly women, remains limited, given they are not always inherently incompatible with cultural continuity and identity.

A distinction must be made between improvements resulting from access to electricity for domestic use and those for productive purposes, which remain dominated by men. Extending electricity connection to productive projects, and all subsequent procedures, requires ownership documents or leases. The low proportion of female owners, especially in rural areas, often makes it difficult for women to get a connection on their own behalf.

According to the Agricultural Investment Promotion Agency (APIA), for rural areas the electricity component represents approximately 10 per cent of production costs in the case of low voltage, and 7 per cent in the case of medium to high voltage.³⁸

Figure 12 Domestic equipment, nationally and in rural areas (percentage)



Source: Tunisia, INS, 2014.

In accordance with energy tariffs applied since 1 June 2019 by the Tunisian Company of Electricity and Gas (STEG), a differentiated value added tax (VAT) rate is applied for low voltage customers, as follows:

- 19 per cent on all royalties and energy price (excluding taxes) for uses other than residential and irrigation;
- 13 per cent on energy price (excluding taxes) for residential use;
- 7 per cent on energy price (excluding taxes) for irrigation use.

And for medium voltage customers:

- 19 per cent on all royalties and on energy price (excluding taxes) for uses other than irrigation;
- 7 per cent on energy price (excluding taxes) for irrigation use.

In short, government efforts to connect households to electricity in rural areas, and the rationalization and control of energy expenditure and regulations on energy services have contributed to improved living conditions. However, the impact of these measures on gender mainstreaming in rural areas remains limited, apart from the use of domestic electrical appliances.

Without targeted measures or affirmative action to equalize the gender balance in energy provision, promoting women's integration in productive activities, their social status, economic empowerment and participation in heritage management will continue to be undermined. With regard to vocational training, the proportion of female trainees was only 31

per cent in 2016. Moreover, according to BFPME data in 2015 from energy and RE projects, ownership by women was just 0.4 per cent of the total number of approved projects.³⁹

D. Gender and energy-related data availability and gaps

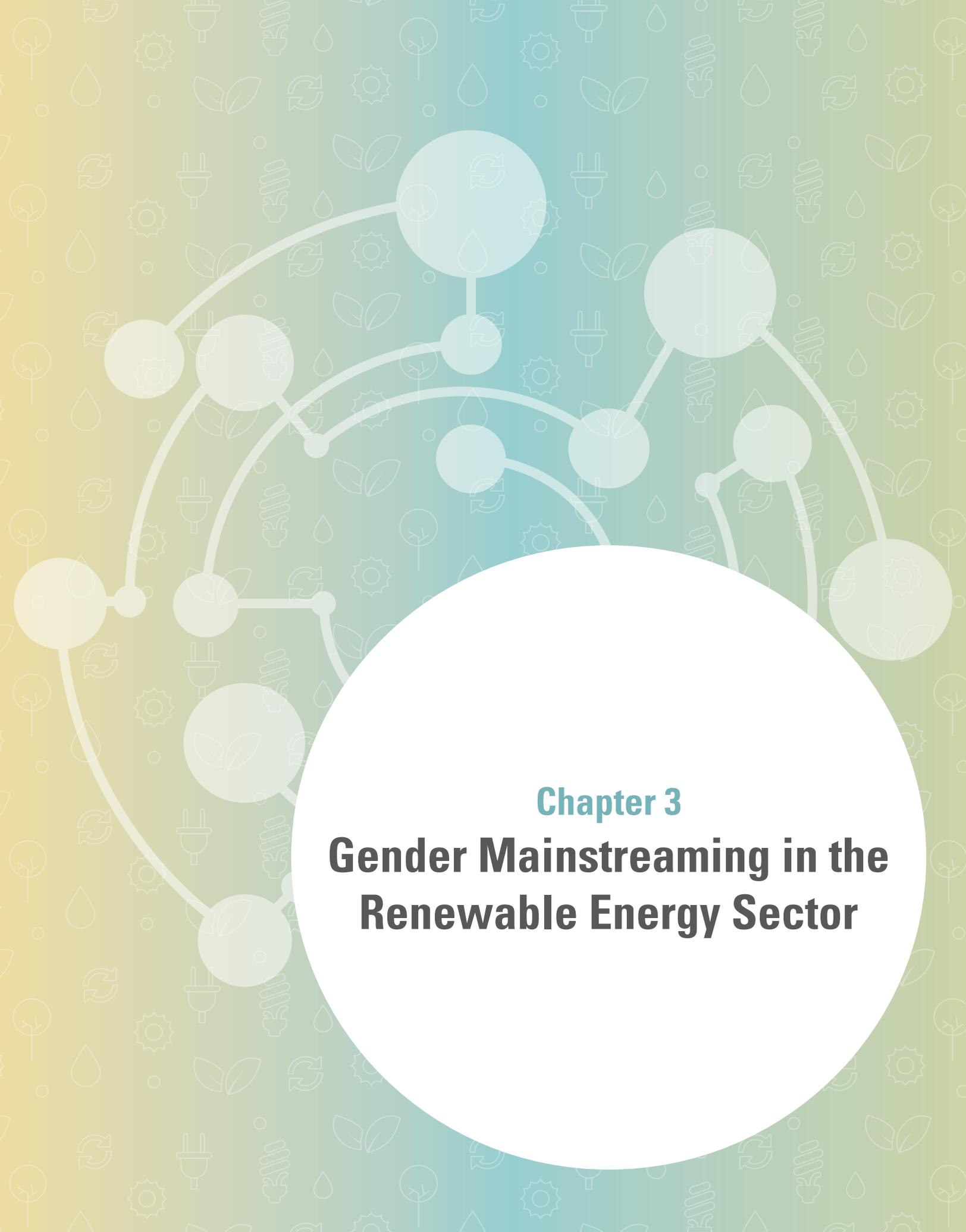
The availability of information for in-depth gender equality analyses in relation to energy remains relatively low, particularly in rural areas. Several indicators associated with productive functions are not yet available, according to the 2015 INS national gender report. These include the following:

- Percentage of women-owned businesses by size;
- Proportion of the population with access to credit, by gender;
- Proportion of landowners in the adult population, by gender.

With regard to access to energy, several indicators need to be produced, including the following:

- Percentage of households headed by women with access to energy;
- Energy costs for women-owned companies (compared with men's);
- Gender equality index for access to energy services;
- Percentage of women receiving energy and energy management training;
- Percentage of women working in energy and RE companies.





Chapter 3
**Gender Mainstreaming in the
Renewable Energy Sector**

3. Gender Mainstreaming in the Renewable Energy Sector

In addition to its positive impact on Tunisia's energy sector, and effect on the balance of payments, the introduction of RE in rural areas is of particular interest for sustainable agriculture.

The country has been moving towards a development model that integrated a green economy since 2011. In this context, Tunisia has adopted the National Sustainable Development Strategy (2014-2020). It identified nine challenges, which include promoting energy efficiency and renewable and sustainable energy, and strengthening the adaptation to climate change. This new model based on sustainable agriculture has several environmental benefits, including: maintaining soil quality and reducing erosion; maintaining agricultural and agropastoral landscapes; developing biodiversity and maintaining healthy ecosystems; and reducing greenhouse gas emissions and energy consumption.

It shows sustainability of the rural environment has both environmental and socioeconomic elements, and requires an approach based on the following three aspects:

- Promoting energy efficiency;
- Promoting the introduction of RE;
- Adopting the principles of sustainable farming.

The use of RE technology must be adapted to the structure of agricultural holdings. Small farms of less than 10 hectares dominate (75 per cent of farms), with activities mostly split between arboriculture (48 per cent) and cereals (36 per cent) on one hand, and livestock production (sheep and cattle breeding) on the other.

From a social perspective, due to the traditional relationship between men and women, men have the advantage over investment decisions (land transactions, acquisition of heavy equipment, ways

of financing investments). Women can be more involved in productive activities in the absence of men, who prefer jobs in other fields (buildings, tourism, fishing, services), depending on the area. The sustainability of these small farms thus depends to a large extent on the quality of women's management, especially as margins are often low due to the small quantities produced, high input costs including electricity, certified prices, reduced markets, and low capacity to control the entire process or enhance the marketing of products.

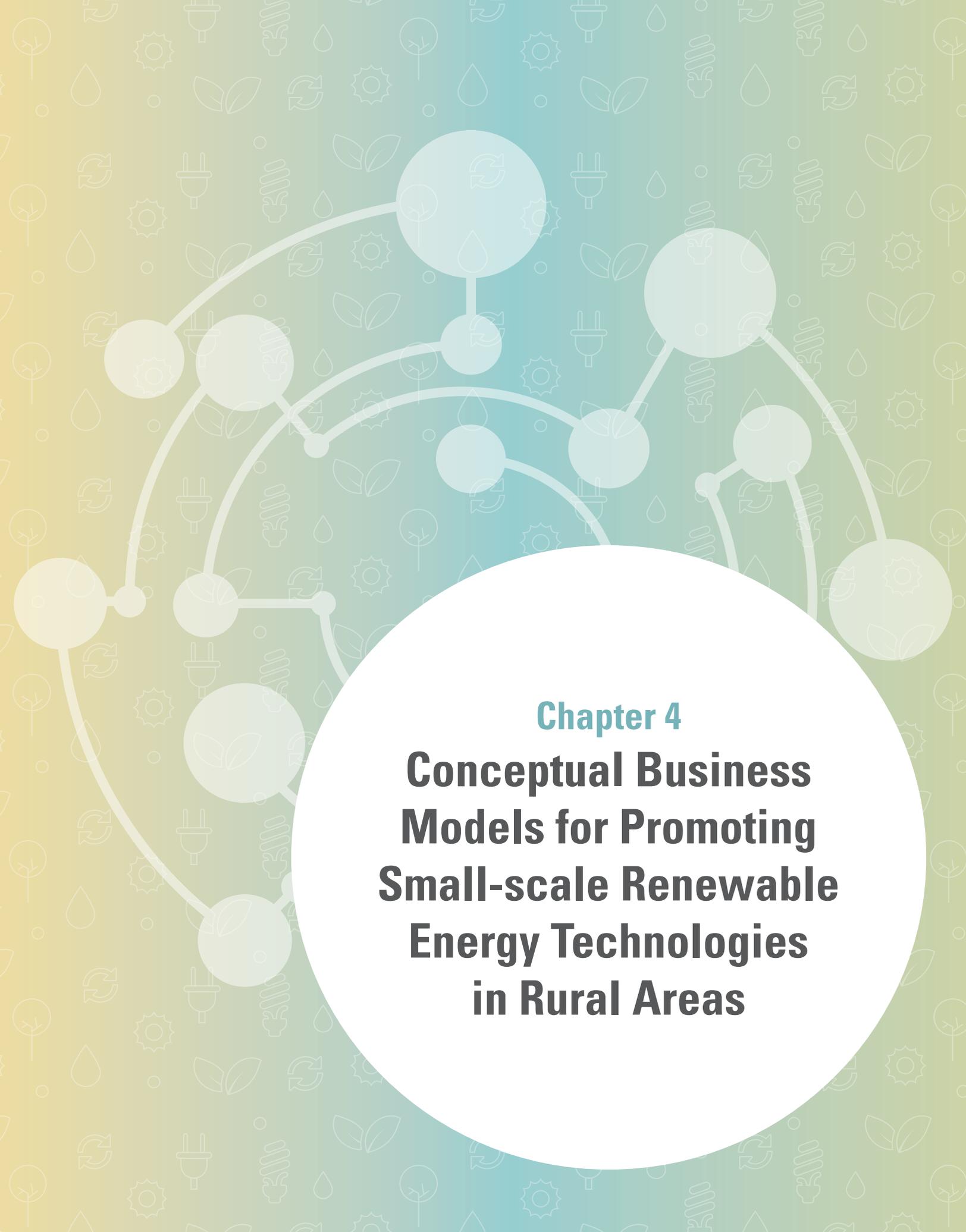
Including women in promoting RE use for smallholdings and projects is vital in ensuring viability, given women's role in management. It can provide the following advantages:

- Improved margins achieved through better control of production costs;
- Greater opportunities for agrifood activities requiring electrical equipment and more attractive marketing and profitability potential;
- Support for women's community organizations, as using RE can be considered collectively, and they can also be used to reinvest any benefits.

Initiatives must address the sociocultural constraints restricting women in rural areas, particularly with regard to support mechanisms for capacity-building, and improving their representation in rural organizations and participation in investment decisions. It must be noted, however, that a lack of awareness programmes for women, on the opportunities offered by RE, and the reduced possibility of access to it in rural areas, limit the scope of such interventions.

It is essential to combine the promotion of RE use with improvements in the management of agricultural activities and operating results, and the potential for developing projects.



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Chapter 4
**Conceptual Business
Models for Promoting
Small-scale Renewable
Energy Technologies
in Rural Areas**

4. Conceptual Business Models for Promoting Small-scale Renewable Energy Technologies in Rural Areas

The introduction of RE in rural areas is among ANME's areas of strategic intervention. Several rural experiences have been recorded and targeted, including the use of PV for electrification, stand-alone solar pumping systems and biogas systems.

As part of the Renewable Energy component of the national rural electrification programme, 2,112 PV systems were installed between 2005 and 2010, representing an investment of approximately 3.6 million dinars. In addition, during the period 2010-2018, 176 solar PV systems with battery storage capacity, and a total capacity of 315 kWp, were installed in rural areas (figure 13).⁴⁰

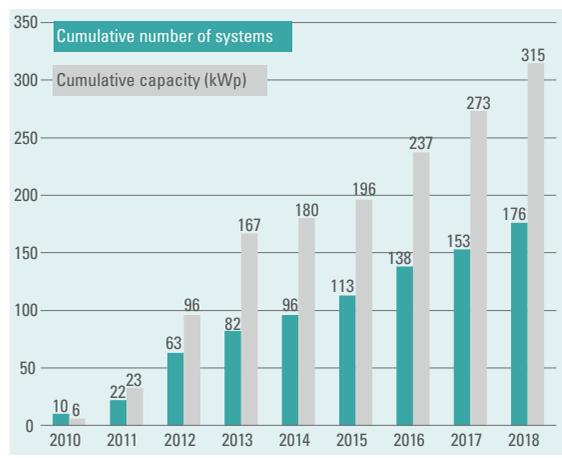
Several programmes have contributed to the expansion of the sector, including the following:

- Programmes led by ANME and supported by international cooperation institutions: since the

1990s, electrification of 13,000 homes and 200 primary schools, dispensaries, street lights, border posts and rural telephony, as well as water desalination, with solar PV systems with batteries; installation of solar PV pumping systems with batteries in 100 wells; and installation of 56 thermal solar water heaters in public showers in isolated rural areas;

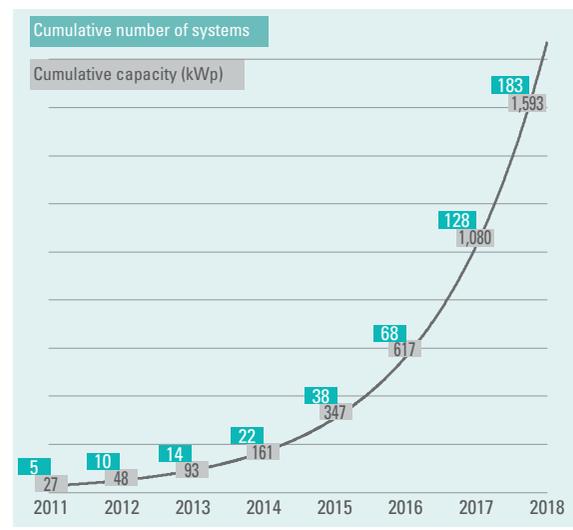
- PROSOL ELEC, or solar roof, programme: since 2011, installation of on-grid low-voltage solar PV systems in residential buildings;
- Solar PV water pumping programme: between 2011 and 2018, installation of 183 solar PV pumping systems with batteries, with 1,593 kWp capacity (figure 14), operated and maintained by CRDA, under the Ministry of Agriculture, Water Resources and Fisheries.

Figure 13 Cumulative number and capacity of solar PV systems with batteries installed in rural areas, 2010-2018



Source: ANME, 2020.

Figure 14 Cumulative number and capacity of solar PV pumping systems, 2011-2018



Source: ANME, 2020.

While women have benefited from the resulting improvements in living conditions, the systematic adoption of a gender approach in RE projects is not obvious. This report will therefore draw on the first-hand experience of other countries.

A. Case studies from around the world: benchmarking

1. Rockefeller project (Africa)⁴¹

The Rockefeller project seeks to address energy poverty in Africa by catalysing the growth of a viable mini-grid market. In an effort to boost electricity demand and increase affordability, the non-profit organization Energy 4 Impact is testing a rate reduction service to allow consumers to buy more electricity, and a revolving fund for mini-grid developers to finance the purchase of energy-efficient appliances to be sold on credit to their customers (households and businesses), including production equipment. The work aims to produce a database supporting arguments for more systematic backing for mini-grids, and low-income clients and the companies they serve.

2. Rural Electrification Densification Programme (Tanzania)⁴²

This programme is run by the Tanzanian Rural Energy Agency (REA), which works to extend the national power grid in rural areas. The Rural Electrification Densification Programme (REDP) includes an innovative component on the productive use of electricity to stimulate economic development and increase local commercial electricity absorption through support for microenterprise development and microenterprise financing facilities to buy productive tools and devices. The programme is implemented with funding from the Norwegian Government. Engineering and design firm Multiconsult, which acts as REA's technical assistance consultant for REDP, hired Energy 4 Impact to collaborate

on the programme component that promotes the productive use of energy.

3. Energy for Business Development (Kenya, Senegal, Tanzania and Uganda)⁴³

The \$3.23 million Energy for Business Development (EBD) project was the second phase of cooperation with Energy 4 Impact, financed by the ESME investment fund and administered by the World Bank. This phase continued support activities for project developers in the energy sector to instigate clean energy markets in Kenya, Senegal, Tanzania and Uganda. Its focus was on advisory services and capacity-building for micro, small and medium-sized enterprises on the development of productive use of energy in newly electrified villages, clean cooking and women's economic empowerment.

4. WIRE (Kenya and Tanzania)⁴⁴

Women Integration into Renewable Energy (WIRE) Value Chains was a two-year programme to support rural women entrepreneurs in Kenya and Tanzania by providing business and technology training and mentoring, and helping them access finance and market opportunities. Part of a United States Department of State initiative, partially funded by the Adventure Project, it empowered women across East Africa, India and Nigeria to provide their communities with access to clean energy. They were able to produce, manufacture, import, distribute or sell improved stoves, briquettes, biogas and solar products. By September 2018, WIRE had provided 1 million people with access to clean cooking and solar lighting products.

5. Solar Sister (Africa)⁴⁵

Solar Sister is a project, created by African women, dedicated to bringing life-changing, affordable clean energy to rural homes in communities. The programme focuses on recruiting, training and supporting local women

to become clean-energy entrepreneurs, selling and delivering goods to others in need. In summary, the business model combines women's economic empowerment with clean energy access. Founded in 2010, the network is introducing a gender-inclusive energy sector, enabling entrepreneurs to source energy in hard-to-reach areas due to remoteness, low population, lack of skilled workforce and limited purchasing power. Solar Sister buys RE products such as solar lights and green stoves wholesale and distributes them to women in "last mile" communities. The women, known by locals and trusted, resell them in markets and via their networks, earning a profit. At the time of writing, more than 4,000 Solar Sister entrepreneurs had provided clean energy access to more than 1.5 million people in Nigeria, Tanzania and Uganda.

6. Last Mile Connectivity Project (Kenya)⁴⁶

The Last Mile Connectivity Project (ONEC) aims to increase the use of the Kenya Power and Lighting Company's 35,000 distribution transformers spread across 47 counties. The objective, alongside other off-grid solutions, is to reach universal electricity access by 2022. The project's four main operations are: (a) construct the distribution network with 12,000 metres of LV distribution lines; (b) install equipment to connect a minimum of 284,200 residential and 30,000 commercial consumers; (c) project supervision and management; (d) build capacity in targeted areas of expertise. Gender analysis, conducted during the design phase, confirmed the burden on women and girls in low-income households, including exposure to smoke inhalation and indoor air pollution, and the risk of burns from candles and kerosene lamps. Links between access to energy and health were also noted. Some \$350,000 has been invested in a training programme for electricity utility staff, including gender workshops in all regions. This will ensure differentiated needs and priorities of rural women and men are taken into account in energy project development and implementation.

7. XiNa Solar One Project (South Africa)⁴⁷

The XiNa Solar One Project (OPSD) is a 100 MW concentrated solar power (CSP) plant that aims to (a) stimulate the renewable energy industry and contribute to an energy mix diversification and (b) enable the Broad Black Based Economic Empowerment company ownership in the project. It is designed to store energy and redistribute it during peak load demand periods and base load hours. The management positions created from this project have been given to women and the procurement targets have been set for women-owned suppliers. The project also highlights the socioeconomic scope through a percentage reinvestment into infrastructure and food programmes to help communities through education, living standards and prospects for young people.

8. Tagaddod Company (Egypt)⁴⁸

The company provides clean energy to businesses and households across Egypt, producing biodiesel from cooking oil from restaurants, hotels and factories. Used oil is collected under agreements with clients, either on a fixed schedule or through on-call visits. Revenue comes from the sale of biodiesel. For every 20 tons of used cooking oil, three tons of biodiesel is produced.⁴⁹ Tagaddod has produced around 5,512 tons of biodiesel, which in 2015, met the common European standard EN 14214.

9. Ouarzazate Solar Power Station project (Morocco)⁵⁰

NOOR II CSP is the second phase of the Ouarzazate Solar Power Station project. It is a 200 MW concentrated solar power (CSP) plant using parabolic troughs as reflective devices. A corporate social responsibility (CSR) initiative for women was started in association with the project. Following evaluation of phase I, phase II aims to reduce inequality in the region, targeting women and youth for indirect employment opportunities, in connection with the NOOR II (and also NOOR III) station.

Training programmes will enable women to improve their professional skills, increasing their employability and strengthening their social and economic power. Implemented through a partnership with the Polytechnic Institute of Ouarzazate, they will include sessions on RE, and on training women entrepreneurs and those active in agriculture. Women will be integrated in the project at different stages, by being appointed to the decision-making bodies. This project will also work with women's groups in Ouarzazate and other organizations active in this area.

B. Entry points for further access to small-scale renewable energy technologies in rural areas

The use of RE is critical for promoting sustainable development, the adoption of an agriculture model that protects ecosystems and natural resources, and in the fight against poverty and all forms of precariousness for rural women.

The selection analysis for the REGEND intervention site in Tunisia indicates the identified region, Chorbane in Mahdia Governorate, has the potential to promote the agricultural sector with a focus on gender. The region has basic community organizations to which women have access, which include the following:

1. SMSA El Faouz

The activities of SMSA El Faouz can be summarized as follows:

- Licensed milk collection centre, with a subsidiary store for feed;
- One-fuel outlets;
- Supply and sale of intensive animal feed and farming equipment;
- Sale but not production of feed concentrates;

- Rental tractors to help farmers with tillage operations;
- Organic mill for olive oil, installed in 2017 to diversify activities.

2. SMSA Neffatia

In the absence of men, rural women in Chorbane are responsible for improving living conditions in their households. In three cases among five interviews with members of the women's GDA – who collaborated with the SMSA Neffatia – plus two cases in the neighbouring Governorate of Sfax, men were found to be working outside Chorbane; in one case, a man was in Libya. Women manage family farming needs, making decisions and performing tasks formerly done by men. This has presented the women with the opportunity to assert themselves, and prove their ability to perform as efficiently as men. In parallel, the GDA has helped improve their position on an economic, social and personal level. It has built stronger personal capacities, using specific strategies that have fostered and increased self-confidence and women's ability to interact and influence social and cultural change in the local community. The activities of the GDA can be summarized as follows:

- Poultry farming;
- Rabbit breeding;
- Beekeeping and honey production;
- Extracting essential oils from aromatic and medicinal plants;
- Terroir products;
- Handicrafts.

It is evident, that women face several challenges, particularly the following:

- Facilitating access to credit for small businesses;
- Receiving technical training on marketing;
- Transitioning small and microenterprises to an open market environment, for women and for men;
- Accessing training cycles to improve business management skills, especially via on-job training.

The priority is to remove barriers to entrepreneurial activities, and promote inclusive financial services and a responsiveness to trade policies. Observed limitations facing women entrepreneurs include:

- Low mobility of women, especially in rural communities;
- Social barriers curtailing their work in general;
- Lack of technical skills, diplomas and the training required for value chains;
- Underdeveloped female entrepreneurial thinking in rural areas.

Promoting women's social inclusion is imperative, at national and local levels, through access to energy, including by the following:

- Supporting grass-roots community organizations for better female leadership, both economically and socially;
- Consolidating the diversity of women's income-generating activities with a greater hold on the entire sector to increase income and promote sustainability;
- Providing close technical assistance to ensure the optimal allocation of resources available to women and responding quickly to their expectations;
- Organizing awareness-raising actions involving men to facilitate the growth of the productive activities undertaken, especially initiating financial operations or commercial transactions;
- Involving local authorities to provide support for women's productive activities;
- Planning capacity-building programmes adapted to technical, managerial and behavioural levels.

C. Gender mainstreaming indicators

Gender indicators present quantitative and qualitative measures based on sex-disaggregated statistical evidence and are used to address changes in the social and political relations between genders. They include:

- Percentage of women with access to RE by governorate, delegation and environment;
- Percentage of women with access to RE for productive activities by governorate, delegation and field of activity;
- Percentage of women with access to bank finance for productive activities using RE;
- Impact of RE use on women's income by median annual salary and field of activity;
- Percentage of women with access to technical training in RE;
- Percentage of women at vocational training centres providing training in RE;
- Percentage of women engaged in activities related to RE;
- Number of actions for women to increase RE awareness;
- Percentage of women who have benefited from training/advocacy in RE;
- Percentage of females heading companies using RE;
- Number of organizations/institutions adopting strategies and plans promoting the use of RE technology for improving women's working environment;
- Number of strategies, plans and policies adopted by line ministries supporting women's empowerment in rural areas.

D. Potential stakeholders

Potential actors involved in rural development, women's empowerment and small-scale RE may include the following public institutions, non-governmental organizations (NGOs) and financial institutions:

- Ministry of Women, Family and Children: the ministry in charge of national policies to promote gender in different domains;
- National Agency for Energy Conservation (ANME): government organization founded in 1985 in charge of national energy conservation policies, including RE and energy efficiency;

- National Agency for Employment and Independent Work (ANETI): under the supervision of the Ministry of Employment and Independent Labour, this public body is in charge of national policies promoting entrepreneurship, including for women. Has representation at delegation (district) level in the form of regional directorates and employment offices;
- Centre for Research, Studies Documentation and Information on Women (CREDIF): supervised by the Ministry of Women, Family and Children, the centre is responsible for initiating research on gender and supporting public structures in mainstreaming gender in policies;
- Tunisian Association of Democratic Women (ATFD): NGO promoting gender equality and women's rights. Has been behind several advocacy actions that led to the adoption of legislation for women;
- Community organizations: more specifically, SMSAs;
- Technical cooperation programmes: for RE;
- Local associations: working to promote gender equality;
- Local municipalities;
- Enda Inter-arabe: national microfinance institution, increasingly interested in women's entrepreneurship in rural areas.

E. Capacity-building

Strengthening rural women's capacity to access RE should include, vis-à-vis the REGEND project, an approach adapted to local context and the nature of the interventions and objectives sought. Capacity-building actions should be designed within a participatory framework, with expected impacts clearly defined. It is recommended they include technical, managerial and behavioural aspects.

1. Strengthening technical capacities

This involves training and technical assistance that incorporates consultants and public support bodies, such as CRDA. Field-based technical training must be designed to promote self-learning and peer learning. Coaching provided by women for the benefit of other women is important for collective learning, as well as for the emergence of productive learning activities, local women's leaders and community solidarity. Discussion circles, working groups and exchanges (collective learning sessions) can be organized.

It is important these actions are defined within the framework of action on agriculture. Further, it is necessary to provide training and technical assistance in RE and the installation, operation and maintenance of equipment.

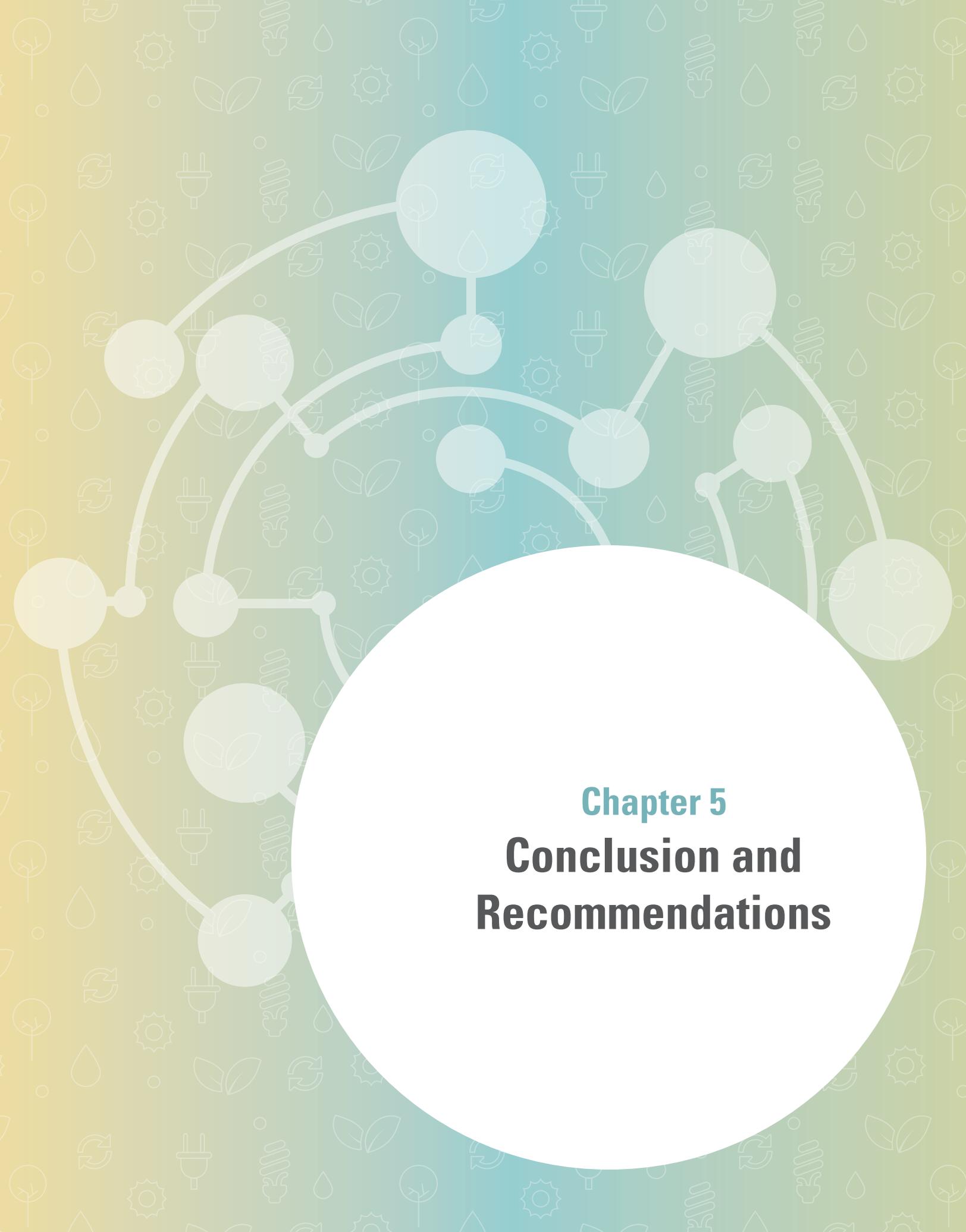
2. Strengthening managerial capacities

These actions must be appropriate to the target population and the size of the productive activities concerned. In this case, it is an adult-oriented learning exercise applied to small and medium-sized enterprises and could include the following:

- Financial concepts (managing receipts/expenses, equipment depreciation, cost calculations, provisional sales agreements);
- Marketing concepts (packaging, product promotion, marketing and negotiation techniques);
- Management concepts (human resource management, time management, planning).

3. Personal empowerment (soft skills)

The primary objective is to strengthen women's leadership so they can learn about strategic self-promotion. These actions can take the form of discussion circles addressing adapted topics such as interpersonal communication, leadership, meetings and stress management.

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Chapter 5

Conclusion and Recommendations

5. Conclusion and Recommendations

The use of RE is no longer a choice. Rather it is a basic necessity that has significantly influenced Tunisia's energy policies. The emerging empowerment of women and gender equality is prominent, as indicated by the supporting evidence discussed above. Both renewable energy technologies and gender equality are basic necessities that will continue to progressively influence Tunisia's energy, social, governmental and policy sectors. A number of recommendations should be highlighted, as follows:

- Continue to support efforts to enhance communication and collaboration between ministries and governmental bodies at central and local levels, financial institutions and the private sector. Promote synergetic collaboration on joint objectives among national and international organizations in the country to avoid overlap and ensure increased efficiency in achieving development goals, particularly those related to SDG 5, SDG 7, and SDG 10;
- Adopt a clear national policy on the use of RE for rural income-generating agricultural activities to combat poverty, social exclusion and regional inequality. A coordination mechanism between the Ministry of Women, Family and Children, Ministry of Agriculture, ANME, and the Government must be set up to steer such actions;
- Define gender indicators that measure the effectiveness of energy policies in rural areas, including the use of RE. They should be subject to continuous monitoring and periodic publishing, including in Tunisia's annual gender report;
- Establish a system of RE and gender marker scoring, by governorate, that can be used by the Tunisian authorities for grants/ endowments;
- Support NGOs in rural areas working for RE and for women's empowerment. An association collective should be created to provide training and raise awareness to support rural women as well as advocacy with public authorities and international programmes and institutions;
- Involve financial institutions, particularly microfinance units, in adopting specific measures that favour women and RE in rural areas. Such preferential measures – intended to address disadvantaged situations and remove barriers – might include granting credits to create/extend projects using RE with appropriate facilities;
- Increase awareness on the relationship between access to finance/microfinance and the positive impact on gender mainstreaming and socioeconomic development in rural areas. Further, support the establishment of low-cost financial instruments to help communities accept and move towards using RE;
- Develop capacity-building activities and curricula on RE operation and maintenance for both men and women, and ensure that the activities are gendered;
- Highlight the importance of language and promote gender mainstreaming into the language, terms and concepts used in the different sectors;
- Support women's organizations focusing on the use of RE for productive activities with targeted capacity-building that promotes RE and project expand.

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