



PROMOTING INCLUSIVE GROWTH IN ARAB COUNTRIES

RURAL AND REGIONAL DEVELOPMENT AND
INEQUALITY IN TUNISIA

Mongi Boughzala
Mohamed Tlili Hamdi



Mongi Boughzala is a professor of economics at the University of Tunis El Manar.

Mohamed Tlili Hamdi is an associate professor of economics at the University of Sfax in Tunisia.

Acknowledgements:

We would like to thank all of those in Sidi Bouzid and Le Kef who provided us with precious data and information. We also thank Hafez Ghanem and Michael Rettig for their excellent comments on earlier versions of the paper. We also benefited from discussions with the people we met at the workshops on regional development organized by the GIZ in Sidi Bouzid and le Kef.

Abstract:

Regional disparities and inequality between the rural and the urban areas in Tunisia have been persistently large and perceived as a big injustice. The main regions that did not receive an equitable share from the country's economic growth, as compared to the coastal regions that are highly urbanized, are the predominantly rural western regions. Their youth often have to migrate to the cities to look for work and most of them end up with low-paying and frustrating jobs in the informal sector. The more educated among them face a very uncertain outlook and the highest rate of unemployment. This bias is strongest for female workers and university graduates living in the poor rural regions. The purpose of this paper is to study the underlying causes and factors of these disparities and to discuss policies and measures that may allow these regions to benefit from faster and more inclusive growth.

Regional disparities do not mean that Tunisia's rural regions remain totally backwards or that nothing has been achieved in the poorer regions. Actually, over the previous five decades various governmental programs and projects were implemented in these regions—in particular in the area of education. But the government efforts in the western regions were much less substantive than they were in the rest of the country, and little was done to develop modern non-agricultural economic activities. Moreover, while the democratization of education was not successful in ensuring job growth, it was critical in raising the level of awareness about regional disparities and the urban/rural economic gap.

Inadequate government investment is not the only factor responsible for Tunisia's rural poverty. The scarcity of natural resources (mainly water), the distribution of land and the limited access to financial resources are among the other important structural economic constraints facing agricultural development.

Two regions are studied in more detail, namely Sidi Bouzid in the midwest and Le Kef in the northwest. We also give an overview of best international practices and the literature on economic development, with a focus on the case of South Korea and Taiwan in order to draw relevant lessons.

We argue that, while it is possible to boost productivity and income for the rural population in Tunisia's poor regions, improving productivity in agriculture is part of the solution. However, it cannot ensure a decent livelihood for all of Tunisia's rural population, in particular for the impoverished Tunisians that own small farms or are almost landless. Regional development requires major structural reforms and strategies and comprehensive government-initiated programs operated within a holistic framework that combines public and private interventions. In the case of some regions with limited resources, such as Sidi Bouzid, this will not be sufficient; inevitably, rural to urban exodus and migration to other regions will continue. Politically, this may be hard to accept and to include in political agendas.

CONTENTS

Introduction1

Regional and Rural Development and Disparities in Tunisia: An Overview 4

 Unequal Progress and Development 4

 Income Inequality and Poverty..... 8

Development Challenges and Potential in Two Tunisian Rural Governorates: Le Kef and Sidi Bouzid 12

 Sidi Bouzid 12

 Fairly Effective Rural Development Programs and Forgotten Youth 12

 Natural Resources..... 14

 Government Services 18

 Le Kef20

 Population and Labor Force Capacities..... 21

 Rural and Agricultural Development in Le Kef.....24

 Development Institutions and the ODESYPANO Experience.....28

Lessons from International Experiences 31

Alternative Policies and Recommendations34

References 35

Endnotes36

LIST OF TABLES

Table 1: Tunisia’s Labor Force by Level of Education, 1966-2011 (% of total labor force) 5

Table 2: Tunisia’s Labor Force by Region and Level of Education, 2010 (Number of People)..... 5

Table 3: Tunisia’s Labor Force by Region and Level of Education, 2010 (%)..... 5

Table 4: Tunisians’ Access to Basic Infrastructure by Year (% total population)..... 6

Table 5: Distribution of Industrial Activities by Region (enterprises with more than 10 employees)6

Table 6: Per Capita Consumption in Tunisia by Region, 2010 (2005 Tunisian dinars)..... 8

Table 7: Per Capita Consumption in Tunisia by Region (2005 Tunisian dinars) 8

Table 8: Per Capita Consumption in Tunisia by Urban and Rural (2005 Tunisian dinars)..... 9

Table 9: Poverty Rate in Tunisia: By Location and Year (%). 9

Table 10: Poverty Rate in Tunisia: By Region and Year (%)	9
Table 11: Unemployment Rate in Tunisia by Region and Education Level, 2010 (%)	11
Table 12: Irrigated Land in Tunisia, 1995-2012 (hectares)	14
Table 13: Water Resources in Sidi Bouzid	15
Table 14: Distribution of Farm Land in Sidi Bouzid, 1994-2004	17
Table 15: Distribution of Irrigated Land in Sidi Bouzid by Size of the Holdings, 2005	17
Table 16: Labor Force by Education Level in Sidi Bouzid, 2010 (%)	19
Table 17: Farmers by Education Level in Sidi Bouzid, 2005 (%)	19
Table 18: Farmers by Education Level in Tunisia, 1996	19
Table 19: Population Growth of Le Kef, 2007-2012	21
Table 20: Labor Participation and Unemployment in Le Kef, 2007-2012	23
Table 21: Unemployment Rates of Youth and Women in Le Kef, 2010 (%)	24
Table 22: Land Distribution by Farming Mode in le Kef and Sidi Bouzid, 2005 (holdings)	26
Table 23: Distribution of Holdings by Size in le Kef, 2005	26
Table 24: Agricultural Debt in Le Kef, 2007 (thousands of Tunisian dinars)	28
Table 25: Water Resources and their Use in Le Kef, 2012 (Mm ³)	29
Table 26: Water Erosion in Le Kef, 2003	29

LIST OF FIGURES

Figure 1: Geographic Concentration of Tunisia's Employment Opportunities, 2010	7
Figure 2: Poverty Rate in Tunisia: By Region and Year (%)	10
Figure 3: Map of Sidi Bouzid Governorate, Tunisia	13
Figure 4: Distribution of Irrigated Land and Major Aquifers in Sidi Bouzid	16
Figure 5: Map of Le Kef Governorate, Tunisia	20
Figure 6: Population Growth of Le Kef, 2007-2012	22
Figure 7: Decreasing Unemployment in Le Kef, 2007-2012 (% total population)	23
Figure 8: Distribution of Holdings by Size, 2012 (%)	27

PROMOTING INCLUSIVE GROWTH IN ARAB COUNTRIES

RURAL AND REGIONAL DEVELOPMENT AND INEQUALITY IN TUNISIA

Mongi Boughzala and Mohamed Tlili Hamdi

INTRODUCTION

The January 2011 uprising in Tunisia was about jobs and justice for all regions of the country. Although some indicators suggest that overall inequality and poverty have decreased in Tunisia over the last five decades and that the size of the middle class has grown, by 2011 regional disparities and inequality between the rural and the urban areas had become unacceptable. Regional disparities have been persistently large in Tunisia and perceived as a big injustice. The country's rural regions, mostly located in the western part of the country, did not receive an equitable share of benefits from the country's economic growth as compared to the coastal regions. Some areas have benefited very little. Youth originating from the poor rural areas often have to migrate to the cities to look for work and most of them end up with low-paying and frustrating jobs in the informal sector. The more educated among them feel even more politically and economically excluded, because they face a very uncertain outlook and the highest rate of unemployment.

Tunisia's poorer regions are predominantly rural and their economies are much less diversified. Agriculture remains the main economic sector in these areas and

offers only low-productivity and low-pay employment. As a result, the per capita income in these regions is around half that of the wealthiest regions, and the poverty rate is three times higher.

Although Tunisia has made some important progress building women's rights, gender bias is another serious concern that is more prevalent in rural areas. However, there are many promising statistics too. Girls have equal access to schools at all levels and in basically all regions. The absolute number of female students has outgrown that of males. And more than 60 percent of university graduates are females. Yet the rate of female participation in the labor force remains low. Only 26 percent of Tunisian females participated in the country's labor market in 2011, compared to 70 percent of males. The female unemployment rate is also much higher—nearly twice the rate for males—and when employed, they often receive lower pay. This bias is strongest for female workers and university graduates living in the poor rural regions in the west of the country. Female participation in agricultural employment is relatively high, but such employment is most often unpaid family work or seasonal work with the lowest wages in the country.

Leading up to the 2011 uprising, these disparities strengthened the sentiment of exclusion, injustice and discrimination felt among Tunisians from the predominantly rural regions. These Tunisians strongly believed that their situation was caused mainly by biased policies and unfair regional distribution of public investments. Moreover, while the democratization of education was not successful in ensuring job growth, it was critical in raising the level of awareness about regional disparities and the urban/rural economic gap.

Regional disparities do not, however, mean that Tunisia's rural regions remain totally backwards or that nothing has been achieved in the poorer regions. Actually, over the previous five decades various government programs and projects were implemented in these regions. Dams were built, infrastructure projects were completed, millions of olive trees were grown and schools were opened everywhere. But the government effort in the western regions was much less substantive than it was in the rest of the country, and little was done to develop modern non-agricultural economic activities.

Inadequate government investment is not the only factor responsible for Tunisia's rural poverty. The scarcity of natural resources (mainly water), the distribution of land and the limited access to financial resources are among other the important structural economic constraints facing agricultural development. The majority of the rural population is either landless or owns micro-farms (defined as less than 10 hectares of rather arid land or less than two hectares of irrigated land), and has a limited formal education. Consequently, they have a very limited access to new technologies and financial resources and their productivity is low.

What then is to be done to provide new opportunities for the people of these primarily rural regions? And what are the appropriate policies and measures that will allow them to benefit from faster and more inclusive growth? These are the questions to be addressed in this paper.

The answers to these questions will be based on the study of Tunisians' present circumstances, with a focus on the main barriers to growth in underdeveloped regions both in terms of resources (public and private) and in terms of institutions and empowerment. Special attention will be paid to the population, the labor force, the infrastructure, financial constraints and the institutional system. Two regions—called governorates in Tunisia—will be covered in more detail, namely Le Kef in the northwest and Sidi Bouzid in the midwest. We will also examine best international practices and the literature on economic development. There is indeed much to be learned from rural and regional development across the world, especially from the experience of the Far East and Southeast Asian countries, most notably the cases of South Korea and Taiwan.

This paper will propose alternative policies to those now in place and offer recommendations. We argue that it is possible to boost productivity and income for the rural population in Tunisia's poor regions, but fundamentally, improving productivity in agriculture is part of the solution but cannot serve as the entire solution—as agriculture by itself cannot ensure a decent livelihood for all of Tunisia's rural population. Especially concerning the impoverished Tunisians that own small farms or are almost landless, a strategy based on micro-farming alone cannot be sustainable or efficient in the long term. Regional development

requires major structural reforms and strategies and comprehensive government-initiated programs operated within a holistic framework that combines public and private interventions. These programs have to integrate public infrastructure, training and capacity development, marketing, financial resources and institutional reforms. Coordination among all these dimensions is primarily the responsibility of Tunisia's government, though development efforts could surely remain market-friendly and have a participative approach. However, because these development programs must efficiently use resources in order to be sustainable, and because some regions with limited resources may be unable to operate such programs, it is unlikely—even in the long run—that all areas of Tunisia will be able to provide enough quality employment opportunities to their residents and youth.

Inevitably, more rural Tunisians will eventually migrate—either within the same region or between regions. In some cases, migration between regions

is likely to remain the main stabilizing mechanism. Politically, this will not be an easy sell, as all of Tunisia's governorates claim that they are entitled to equal shares of government programs.

This study will be organized in four sections. The first section will give an overview of regional and rural development and disparities in Tunisia. It will examine indicators concerning population, public investment in education, infrastructure, natural resources and financial resources. This section will illustrate the overall situation and the main factors underlying regional disparities in Tunisia. The second section will focus on Tunisia's Kef and Sidi Bouzid governorates and rural development. This section will also address specific causes of rural poverty and barriers to development and youth employment. The third section briefly reviews regional and rural development in Asian countries in order to draw relevant lessons. Finally, the fourth section concludes and suggests policy recommendations.

REGIONAL AND RURAL DEVELOPMENT AND DISPARITIES IN TUNISIA: AN OVERVIEW

Development plans started in Tunisia in the early 1960s shortly after its independence,¹ but little attention was paid by these plans to regional development issues. Later, attempts were made to integrate the geographic and regional dimensions into the development planning process, but these were minimal and inefficient—the approaches remained primarily macroeconomic and sectoral. Moreover, the Tunisian government has always been very centralized and biased in favor of the coastal cities. The eastern regions and cities kept attracting more public investment because, for historical reasons² compounded by the lack of democracy, the western regions were politically underrepresented. The strongest lobbies in Tunisia came from the east coast, and they systematically pushed for more investments in their regions while neglecting the other regions. It took at least 20 years before the first regional development programs were launched and more than 30 years for the government to admit that the benefits of growth were unequally distributed among regions. Some actions were taken starting in the 1980s, mainly in the form of integrated development programs, but these were not enough to change the main resource-allocation mechanisms or significantly reduce the level of inequality. Many institutions were created for the sake of regional development, but none of them could initiate and implement major comprehensive plans for the poor regions.

Unequal Progress and Development

The regional disparities found in Tunisia do not mean that nothing was achieved in the western regions; rather, they reflect that the poor western regions received an unequal share of the development process.

In accordance with the Lipsetian theory,³ which argues that democracy is “secreted out of dictatorship by economic development,” the poorer regions could rebel and ask for a more equitable and democratic system only after reaching a threshold of development. Substantial progress was actually achieved everywhere in the area of education, health and other public utilities and basic services. By 2010, Tunisia’s illiteracy rate had dropped to less than 22 percent—including in the western regions—and around half of the population aged 10 years or more had a secondary or higher education. This compares favorably to the early 1960s, when the illiteracy rate was more than 65 percent and more than 90 percent of the population had little or no education. There was virtually universal access not only to education but also to water, electricity and basic health care in all urban areas and in a large extent of rural areas, and the transportation and communication infrastructure was also much more developed than in the 1960s. In short, the government invested in all regions, but simply less so in the western ones.

Starting in the 1990s, the Tunisian government showed increased interest in regional development. Development plans and documents from the time show that cutting regional disparities was a government priority. However, the public resources allocated to the poorer regions and the strategies adopted to reach the stated goals were insufficient. The distribution of investment remained weighted toward the more powerful regions. Private investment, which depends on the level and quality of public investment, was also much lower in the western regions. Investment laws and fiscal incentives offered to attract private investors toward Tunisia’s poor regions had little effect on investments. This was further aggravated by the excessive centralization of the government system and more generally by the poor

Education Level	1966	1975	1984	1994	2001	2004	2010
Higher	1.2	1.4	3.3	7	10	7.9	17
Secondary (General and Professional)	7.1	12.8	20	29	30	32	38
Primary	26.2	32.6	34.4	40.1	40.2	37	34.9
None	68.0	56.1	46.4	37.2	24.3	23,1	10.1
Total	100	100	100	100	100	100	100

Source: National Institute of Statistics - Tunisia (INS)

	Higher	Secondary	Primary	None	Total
Grand Tunis	245,755	392,192	246,065	34,378	919,805
Northeast	82,257	227,799	226,779	64,280	601,600
Kef	13,470	28,888	38,691	27,040	108,127
Northwest	54,508	128,622	156,058	94,160	433,646
Mideast	156,924	341,927	321,402	63,568	885,140
Sidi Bouzid	17,603	40,559	52,136	39,245	149,559
Midwest	54,488	129,403	171,260	97,111	452,393
Southeast	54,810	114,620	101,704	15,208	286,714
Southwest	38,864	78,230	59,164	13,551	189,941
Tunisia Total	687,606	1,412,794	1,282,432	382,256	3,769,238

Source: National Institute of Statistics - Tunisia (INS)

	Higher	Secondary	Primary	None	Total
Grand Tunis	26.7	42.6	26.8	3.7	100
Northeast	13.7	37.9	37.7	10.7	100
Northwest	12.6	29.7	36	21.7	100
Kef	12.5	26.7	35.8	25	100
Mideast	17.7	38.6	36.3	7.2	100
Midwest	12	28.6	37.9	21.5	100
Sidi Bouzid	11.8	27.1	34.9	26.2	100
Southeast	19.1	40	35.5	5.3	100
Southwest	20.5	41.2	31.1	7.1	100
Tunisia Total	18.2	37.5	34	10.1	100

Source: National Institute of Statistics - Tunisia (INS)

Year	2007	2008	2009	2010	2011
Access to electric power (%)	99.4	99.4	99.5	99.5	99.5
Safe water supply (%)	84.7	85.0	85.4	85.7	85.8
Access to safe water (%)	97.3	97.4	97.6	97.8	97.9
Access to sanitation networks (urban) (%)	81.6	82.4	83.6	84.2	84.7

Source: National Institute of Statistics - Tunisia (INS)

business environment. In such an environment, informal and sometimes corrupt institutions emerged to fill the gaps in the rigid and inefficient regulatory system.

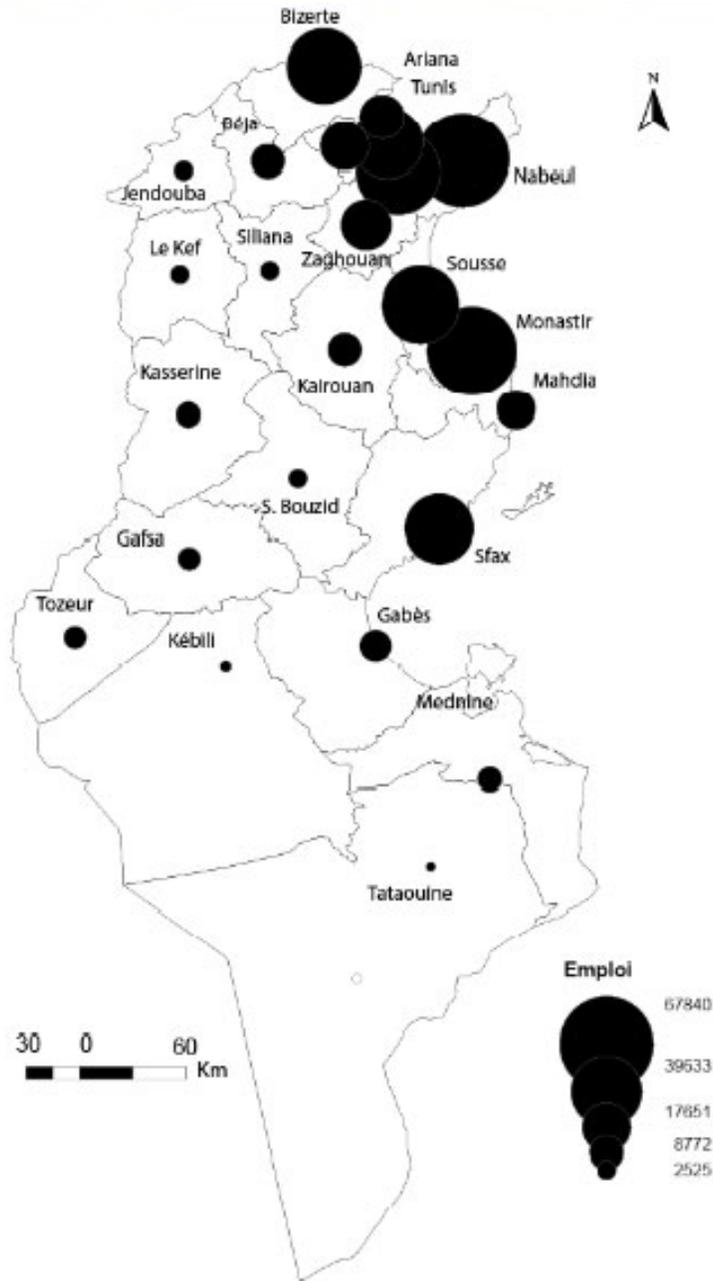
The outcome is that by 2010, nearly 90 percent of new enterprises and jobs were created in the ma-

ior coastal governorates of Tunis, Bizerte, Nabeul, Sousse, Monastir and Sfax—that is, in the northeast and mideast regions, where 60 percent of the Tunisian population lives. The share of foreign investments concentrated in these coastal regions is even higher; 95 percent of foreign direct investment is there. Not much was done to break this vicious circle.

	Enterprises		Employment	
	Number	Percentage	Number	Percentage
Northeast	1,291	22.8	131,407	27.7
Tunis region	1,427	25.1	127,477	26.9
Mideast	2,058	36.4	158,441	33.7
Northwest	275	4.3	16,796	2.5
Midwest	242	4.3	16,982	3.6
Southeast	242	4.3	13,958	2.9
Southwest	126	2.2	8,576	1.8
Total Tunisia	5,661	100	473,637	100

Source: Ministry of Planning and Regional Development ODNO

Figure 1: Geographic Concentration of Tunisia's Employment Opportunities, 2010



Source: Ministry of Planning and Regional Development ODNO

Income Inequality and Poverty

As a result of low public and private investment in Tunisia's western regions, income and consumption levels there are significantly lower. Per capita consumption in the poorest region—the midwest—is 1,138 Tunisian dinars per year. This is half that of the wealthiest region, the Tunis metropolitan region, where per capita consumption is 2,390 Tunisian dinars⁴ per year. This is of course a key indicator of the regional disparity and a determinant factor of the observed social unrest and continuous migration to the eastern cities. The northwest and southwest regions are a little better off (mainly because they already lost a large

part of their population to the migration process). The southeast has been catching up for the last decade following a relatively rapid flow of investments. At 4.7 percent, the southeast had the highest consumption growth rate in Tunisia, where the average is only 2.9 percent.

Not surprisingly, in the rural areas the income level as measured by consumption is much lower—about half that of the urban level and less than half of the level seen in large cities, which again explains why these cities keep attracting waves of migrants from the west.

	Urban	Rural	Average
Grand Tunis	2,475	1,386	2,390
Northeast	1,884	1,189	1,613
Northwest	1,841	1,162	1,416
Mideast	2,344	1,441	2,084
Midwest	1,652	890	1,138
Southeast	1,989	1,424	1,826
Southwest	1,702	965	1,466
National Average	2,171	1,161	1,820

Source: National Institute of Statistics - Tunisia (INS)

Region	Per Capita Consumption			Annual growth rate, 2000-2010 (%)
	2000	2005	2010	
Grand Tunis	2,000	2,331	2,624	2.8
Northeast	1,320	1,547	1,718	2.7
Northwest	1,127	1,292	1,311	1.5
Mideast	1,707	1,902	2,189	2.5
Midwest	968	1,034	1,212	2.3
Southeast	1,126	1,574	1,787	4.7
Southwest	1,068	1,338	1,507	3.5
Tunisia	1,441	1,696	1,919	2.9

Source: National Institute of Statistics - Tunisia (INS)

The lower consumption and income levels are correlated with more poverty and unemployment. The poverty rates are much higher in the western regions—averaging 25.9 percent in the northwest—and are highest in the midwest, where the average poverty rate is 32.3 percent. Poverty is also higher in the rural areas, where it is about 50 percent higher than the

national average and more than twice the rate seen in large cities (only 9 percent in 2010). However, all poverty rates, including in the western regions and in the rural areas, have notably decreased over the last five decades, especially between 2000 and 2010. This is consistent with the idea that in these regions some efforts were made but less than in the east.

Milieu	Per Capita Consumption			Annual growth rate, 2000-2010 (%)
	2000	2005	2010	
Communal	1,985	2,326	2,516	2.4
Big cities	2,291	2,640	3,005	2.8
Average towns	1,746	2,045	2,124	2.0
Rural	1,048	1,213	1,337	2.5
Tunisia Average	1,441	1,696	1,919	2.9

Source: National Institute of Statistics - Tunisia (INS)

	Poverty Rate			Extreme Poverty Rate		
	2000	2005	2010	2000	2005	2010
Tunisia	32.4 (0.8)	23.3 (0.7)	15.5 (0.6)	12.0 (0.5)	7.6 (0.4)	4.6 (0.3)
Large cities	21.5 (1.4)	15.4 (1.1)	9.0 (1.0)	4.3 (0.6)	2.2 (0.4)	1.3 (0.3)
Small cities	32.5 (1.3)	22.1 (1.1)	14.0 (0.9)	10.5 (0.8)	6.5 (0.6)	2.9 (0.4)
Rural	40.4 (1.3)	31.5 (2.6)	22.6 (0.6)	19.1 (1.0)	13.4 (0.9)	9.2 (0.8)

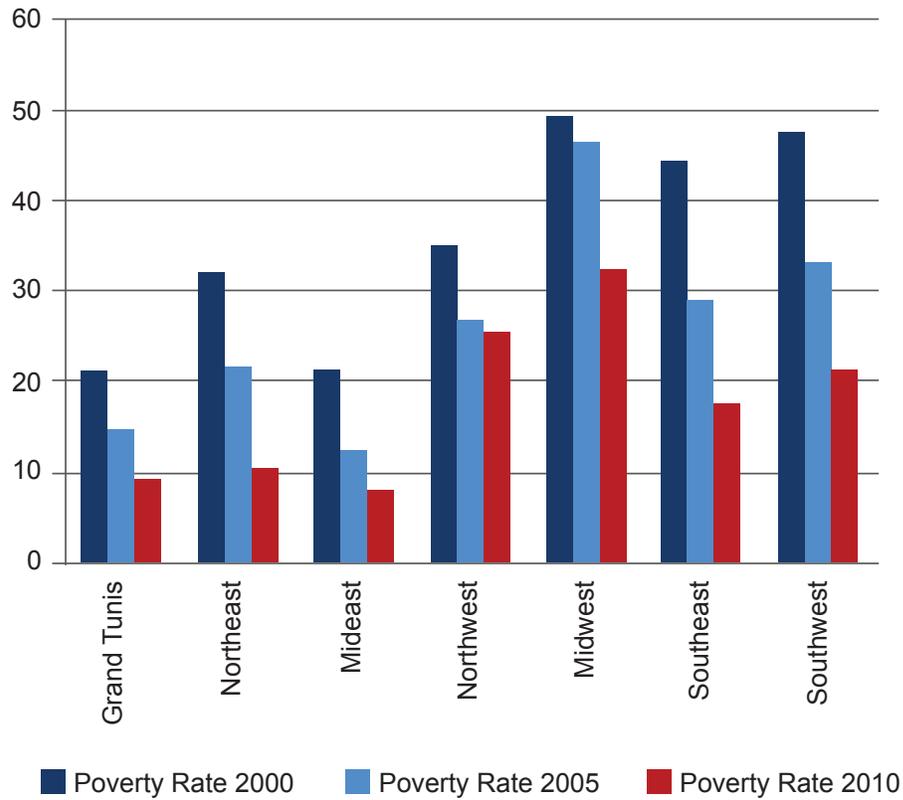
Note: Numbers between parentheses are standard deviations.

Source: National Institute of Statistics - Tunisia (INS)

	Poverty Rate			Extreme Poverty Rate		
	2000	2005	2010	2000	2005	2010
Grand Tunis	21.0	14.6	9.1	4.3	2.3	1.1
Northeast	32.1	21.6	10.3	10.5	5.4	1.8
Northwest	35.3	26.9	25.7	12.1	8.9	8.8
Mideast	21.4	12.6	8.0	6.4	2.6	1.6
Midwest	49.3	46.5	32.3	25.5	23.2	14.3
Southeast	44.3	29.0	17.9	17.5	9.6	4.9
Southwest	47.8	33.2	21.5	21.7	12.1	6.4

Source: National Institute of Statistics - Tunisia (INS)

Figure 2: Poverty Rate in Tunisia: By Region and Year (%)



Source: National Institute of Statistics - Tunisia (INS)

Unemployment is also higher in the western and southern regions. However, unemployment is a problem everywhere for educated youth, especially university graduates. Women are even harder hit with an unemployment rate about twice that of men—about 50 percent for women with a higher education degree.

These figures reflect very few good opportunities in these predominantly rural regions. Only occasional or

seasonal low paid jobs are available, often as salaried farm workers or employees in the informal sector in very hard conditions.

The next section more deeply explores the work conditions and development issues in the predominantly rural regions of Kef and Sid Bouzid, as well as their potential.

Table 11: Unemployment Rate in Tunisia by Region and Education Level, 2010 (%)					
Region	Total	Higher Education	Secondary	Primary	None
Grand Tunis	13.2	14.4	14.5	11.1	4.0
Northeast	11.0	21.9	11.7	8.3	4.4
Kef	12.4	28.0	15.2	10.1	4.9
Northwest	14.4	31.6	17.9	10.6	6.1
Mideast	9.3	19.4	8.1	6.5	4.7
Sidi Bouzid	14.7	40.2	16.9	10.3	7.0
Midwest	16.8	35.4	16.7	8.8	5.0
Southeast	16.8	35.4	16.7	8.8	5.0
Southwest	23.4	41.7	24.0	14.1	8.4
Total Tunisia	13.0	22.9	13.7	9.2	5.7

Source: National Institute of Statistics - Tunisia (INS)

DEVELOPMENT CHALLENGES AND POTENTIAL IN TWO TUNISIAN RURAL GOVERNORATES: LE KEF AND SIDI BOUZID

What Le Kef and Sidi Bouzid governorates have in common is that they are both heavily dependent on agriculture and have benefited relatively little from the development process during the past five decades. No special effort or major non-agricultural project has been directed toward either of them. They attracted little private non-agricultural investment and a significant proportion of their labor force has migrated to other regions because of the lack of employment opportunities. Le Kef has a negative population growth. More than half of its population remains rural. Of course, as indicated above, the governorates have seen gains in terms of education, poverty reduction and access to basic services. However, compared to their human and natural potential and to other regions, they have not received their fair share of the progress made in Tunisia.

Sidi Bouzid

Sidi Bouzid is where the Tunisian uprising started in December 2010. We argue that this was not by chance. Sidi Bouzid is geographically at the heart of Tunisia.⁵ It covers approximately 4.3 percent of Tunisian territory and hosts about 4.1 percent of the Tunisian population. More than 70 percent of its population is rural and involved in agricultural activities. Forty-one percent of its labor force is fully employed in agricultural activities. Sidi Bouzid is part of the midwest region and became a separate governorate in 1973. It is situated in a rather arid or semi-arid area. Indeed, its agriculture depends on very volatile and uncertain rainfall. More than half of Sidi Bouzid's agriculture also relies on underground water reserves, the gov-

ernorate's only treasure, but one that is under threat of over-exploitation. Out of its 460,000 hectares of cultivated land, around 48,000 hectares (a little more than 10 percent) benefited in 2012 from an irrigation system.

Fairly Effective Rural Development Programs and Forgotten Youth

It is important to note that modern irrigated agriculture has been introduced rather recently in this region; it started in the 1970s and was accelerated in the 1980s, ultimately generating an agricultural boom. Sidi Bouzid became a major agricultural center in just a few decades, known especially for its fruits, vegetables (20 percent of total national production) and olive oil. But the benefits of modern irrigation have reached their limit.

Agriculture has always been the main pillar of Sidi Bouzid's economy, but until the 1970s most of this agriculture was based on low-yield cereal production and semi-nomadic sheep herding. There were only few small sedentary communities that mastered vegetable growing. Within decades, a state-initiated process led to a deep transformation that turned the governorate's semi-nomadic people into peasants and farmers with the skills for intensive irrigated farming. The state's process had a few components. First, the tribally-owned land was divided into private lots; this major reform created the incentive for investing in agriculture and was critical for the emergence of sustainable family farming. The government also built the first water systems based on ground water and deep aquifers and facilitated farmers' access to financial resources and to subsidized agricultural inputs, including seeds and fertilizers.⁶ Important public projects in infrastructure, roads and electrical and safe water networks were also completed to the benefit of all the agricultural community, including the poor.

Private investment was even more substantial. Farmers of small and medium-sized plots responded quickly to the state's intervention and then took over. They continued to invest in irrigation facilities even when the state, starting in the early 1990s, slowed down its interventions and stopped or reduced the subsidization of most of the inputs. Thus, almost 90 percent of the irrigation investments—48,000 hectares of irrigated land—were the outcome of private investment. The total irrigated area more than

doubled since 1995; it increased from 22.3 thousand hectares in 1995 to 48.8 thousand hectares in 2012. This growth was mainly a private sector achievement. It was obviously profit-driven. The diversified pattern of production, combining vegetables, fruits, olives, cattle, milk and poultry ensured more stable incomes. Thus, in 2005, Sidi Bouzid had become a major producer of olive oil (9.5 percent of national production), almonds (23.8 percent), melons, tomatoes (8.8 percent) and pomegranates (10 percent).

Figure 3: Map of Sidi Bouzid Governorate, Tunisia



Table 12: Irrigated Land in Tunisia, 1995-2012 (hectares)		
1995	2005	2012
22,320	39,876	48,431

Source: Regional Agricultural Development Commissioner (CRDA), unpublished data

As a result, Sidi Bouzid saw incomes increase and life conditions and well-being improve significantly in many of its villages and rural areas.

This success story has been partly inclusive, not fully. The profits generated and the proven water reserves attracted investors from outside the region, mainly from Sfax,⁷ who developed large-size modern farms concentrated in the most fertile part of Sidi Bouzid. These investors then transferred profits back to their home region. As a result, the local population benefited very little. When these people agreed to sell their land to investors from outside their governorate (now perceived as new colonizers), they did not realize that they were making such a bad deal.

Moreover, the growth process did not allow for youth integration, employment and participation. Income growth and easy access to schooling offered young people a chance to benefit from secondary and tertiary education. They expected this would be their key to better employment in various sectors either in the region or elsewhere in the country, but for many of them this did not happen. Few employment opportunities were available, and fewer still inside the governorate.

This is not to say that the overall rate of unemployment is much higher in Sidi Bouzid than the average national rate. The real issue is that unemployment is very high for educated youth, especially those with

tertiary education. In 2010, the average unemployment rate for university graduates in Sidi Bouzid was around 40 percent. It was even higher for young girls and women, many of whom have simply exited the labor market. While there has been a persistent scarcity of seasonal, low-paid farm laborers, such low-paid work is far from their expectations and to some extent not socially valuable. For those educated young people interested in farming and willing to start a farming business, they often lack the financial resources and own little or no land (water and land resources are quite limited). As a result, young people in Sidi Bouzid typically join a lengthy waitlist for formal—preferably government—jobs.

Consequently, because the likelihood of suitable employment was slim, the educated youth of Sidi Bouzid were and still are frustrated and ready to express their anger by all available means. And they have not been alone; similar emotions run through many other comparable parts of the country. The first sparks of the rebellion ignited in December 2010, and then quickly spread over the country and turned into the much more complex revolution in Tunisia and in the rest of the Arab Spring countries.

Natural Resources

The most important natural resources in Sidi Bouzid are water and land.

Water

Water is the most important resource in Sidi Bouzid, and is also a significant constraint. The existing but limited water supply constrains the development not only of agriculture but also of other activities considered for future investment and initiatives. The governorate's underground reserves are the most valuable asset of the region, and this landlocked area's dis-

tance from the relatively water-rich region in the north and from seawater means there are no other reasonable alternatives. There is already evidence Sidi Bouzid is over-exploiting its water and it should urgently promote water-saving, more efficient water-production techniques and sustainable cropping patterns. Sidi Bouzid's total water reserves are around 281 million cubic meters per year, a little more than half of which—151 million cubic meters—come from underground sources. The following table—based on current official statistics—seems to indicate that 73 percent of Sidi Bouzid's deep aquifers are in use and so there is room for further investments in irrigating more land. In fact, the government authorities have said that this statistic (the only statistic available so far) is outdated and inaccurate because of an increasing number of farmers that pump out of deep aquifers illegally, and there is no accurate information available about the rate of use of these aquifers. However, there are indications that the critical over-exploitation level has already been reached and that the quality and volume of the water reserves are deteriorating. This is possibly the outcome of a more lenient government attitude toward the revolting Sidi Bouzid as a method to appease its rebellious population.

Moreover, ground water is not uniformly distributed over the region—only few localities are endowed with this resource. The unlucky areas are of course even more frustrated, and the apparently luckiest, the Ergueb area, is in fact the most unhappy because of the way its land was managed. Because the Ergueb population was so poor and poorly informed they sold most of their best land to investors coming from the relatively wealthy region of Sfax. These investors had access to better information about the water resources. Nevertheless, they have created in Ergueb the most modern and prosperous farms where they employ the local population as cheap labor.

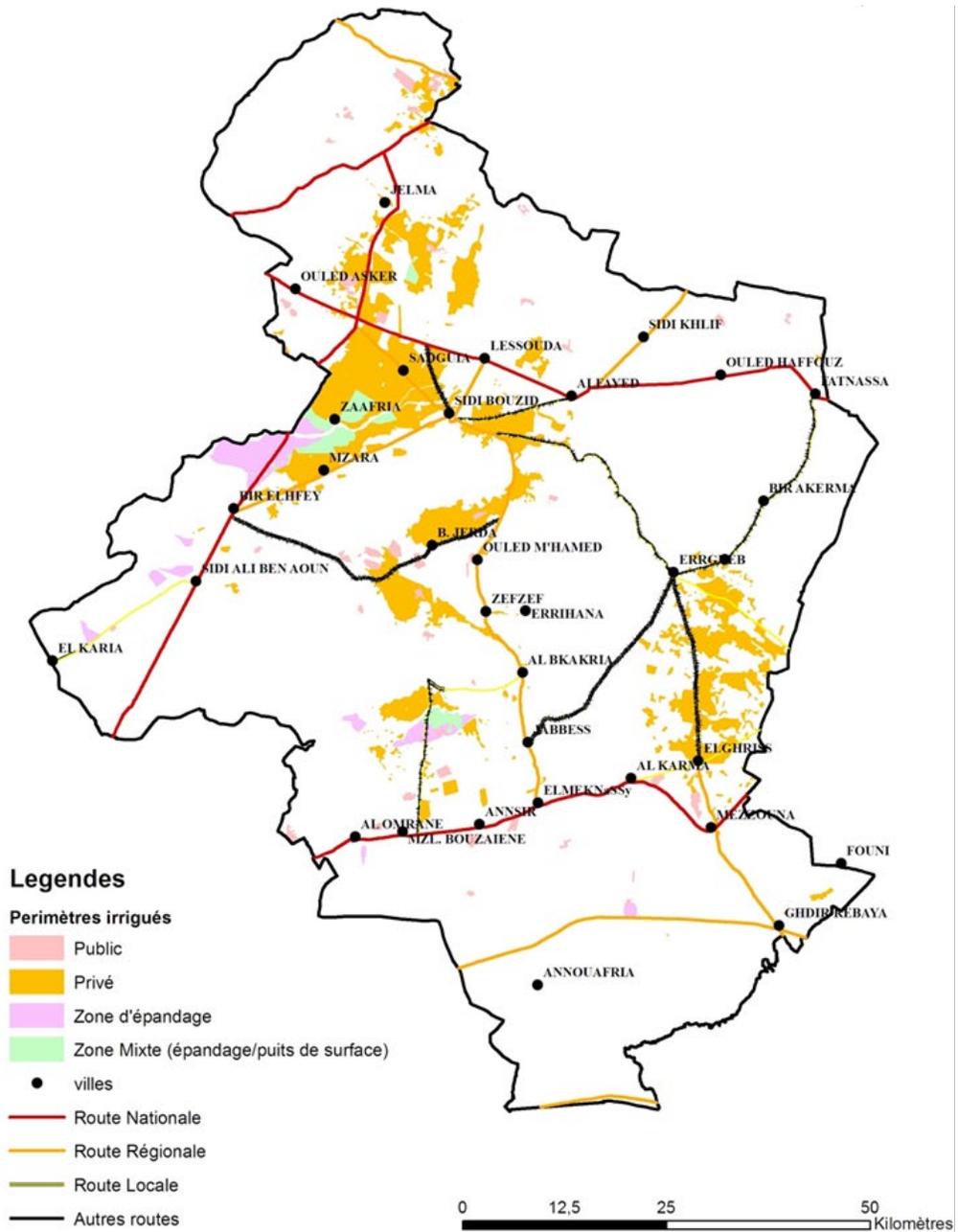
Land

In aggregate terms, land is less of a constraint compared to water. Even though it is a small governorate, Sidi Bouzid contains a wide variety of land types, including forest. The main issue is with the structure of land ownership and distribution. Of the governorate's farms, 64 percent are very small (less than 10 hectares) or micro-farms (less than five hectares). Such plots are hardly sustainable unless irrigated. About 10 percent of these small holdings—an estimated 2,000 holdings—are irrigated and may be viable. Out of the

Type of Resource	Resource Access Points	Amount Exploited (million cubic meters per year)	Potential Amount (million cubic meters per year)	Rate in Use (%)
Groundwater	10,781 Surface Wells	81.90	62.00	132
Deep Aquifer	750 Deep Wells	66.76	89.00	72
Rainwater	34 Small Artificial Lakes and Dams	60.00	131.00	45
Total		208.66	282.00	73

Source: National Institute of Statistics - Tunisia (INS)

Figure 4: Distribution of Irrigated Land and Major Aquifers in Sidi Bouzid



Source: Regional Agricultural Development Commissioner (CRDA) Sidi Bouzid, unpublished data

37,000 farmers active in Sidi Bouzid in 2005, only around 10,000 have enough land to continue to farm sustainably, while the remaining 27,000 cannot rely on agriculture for their living and are likely to eventually leave (unless alternative activities are developed nearby). The majority of the farming community is too poor to survive on their own land and own too little to leave to their children. This suggests that improving the productivity of these small and micro-farms,

although crucial, will not be sufficient to meet the needs and expectations of the people in Sidi Bouzid. While there is also some scope for economic diversification in Sidi Bouzid, it looks rather limited in the coming decade given its natural and human endowments. Therefore, in the long run massive rural-to-urban and out-of-the-region migration is expected regardless of policy choices.

Table 14: Distribution of Farm Land in Sidi Bouzid, 1994-2004											
Size (hectares)	0-1	1-2	2-3	3-4	4-5	5-10	10-20	20-50	50-100	≥100	Total
1994											
Farms (in thousands)	2	2.4	3	2.4	2.8	9	8.9	4.6	0.8	0.3	36
Farms this Size (%)	5.6	6.7	8.3	6.7	7.8	25	24.7	12.8	2.2	0.8	100
Farms this Size or Smaller (%)	5.6	12.2	20.6	27.2	35	60	84.7	97.5	99.7	100	
2004											
Farms (in thousands)	2.8	2.5	4.8	2.2	2.7	8.7	7.2	4.9	0.8	0.26	37.1
Farms this Size (%)	7.6	6.7	12.9	5.9	7.2	23.6	19.5	13.3	2.3	0.7	100
Farms this Size or Smaller (%)	7.6	14.3	27.2	33.1	40.3	63.9	83.5	96.8	99.3	100	

Source: Tunisian Ministry of Agriculture

Table 15: Distribution of Irrigated Land in Sidi Bouzid by Size of the Holdings, 2005											
Size	0-1	1-2	2-3	3-4	4-5	5-10	10-20	20-50	50-100	≥100	Total
Area (hectares)	175	575	1,316	1,124	1,545	9,412	8,562	8,719	2,825	5,623	39,876
Farms this Size (%)	0.4	1.4	3.3	2.8	3.9	23.6	21.5	21.9	7.1	14.1	100

Source: Tunisian Ministry of Agriculture

The privatization of the previously tribal land radically changed the incentive structure and greatly contributed to the economic growth of Sidi Bouzid, but the land reform measure is still incomplete. Often, farmers are still without formal land titles registering their individual ownership. Instead these farmers often share land with family members or are in the midst of lengthy ongoing disputes over land ownership. As a result, they have difficulty accessing bank financing that is typically based on mortgages. Government loan facilities previously provided credit to many farmers, but many now hold unpaid loans, which makes it even more difficult for them to obtain new bank loans.

Government Services

Farmers also have difficult access to new technologies because of the limited extension service offered to them by the existing government agencies and because the majority of the rural population active in agriculture has little schooling and formal training. Eighty five percent of them have had a primary education or none, almost like everywhere in the country. This is a little better than ten years ago; it used to be 90 percent. This may be a significant change and the beginning of the emergence of a new and more modern agriculture in the region. However, the peasants and farmers' level of education remains well below the average levels of the population. That is, agricultural activities are not attractive not only for youth but for the working population in general.

In any case, the real wealth of Sidi Bouzid is its people, brave and hardworking, and traditionally skilled. They have acquired practical skills in agricultural activities and have invested in training their youth in various fields.

Farmers' low levels of education also hinder their access to both financial resources and better technologies. This difficulty is aggravated by the low level of extension services available and of the quality of training offered to students in the region. The set of vocational training and higher education institutions established in Sidi Bouzid are not demand-driven and are quite disconnected from the region's current and future needs for skills. In addition, the gap between the required skills and the existing capacities is rather enormous. As stated above, graduates of this system try to look for jobs elsewhere but they often end up waiting at home for uncertain and very unlikely employment opportunities. This has driven them to exasperation.

There is also a set of well-established public service institutions in the region, but they don't seem to respond to the population's expectations. Indeed, the people of Sidi Bouzid have an ambivalent attitude toward these government institutions; they need them, but they also think that they are too bureaucratic, poorly equipped and inefficient. Citizens of the region widely share the feeling that their region was not equitably treated and has received too small a share of government attention and major projects—including infrastructure, health care and promotion of non-agricultural activities. Thus, many joined the rebellious youth.

The case of Sidi Bouzid shows nevertheless that the Tunisian government implemented important and substantial development programs. High growth in the agricultural sector was achieved, better infrastructure was built, and access to education and health services were improved for most of the population. However, little opportunities outside the agricultural sector were available for youth, especially the educated. The design of the rural development programs also

Table 16: Labor Force by Education Level in Sidi Bouzid, 2010 (%)					
	Higher	Secondary	Primary	None	Total
Midwest	12.0	28.6	37.9	21.5	100.0
Sidi Bouzid	11.8	27.1	34.9	26.2	100.0
Tunisia Total	18.2	37.5	34.0	10.1	100.0

Source: National Institute of Statistics - Tunisia (INS)

Table 17: Farmers by Education Level in Sidi Bouzid, 2005 (%)					
	Higher	Secondary	Primary	None	Total
Midwest	3.2	13.0	36.3	47.5	100.0
Sidi Bouzid	3.5	12.5	36.5	48.0	100.0
Tunisia Total	3.3	12.8	37.9	46.0	100.0

Source: Tunisian Ministry of Agriculture

Table 18: Farmers by Education Level in Tunisia, 1996					
	Illiterate or primary school	Secondary	Vocational	Higher	Total
Farmers (in thousands)	32.6	2.8	0.2	0.4	36
Farmers (%)	90.6	7.8	0.6	1.1	100.0

Source: Tunisian Ministry of Agriculture

had major weaknesses in terms of extension services, land entitlement, water resource sustainability and management and production marketing. As will be explained further in the third section, based on other more successful international experiences, alternative and better policies are possible. Regarding agriculture, there are potential improvements in income and productivity consistent with a more sustainable use of water and land resources. Yet even then agriculture will not be able to offer enough opportunities for all of Sidi Bouzid. Diversification will be crucial but it may

be slow to materialize given the limited resources in the area. Therefore, a bigger and accelerated rural exodus out of Sidi Bouzid is to be expected and should be planned for. After all, regional development does not exclude mobility out of certain regions to those regions with higher potential and growth. As far as Sidi Bouzid is concerned, this prediction is obviously conditional on the current prospects and knowledge about its possibilities and capacities which may vary in the future.

Le Kef

Figure 5: Map of Le Kef Governorate, Tunisia



Le Kef, in the northwest of the country and on the Algerian border, has more natural resources and offers a wider potential than Sidi Bouzid. This is well documented, for instance in Ministry of Agriculture, CRDA Kef (2008), Ministry of Equipment, Housing and Land Planning, DGAM (2008), Ministry of Industries, Energy and SMEs, National Mining Office (2010), Ministry of Planning and Regional Development ODNO (2006), Ministry of Planning and Regional Development ODNO (2007a) and Ministry of Planning and Regional Development ODNO (2007b). Yet so far it has not performed better and has attracted

even less investment and attention from the rest of the country and from the central government. The only major investment located in Le Kef was in a cement factory built in the 1970s. Even the agriculture sector, Le Kef's main economic activity, has hardly evolved since Tunisia's independence (based on many sources, including the Ministry of Agriculture, CRDA Kef (2008)). Sixty percent of Le Kef's land continues to be used to grow cereals and raise cattle in very sub-optimal conditions. Only 4 percent of the governorate's land—less than 15,000 hectares—is equipped with irrigation and intensive farming facilities.

The population of this governorate has been decreasing for decades and its economy has suffered in terms of sectoral development and income generation opportunities, because of the exhaustion of its iron ore mines. Le Kef, more than Sidi Bouzid, was also clearly impacted by the Tunisian government's bias against rural areas from 1960 to 1987. At the expense of farmers, low food prices were fixed by the government—mainly for grains and other staple food commodities—in order to protect urban consumers and control wages. By the end of the 1980s, this policy was partially adjusted and grain prices were increased, but subsidies on agricultural inputs were also lifted. Cereal production has since become relatively profitable but not profitable enough to start a new era of growth and prosperity in the grain-producing regions. Actually, the pricing bias is not the only impediment to growth and development in this part of the country. In particular, there are other social and institutional constraints related to land distribution and ownership, and to access to finance, knowledge and innovation. Therefore, important urgent reforms need to be undertaken in all these domains in order to make development more likely and more inclusive.

Although agriculture is the predominant sector and more than half of the population is rural, le Kef's economy is more diversified than Sidi Bouzid's. It includes

a larger share of manufacturing enterprises and a small but promising tourism sector. Close to 6 percent of employment is in manufacturing. Yet, in le Kef, still no major non-agricultural industry has emerged. The existing private enterprises are predominantly small and micro-enterprises with an average size of hardly more than one employee per enterprise.

Poverty is still more concentrated in the rural areas and a large part of the rural population is more or less landless and faces meager prospects. It is possible to improve their situation and to reduce their poverty through better policies but sooner or later most of them will leave the countryside and migrate to the urban areas in the same governorate or elsewhere looking for more and better opportunities.

In the following section, the focus will be on the rural people and their activities, mainly agriculture.

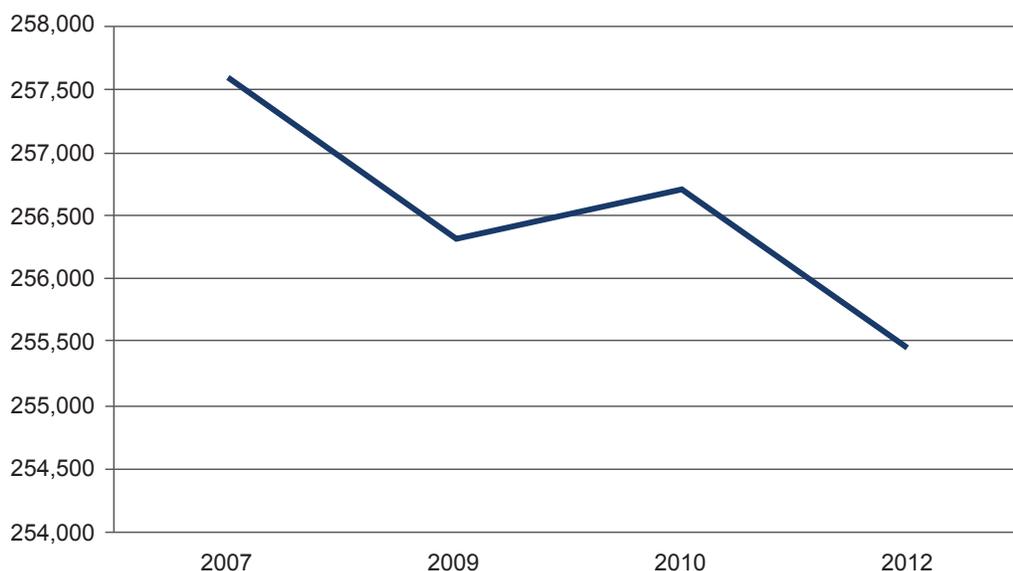
Population and Labor Force Capacities

Le Kef is about 500,000 hectares large. It has a population of around 255,000—2.5 percent of Tunisia's—but is steadily decreasing at half a percent annually due to migration to the eastern cities and low fertility. Migration has been more pronounced in the old mining cities.

	2007	2009	2010	2012
Population	257,573	256,285	256,710	255,454
Rate of growth (%)	-0.50	-0.50	0.17	-0.49

Source: National Institute of Statistics - Tunisia (INS)

Figure 6: Population Growth of Le Kef, 2007-2012



Source: National Institute of Statistics - Tunisia (INS)

Le Kef's rate of unskilled labor (relative to the size of its labor force) remains significantly higher than in most other regions and governorates. Yet, like in Sidi Bouzid and in the rest of the country, the people of le Kef have profited since independence from increasing access to education, health care and other basic services. Around 40 percent of its population (10 years or older) and of its labor force has at least a secondary education, which reflects great progress since the 1960s, though much less than in the eastern regions.

And like in Sidi Bouzid, vocational training and higher education facilities were built but are of rather low quality and not geared to the region's needs.

In spite of the migration, le Kef's labor force is growing and is characterized by a remarkably higher rate of participation among women than is average for

Tunisia (35 percent in le Kef compared to 26 percent at the national level). Indeed, there is a relative shortage of unskilled and seasonal labor in the governorate. Thus, and in a way paradoxically, the rate of unemployment is relatively low and even lower than in most of the eastern regions. This is due not only to the persistent exodus out of the governorate but also to its larger share of unskilled labor. In Tunisia, everywhere in the country, unemployment is lower for the unskilled. However, this lower unemployment rate does not mean that unemployment is not an issue in le Kef. Actually, it is as important as in the rest of the other western governorates because it is as high or higher for the educated youth and for women than in the rest of the country. There is again a structural and persistent mismatch between the jobs and the skills available. Meanwhile, the young unemployed people would rather wait or rebel than accept poorly-paid ag-

gricultural work. Women, with limited schooling, are the most willing to work as seasonal farm laborers or as family aids. Men, except those with higher education, often end up working in the informal sector.

Currently, the informal sector is pervasive and encompasses at least half of the region's economy. The most problematic part of this sector is the one linked to the illegal border trade with the neighboring Algeria. This trade operates within opaque and corrupt net-

works hard to combat and to reorganize. Although potentially organized trade with Algeria may offer much greater opportunities, the border zones remain among the poorest and most excluded from the development process of the country. Their connections with the illegal organizations are perhaps a form of revenge against the state that excluded them, and, overall, the people working in the informal sector feel excluded and have no access to certified training and capacity building.

Table 20: Labor Participation and Unemployment in Le Kef, 2007-2012				
Year	2007	2008	2010	2012
Labor Force (thousands of people)	94.8	95.0	108.1	104.4
Number of Employed (thousands of people)	79.0	83.3	94.8	92.3
Unemployment (thousands of people)	15.8	11.7	13.3	12.1
Unemployment Rate (%)	16.7	12.4	12.4	12.1

Source: National Institute of Statistics - Tunisia (INS)

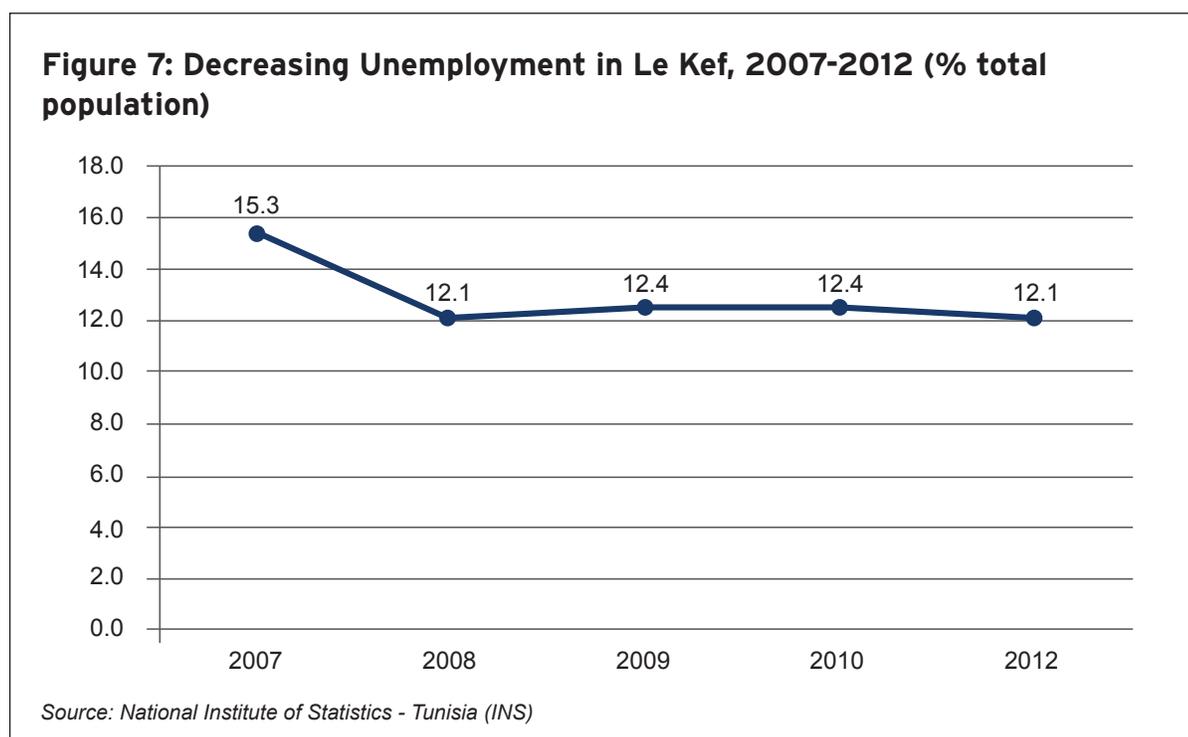


Table 21: Unemployment Rates of Youth and Women in Le Kef, 2010 (%)			
	People with Higher Education	People with Secondary Education	Youth (Ages 16-29)
Le Kef	28.0	15.2	30.0
Le Kef Women	38.2	21.1	
Tunisia	22.9	13.7	26.5

Source: National Institute of Statistics - Tunisia (INS)

Rural and Agricultural Development in Le Kef

Rural Population and Migration

Half of le Kef's population is rural, and about 40 percent of its employed labor force is in the agricultural sector. The rural population, then, is about 125,000 people, and the rural labor force is about 52,000 people; 40,000 of them work in the agricultural sector. Unlike Sidi Bouzid, where agriculture is relatively booming, the agriculture structure and productivity in le Kef have evolved very slowly and attracted relatively little investment. The persistence of high poverty in le Kef's rural areas is in part an outcome of this lack of investment and slow productivity growth. There is under-investment in all areas—including infrastructure, physical capital and human capital.

Agriculture in le Kef is also characterized by low and inadequate use of natural and human resources. The introduction of new and more appropriate crops and technologies has been slow. One of the main reasons for this situation is the unequal land distribution, as the majority of the le Kef's population is landless or own only very small or micro-farms while the larger farmers have little incentive to innovate and to switch to more efficient and sustainable production models.

Nevertheless, there is a great development potential in the agricultural sector. But it will not happen spontaneously. It requires a master government plan

(that can be designed according to a participative approach) integrating a set of key factors, including: infrastructure, training, land distribution and property rights, environment, marketing, entrepreneurship, financing investment and solving farmers' current debt problems. In the long run, the requirements of sustainable development⁸ and viable farming will and should lead to a drop in the rural population and the level of employment in the agricultural sector. Therefore, rural development and agricultural development ought to be linked with the development of the other sectors, primarily the industrial and the tourism sectors in the case of le Kef.

As mentioned above, about 40,000 people in le Kef work in agriculture. Based on Tunisia's 2006 survey conducted by the Ministry of Agriculture on the structure of the agricultural sector, only about half of this group is permanently employed in agricultural activities; the other half work as irregular seasonal and occasional workers or as family aids receiving no or little personal income. The 2006 survey finds that such seasonal agricultural work amounts in aggregate to about 173,000 days. This indicates that seasonal agriculture workers in le Kef work on average less than 10 days each year as a wage earner. They try to survive by cultivating their small or micro-farms and by relying on multiple sources of volatile incomes brought by all household members belonging to the labor force. Overall, underemployment among the rural popula-

tion is close to 50 percent. This means that 20,000 jobs need to be created in order to fully employ the 40,000 unemployed rural people. Could they be created within the rural areas? If not, there are 20,000 potential additional migrants out of the rural areas of le Kef.

Some of these 20,000 people may arguably be employed in non-agricultural rural activities but the possibilities for this type of employment are rather limited. As we will explain, alternative rural activities exist and there is also a real potential in alternative irrigated farming—mainly in fruits and vegetables and dairy production. However, in the long run farming opportunities are still not enough to accommodate the entirety of the existing rural population.

In the medium and long run, agriculture will put out of employment more workers than it can hire. Rural-to-urban migration will continue and may even accelerate as alternative activities in the urban areas continue to be developed, given that labor mobility is generally driven by the difference in expected return. The main challenge in the short and medium run is therefore in the timing of the migration process and in finding ways to combat and limit poverty among the poorly employed rural population.

Ideally, a radical agrarian reform allowing for the redistribution of land owned by the richest landlords to the poor farmers may provide not only more justice but also a more efficient use of resources. However, politically, this option is not considered. The small fraction of farmers—624 in 2005—who own large estates of 100 or more hectares represent 3 percent of the total number of le Kef's farmers, yet they control and often misallocate 35 percent of its land. The misallocation of land is not caused by the size of the holdings but by these farmers' behaviors and situa-

tions. The rich landlords in this region used to own an even larger share of the cultivated land and to lead a rather feudal system. Their property generated large rents and they did not have to do farm work or directly supervise workers. Today, a large number of the current landlords still have the same rentier and feudal attitude and would rather avoid any involvement in direct farming. Instead they prefer to either rely on tenants or rent their land for limited periods of time to farmers who then do not have the incentive to undertake investment and to take important risks. The outcome is that this land, which is often the best and with the highest potential, is locked in stagnant agrarian modes and is persistently allocated to the traditional low-return grain production with little diversification and productivity growth. Table 25 shows that in le Kef tenant farming and farming on rented land is more frequent than in the rest of the country, and much more than in Sidi Bouzid. The proportions of rented and tenant-run farms in le Kef—3.3 percent and 5.7 percent, respectively—may seem small. In fact they are substantial because they correspond to the 3 percent of large farms and the 6.5 percent of medium-sized farms (50 to 100 hectares), which together form 55 percent of total cultivated land in le Kef (2005 data). The 3.3 and 5.7 percent almost coincide with the 3 percent and 6.5 percent of respectively large and medium-sized farms of Le Kef that cover a little more than 55 percent of the land (2005 data).

This uneven and inadequate land distribution is aggravated by the very complex issue of land ownership, certified registration, and segmentation resulting from heritage rules. All over Tunisia, this is a major issue which applies to all holding sizes and often blocks all access to financial resources and modernization projects. Therefore, while a radical agrarian reform comparable to the one undertaken in Japan and Korea is not considered by any influential political party's

agenda, the country urgently needs measures to ensure and clarify property rights, clarify entitlement to land and agricultural assets and create the incentive for more direct farming and effective involvement of

farmers in the management of their projects. This is important for investments, productivity and income growth of large holdings, and even more important for small and medium ones.

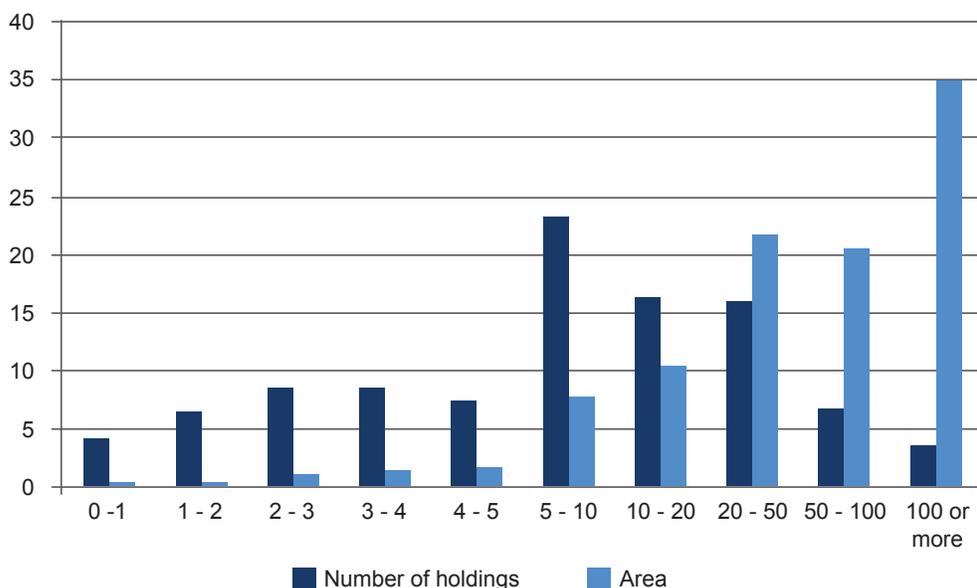
	Farming Mode										Total Number
	Direct farming		Rent		Tenant farming		Share cropping		Other modes		
	Number	%	Number	%	Number	%	Number	%	Number	%	
Le Kef	33,296	90.9	1,226	3.3	2,090	5.7	0	0	37	0.1	36,649
Sidi Bouzid	67,137	99.2	255	0.4	130	0.2	89	0.1	67	0.1	67,678
Total Tunisia	894,274	94.8	20,683	2.2	19,930	2.1	3,453	0.4	4,554	0.5	942,895

Source: Tunisian Ministry of Agriculture

Size of the holding (in ha)	Number	Percentage	Area	Percentage
0-1	779	4.3	168	0.04
1-2	1,199	6.6	1,742	0.4
2-3	1,547	8.5	2,754	1.0
3-4	1,540	8.5	5,382	1.4
4-5	1,350	7.4	6,048	1.6
5-10	4,221	23.3	30,309	7.8
10-20	2,903	16.1	40,418	10.5
20-50	2,776	15.9	84,634	21.8
50-100	1,170	6.5	78,886	20.4
100 or more	624	3.5	136,002	35.1
Total governorate	18,110	100.0	387,356	100

Source: Tunisian Ministry of Agriculture

Figure 8: Distribution of Holdings by Size, 2012 (%)



Source: Tunisian Ministry of Agriculture

The Debt Burden

Farmers in le Kef are also burdened by the heaviest total farm debt in the country, more than 8 percent of the total national agricultural debt—while less than 4 percent of the total number of Tunisian farmers are in le Kef.⁹ This is another hindering factor for investments and access to finance for farmers. The accumulation of debt has been occurring for decades, and the government has allowed it to persist instead of using the available legal measures to stop it.

Le Kef's Natural and Cultural Resources

The natural resources held in Le Kef's rural areas are actually important, diversified and under or sub-optimally exploited. Le Kef is home to relatively important water and land resources and proven reserves of phosphates and various raw materials needed for

the production of construction materials. There is also a rich cultural heritage and a large number of historical and archeological sites. Agriculture, tourism, manufacturing and mining are examples of activities that compete for the use of water and land resources. However, most of the non-agricultural activities that could potentially materialize would be expected to be established in urban areas. The rural population would then have to move to urban areas.

Le Kef is partly sub-arid in its southern part (where it receives around 300 millimeters of rainfall per year) and sub-humid in its northern part (where it receives 500 millimeters or more). Its winters are cold and sometimes freezing, with regular but modest snowfall, and its summers are moderately hot. However, like in the rest of the country, rainfall is very volatile and

Table 24: Agricultural Debt in Le Kef, 2007 ¹⁰ (thousands of Tunisian dinars)					
	Outstanding debt	Unpaid debt	Contractual interests	Penalty interests	Total debt
Le Kef	16,055	25,643	9,602	15,641	66,941
Total Tunisia	279,533	269,158	100,991	162,199	811,881

Source: Regional Agricultural Development Commissioner (CRDA) Le Kef

makes agricultural yields very random; this volatile weather may have a negative impact on the underground water reserves.¹¹

There is a variety of farm types and quality but the land is often threatened by water and wind erosion. Without protection and precautions this threat may become very serious.

In spite of its relatively high capacities and the availability of important water resources in many parts of this governorate, irrigated farming has been only a recent development in le Kef; 80 percent of the existing 15,000 hectares of irrigable land have been developed since 1990.

Out of the 360,000 hectares of cultivated land, 215,000 hectares are allocated to cereal and cattle production, which is traditionally dependent on rainfall and increasingly less labor intensive (more and more mechanized). There are also about 120,000 hectares of grazing land and forest that require even less labor. Most of the landowners and farmers are men (18,000) with little formal education (80 percent are illiterate or had a primary education) and are unlikely to initiate by themselves and without any government intervention any major transformations in terms of farming modes and techniques and alternative non-agricultural activities.

The total estimated water available in le Kef is 346.8 million cubic millimeters (Mm³) per year, 35 percent of which is rather underused groundwater and stream water. Given these resources and the current know-how, more than 40,000¹² additional hectares may be irrigated. They may be used for fairly intensive fruit and vegetable production and other labor-intensive activities; this is a lot compared to what has been achieved in terms of intensive irrigated farming. However, under the most optimistic assumption and assuming a full use of the agricultural potential, agriculture would allow for the creation of large numbers of new jobs but less than the 20,000 jobs needed for the full employment of the rural population. Detailed employment figures would depend on the type of crop and farming techniques which are hard to predict at this stage.

Development Institutions and the ODESYPARO Experience

Generally speaking, the Tunisian institutional setup is excessively centralized and the regional development institutions are managed in a top-down model. The inefficiency of this system is particularly obvious in the area of management of irrigation water, training and extension services, and marketing of agricultural products.

	Potential			Mobilization			Gap		
	1990	2000	2005	1990	2000	2005	1990	2000	2005
Rainwater	275	275	275	84.47	120.12	131.21	190.53	154.88	143.79
Deep aquifers	28.64	42.9	46.8	8.71	12.66	12.76	19.93	30.24	34.04
Groundwater	25.1	25.1	25.09	27.8	25.95	21.98	-2.7	-0.85	3.11
Total	328.74	343	346.89	120.98	158.73	165.95	207.76	184.27	180.94

Source: Regional Agricultural Development Commissioner (CRDA) Le Kef

Degree of Erosion	Area Eroded (hectares)	Area Eroded (%)
Very limited	195,600	38
Average	194,400	38
Strong	118,100	23
Total	508,100	100

Source: Regional Agricultural Development Commissioner (CRDA) Le Kef

Over the past decade, the government tried to deal with the key obstacles to the development of the agricultural sector and the improvement of the well-being of the rural population. Special administrative agencies, for example,¹³ have been created to deal with some of their specific needs and even to experiment with a less-centralized governance scheme. The focus of this section is on the ODESYPANO experience.

ODESYPANO is a government agency in charge of mountain and pastoral areas in the northwest of Tunisia and is particularly relevant as a rural development institution. About 25 percent of Le Kef's land is mountain forest and grazing land, where poverty is pervasive despite the various possibilities for development there. Mountain areas also suffer from poor infrastructure and low educational attainment among the majority of their population, and remain isolated because of the low-quality and low-density of the road and utilities networks and the high cost of infrastruc-

ture building in these hilly areas. ODESYPANO was created in 1981 to supervise and implement development projects for selected forest and isolated hilly areas in Tunisia's northwest, including in the governorate of le Kef. The projects target a population of 260,000 people, 95 percent of whom are rural and poor. ODESYPANO's mission is to improve the well-being of the targeted population and to serve as an inter-sectoral agency federating all the development partners involved in the region. Its activities are concentrated on land protection and on the promotion of new sustainable and income-generating activities, including livestock amelioration and diversification of agricultural production. It is supposed to adopt a participative and integrated approach.

Over the three past decades, ODESYPANO has indeed achieved a great deal. As of 2006, it has protected 176,408 hectares of land and built 2,053 kilometers of country roads, 30 lakes, more than 1,000 reservoirs,

milk-collection facilities, schools, and basic health centers. ODESYPARNO has also created better access to clean water and electricity and contributed to income growth. Income in the ODESYPARNO region has, on average, increased at an annual rate of 5 percent, partly owing to the introduction of new techniques and crops and to better access to markets and inputs. Five percent growth is actually the same average growth over the country and is not totally the outcome of ODESYPARNO's effort. ODESYPARNO was not fully empowered, as it should be according to its missions, yet it proved that it can act as a developer and an effective organizer and coordinator close to the people. The village offices and committees it established are quite effective instruments.

However, because ODESYPARNO's financial resources and real power were limited, its achievements although substantial were well below the needs of the population. Total investments over 25 years from 1981 to 2005 amounted to 224 million Tunisian dinars (around \$150 million coming mainly from foreign aid), for 260,000 people. That is the equivalent of about one 1000 dinars (\$650) per person for 25 years, or \$26 per person per year. This was enough to partially alleviate poverty for some of the targeted population but too little to significantly change their well-being.

ODESYPARNO was not in practice empowered to deal with all the key barriers to rural development, including access to financial resources for the popula-

tion, land and assets registration and entitlement and lack of effective training and illiteracy. Based on ODESYPARNO's data and on our own field investigation, it is clear that nothing or little was done to provide the poor peasants with more land, more cattle, and better training. Aside from some negligible micro-credits, they provided no access to bank financing. For instance, for a large number of peasants, their income and life could be radically improved if each of them were provided with a few dozen sheep (about 50 sheep)—enough to generate a decent and regular income. This would be feasible if ODESYPARNO could guarantee the necessary loans, but ODESYPARNO does not have the financial resources or power to do this. The development of some major new activities could have made a significant difference for this region. For instance, the targeted region has a real potential for tourism but lacks the infrastructure and capital for starting it. In Taiwan, the government promoted the creation of a large number of enterprises in rural areas and a lot of off-farm good jobs.

ODESYPARNO's experience shows that a partial approach may be beneficial but not sufficient, and that there is a need for a holistic approach that integrates all the key factors and dimensions of development (training, institution-building, capital accumulation, price and marketing policies) that are out of its control. The successful experience of several other countries, especially Asian countries, was more holistic.

LESSONS FROM INTERNATIONAL EXPERIENCES

Alternative approaches and better policies in the area of regional and rural development may be drawn from international experience—both failures and successes. In particular, never before in human history have as many people been saved from poverty and hunger as recently achieved in China, India and other Asian countries such as Vietnam, where the largest rural communities continue to live (Ravallion and Wale 2008).

The reforms undertaken in these countries, as described in Jean-Philippe Peemans's (2011) study, confirm the importance and efficiency of free and private enterprise, including in agriculture, and show how crucial incentive compatibility and complementarities between private interests and collective (regional or national) targets are. Without incentive compatibility, objectives would not be reached even if they were technically feasible. In the case of Tunisia, this is important because there are many inconsistencies between certain government policies—such as price policies—and other objectives regarding agriculture growth. Reforms should also fit in a comprehensive economic reform program and complement other major policies: industrial policy, labor market policy, international trade, monetary policy and the exchange regime. More specifically, for the rural population and for agricultural growth, government should devote sufficient effort to main infrastructural projects such as irrigation and roads and ensure reasonable input prices. It should also provide an efficient and equitable marketing platform for agricultural commodities. These measures would have a positive impact on production and create the incentive for farmers and peasants to adopt more efficient technologies and to respond to the increasing and changing demand for food.

In this section, we focus on the Korean and Taiwanese experiences since they have quite successfully integrated most of these conditions and learned from the wrong policies they adopted in the 1960s (that are similar to Tunisia's current policies).

Korea started in the 1960s with a biased price policy against the farming and rural community. The purpose was to keep food prices low (primarily grain prices), but this created a disincentive for higher productivity and growth. Peasants remained very poor and started migrating in large numbers and too quickly to the cities, as reported in FAO (2006), Looney (2012), Peemans (2011), Park (2009) and others. In the early 1970s, Korea decided to correct this disequilibrium and to switch to a radically different policy allowing for a positive bias in favor of the rural population. It launched the "Saemaul Undong" experience (also known, according to Park (2009), as the New Village Movement or the New Community Movement). This policy was consistent with Korea's export promotion strategy adopted at the same time and with the continuous improvement of its export sector competitiveness, but it was not consistent with Korea's commitment toward the World Trade Organization (WTO) and with its later obligations as a member of the Organization for Economic Cooperation and Development (OECD). Indeed, ten years later, Korea had to re-adjust its rural development policy in order to comply with its new status. At its current stage of development, Korea can afford to be less concerned with its rural community, which is now much smaller and can rely more on capital and knowledge-intensive technologies rather than on subsidized ordinary inputs for its production. Nevertheless, the support given to the agricultural sector and the rural community during the 1970s was an important pillar of Korea's overall development strategy. The Saemaul Undong Experience was a remarkable Korean experi-

ence. Many features of the Saemaul Undong are specific to 1970s Korea and will not be mentioned here, however some universal lessons may be learned from it. The main lesson is that it is possible to significantly improve the livelihood of the rural population but not without the government. The government role as catalyst and coordinator and in designing and initiating rural advancement programs is essential.

The effectiveness of such state intervention requires that the rural population accepts the state as a developmental state and its agents as a potential source of assistance rather than as feared exploiters. The Korean government was able to mobilize the population and to change their attitude toward the government. This confirms that the political commitment of the government was a key success factor, but the program would have failed regardless of this commitment and the political commitment would have been meaningless if the government policies were not credible or if they were not compatible with the peasants' interests.

Indeed, one of the main objectives of this policy was to raise the level of rural well-being. The government gradually provided all peasants in all villages with better housing, subsidized agricultural inputs, paved roads, clean water, electricity, extension services and high-yield seeds and assured for them high output prices. The green revolution in grain production was an important component of the government program and the peasants adhered to it because it was profitable for them to do so.

Price support for farmers, especially for grain production, concomitantly with subsidized food for urban consumers, was maintained during the 1970s as long as the fiscal cost of this policy was acceptable and it

did not contradict other major international interests of the country.

Effective local organization and effective institutions are also critical to the success of the rural development programs. Three levels of administration were created in Korea. At the lowest level, for each village an elected village committee, headed by an appointed leader, played an important role but under strong central supervision. The central level was placed under the ministry of home affairs and had the power to deal with all relevant ministries, which allowed it to avoid dependence on a large number of separate agencies and ministries. Taiwan's development experience paid even more attention to this key institutional component.

In both Korea and Taiwan, parastatal organizations were part of the system and were in charge of various marketing missions (collecting and purchasing rice, selling inputs to farmers and providing extension services and credits to farmers)

Radical land reform was also a basic factor for rural development in both countries. This does not mean that it is a universal necessary condition. It is true that the relatively egalitarian structure of land was for a certain period a favorable factor, but what is more essential is to legally secure entitlements to assets, especially land and water as well as access to markets.¹⁴

The Saemaul Undong experience also confirms the benefit of a holistic approach integrating training, institution-building, capital accumulation, price and marketing policies and villagers' needs and challenges. It also comprehensively dealt with non-agricultural employment.

Japan and Taiwan agricultural policies showed the importance of extension services and were more based on market incentives. The Taiwanese experience also differed from the Korean because Taiwan has a higher food production potential, enough to meet its domestic demand for food and to contribute to exports and generate capital and labor for industrialization.

Nevertheless, in spite of the rapid rural development and improvement in the livelihood of the rural population Saemaul Undong was ended at the end of the 1970s. The Korean government stopped insisting on the use of the high-yield rice variety and ended the price support policy because it had become too costly and too difficult to manage. By then, Korea's policies and priorities were also changed.

Both in Korea and Taiwan, this rapid and highly inclusive rural development process was not enough to stop the rural exodus to the cities. More than half of the rural Korean population (7.7 out of 14.4 million people) migrated to urban areas by 1980, and the process continued. By 2010, Korea's rural population was reduced to less than 7 percent and mechanization became critical for the survival of family farming.

Massive migration out the urban areas happened in Taiwan as well but it was slower because Taiwan could provide off-farm employment for the rural people. Like everywhere in all parts of the world, the trend is towards a much smaller rural population.

ALTERNATIVE POLICIES AND RECOMMENDATIONS

Tunisia has adopted many features of the rural development policies of Korea and Taiwan, including price subsidies and support, and less systematically provision of infrastructure and training. What it has not achieved is a comprehensive, inclusive and consistent strategy. Important efforts and programs were devoted to certain components of rural development while other components were either neglected or managed ineffectively. For instance, public water facilities were provided in many places but not the right price incentive and the access to markets. The appropriate land distribution and land property laws were often missing or poorly enforced in Tunisia.

Le Kef, Sidi Bouzid and other regions can achieve ambitious rural development targets and very significantly improve the situation of their rural population if a more coherent strategy and a holistic approach were adopted and implemented—taking into account in a realistic manner all the major obstacles and all the key development factors (natural resources, skills and human resources, population issues, land ownership and distribution, financial needs, incentive compatible and efficient institutions).

The international experiences also show that agriculture development should not be designed separately from other development programs. A strategy based on micro-farming alone is in general not sustainable, or at least will not be in the long term. Small and micro-projects are beneficial for combating poverty and reducing unemployment, but they are not enough for reducing regional disparities and ensuring sustainable growth based on inclusive institutions. There is a need for well-coordinated comprehensive programs combining public and private interventions and integrating public infrastructure, training and capacity development, marketing, financial resources and institutional reforms. Coordination between all these dimensions is primarily the responsibility of government, and government intervention is indispensable.

Finally, exodus to the urban areas is inevitable—even when and where rapid rural development is possible. There is no reason why this exodus should be fully stopped or constrained within the same region, and there is no logic for ensuring that all regions are equally urbanized and industrialized. Inevitably, growth will always be faster in some regions and population will move to the faster growing regions. This is a natural and expected process.

REFERENCES

- Boughzala, Mongi (2010), "Employment Dynamics in the Gafsa and Le Kef Governorates : Opportunities and Challenges to Job Creation", a Study Directed by M. Boughzala, in collaboration with Salah Ahmed and Mohamed Elloumi , UNDP, MDG Achievement Fund, in French.
- CNEA-MEDD-GTZ (2008), "Strategy Study on Sustainable Development and Agriculture in the Governorates of Gabes, Sidi Bouzid, Nabeul, the Kef and Bizerte," Ministry of Agriculture, Tunisia, in French.
- FAO (2006), "Adjustment and Reforms of the Main Asian Economies and their Impact on Food Security and Poverty in the Rest of the Region," 28th Regional FAO Conference for Asia and the Pacific, Jakarta, Indonesia, 15-19 May, 2006.
- Henia, Abdelhamid (2014), "The Tunisian Midwest in the 18th and 19th century", in Arabic, a paper presented at the seminar organized by the University of Tunis, Faculty of Social Sciences in collaboration with UGTT, 10 January 2014, Tunis, Tunisia.
- International Fund for Agricultural Development (2001), *Rural Poverty Report 2001*.
- Lipset, Seymour (1959), "Some Political Requisites of Democracy: Economic Development and Political Legitimacy," *The American Political Science Review*, 53(1), 69-105.
- Looney, Kristin (2012), "The Rural Developmental State: Modernization Campaigns and Peasant Politics in China, *Taiwan and South Korea*," Harvard University, Graduate School of Arts and Science.
- Mougou, Abdelaziz (2013), "Regional Plan for the Environment and Sustainable Development for Sidi Bouzid Governorate: the Agricultural Sector," GIZ, Tunis, non-published.
- Norel, Philippe (2005), "Was Economic Development Born in Asia?" Research Center on Economic and Financial Integration, Poitiers University, Poitiers, in French.
- Park, Sooyoung (2009), "Analysis of Saemaul Undong: A Korean Rural Development Program in the 1970s," *Asia-Pacific Development Journal*, 16(2).
- Peemans, Jean-Philippe (2011), "Discourse and Facts on Rural Development in the World and South Asia, (1945-2010), Studies and Documents of the Research Group on East and Southeast Asia," 1, in French.
- Ravallion, Martin and Dominique van de Walle (2008), "Agrarian Reforms and Poverty in East Asia," *Finance and Development*, International Monetary Fund.

ENDNOTES

1. In 1956, Tunisia gained independence from French colonialism.
2. See Henia (2014)
3. See Lipset (1959)
4. One Tunisian Dinar = \$0.60 (December 2013 rate)
5. Sidi Bouzid's historical name is Gammouda.
6. See Mougou (2013) for more on this process.
7. Sfax is the second major industrial city in Tunisia. It is located on the east coast.
8. Obviously, sustainable development has to be profitable for the enterprise; otherwise it would not be pursued. A loss generating activity would not be undertaken and would not last.
9. A large part of this outstanding debt is actually long overdue, and is financially worthless in terms of bank assets.
10. No more recent data is available but it is clear that the situation has not improved in Le Kef and in the rest of the country.
11. Further details about the climate and other natural factors are provided in Boughzala (2010) and CNEA-MEDD-GTZ (2008).
12. This number, 40,000, is obtained under the assumption that 3 Mm³ of water are needed to irrigate 1,000 hectares and that 35 percent of the water resources are not used.
13. ODESYANO: Northwest Sylvo Pastoral Development Office
14. See the International Fund for Agricultural Development (2001)



The views expressed in this working paper do not necessarily reflect the official position of Brookings, its board or the advisory council members.

© 2014 The Brookings Institution

ISSN: 1939-9383

BROOKINGS

1775 Massachusetts Avenue, NW
Washington, DC 20036
202-797-6000
www.brookings.edu/global

