



Note to Task Teams: The following sections are system generated and can only be edited online in the Portal.

Project Information Document/ Integrated Safeguards Data Sheet (PID/ISDS)

Concept Stage | Date Prepared/Updated: 25-Apr-2017 | Report No: PIDISDSC20393



BASIC INFORMATION

A. Basic Project Data

Country Tunisia	Project ID P160245	Parent Project ID (if any)	Project Name Tunisia Irrigated Agriculture Intensification Project (P160245)
Region MIDDLE EAST AND NORTH AFRICA	Estimated Appraisal Date Sep 05, 2017	Estimated Board Date Nov 28, 2017	Practice Area (Lead) Water
Financing Instrument Investment Project Financing	Borrower(s) Ministry of Development, Investments and International Cooperation	Implementing Agency Ministry of Agriculture and Water Resources (MARH)	

Proposed Development Objective(s)

The Project Development Objective (PDO) is to (i) improve irrigation and drainage services, (ii) improve institutional capacity for irrigation schemes management and (iii) strengthen market linkages in selected areas.

Financing (in USD Million)

Financing Source	Amount
International Bank for Reconstruction and Development	120.00
Total Project Cost	120.00

Environmental Assessment Category B-Partial Assessment	Concept Review Decision Track II-The review did authorize the preparation to continue
---	--

Note to Task Teams: End of system generated content, document is editable from here.

Other Decision (as needed)



B. Introduction and Context

Country Context

1. Tunisia is a middle-income country of 10.9 million people with an average gross domestic product (GDP) per capita of US\$4,400 in 2014.¹ In the last decade, economic growth averaged 5 %, positioning Tunisia among the fastest growing countries in the MENA region. The country has also made significant progress in the fight against poverty, with the poverty incidence halving between 2000 and 2014, from over 32 % to 15.5 %, and extreme poverty also halving during the same period.² Tunisia has now entered peacefully in its Second Republic political era after adopting a new constitution and holding its first democratic elections for a new President and a new People's Assembly elected for the 2015-2019 period.
2. However, the socioeconomic challenges remain substantial. In recent years, social and political turmoil led to an economic slowdown and GDP growth is estimated at 1.8 % in 2016³ after reaching a mere 0.8 % in 2015. Unemployment is high at 15.4 % in aggregate and substantially higher for women (22.6 %), university graduates (31.2 %) and the youth (31.8 %). Inflation was contained at less than 5 % in 2015. The fiscal deficit was contained below 5 % of GDP in 2015, thanks to the sharp drop in international oil prices and de facto lower energy subsidies. Public expenditure remained dominated by recurrent spending, including a wage bill, which increased to 13.4 % of GDP (from 12.8 in 2014) to reach almost 50 % of total spending. Capital expenditure continued to be squeezed, reflecting slow investment execution.
3. Structural widespread social and economic disparities, youth unemployment and rural poverty are yet to be tackled. Tunisia's development has been exacerbated by the duality of the economy that favors an offshore sector, in which low-value added industries employ low-skilled workers. Private-sector growth and the creation of high-value added jobs have been hampered by complicated regulatory procedures, inappropriate supervision, rent-seeking and anticompetitive behavior, particularly in the banking sector. These structural rigidities—which will take time to address—have to be balanced with the population's expectations of quick dividends from the Tunisian revolution.
4. The agricultural sector plays an important role for jobs, livelihoods and the overall economy in Tunisia. Agriculture accounts for about 10% of GDP and with the food-processing industry about 10-12% of exports. The value of Tunisia's food production has increased by more than 50% over the last 15 years and now stands at over US\$4 billion. Tunisia's agricultural sector has a considerable potential to help boost shared prosperity. An IFC report shows that in Tunisia investment in agriculture creates the most employment and investment in food processing creates the largest value-added compared to the same amount of investment in other sectors.⁴
5. Agriculture is the primary source of income and employment in the rural areas. About 33% of the 10.9 million Tunisians live in rural area and roughly 50% depend on agriculture for their livelihoods and employment, representing almost 20% of the labor force. In some lagging region governorates close to 80% of the rural population and almost all women depend on agriculture for income and employment⁵. A

¹ <http://data.worldbank.org/country/tunisia>

² Country Partnership Framework, 2015.

³ Country Partnership Framework for the Republic of Tunisia for the period FY 2016-2020

⁴ Kapstein, Kim, and Eggeling (2012).

⁵ World Bank. 2014. "The Unfinished Revolution: Bringing Opportunity, Good Jobs and Greater Wealth to All Tunisians." Development Policy Review, Washington, DC.



large share of workers in agriculture live near or below the poverty line.⁶ In 2012, a third of the poor household heads worked in agriculture compared to 16% of the non-poor.⁷ Hence, the agricultural sector still plays a key role in the Tunisian economy and especially so for the bottom 40%. Employment in agriculture has more potential to provide a path out of poverty as the number of workers in agriculture is still significant and increasing (0.2% per year in the period 2009-2014).

Sectoral and Institutional Context

6. The productivity in the agricultural sector remains low relative to its potential. The most competitive products, including the high-value vegetable and fruit crops (including olive oil), durum wheat and fisheries, which represent 58 % of production over the last 20 years, contributed to the growth of the sector only up to about 46 %, while non-competitive products (soft wheat, beef, and milk), which concern 39 % of production, contributed up to about 52 %. In fact much of the growth in agriculture has been driven by agriculture policies favoring food security including (i) input subsidies for fuel, milk collection and irrigation, (ii) market price support notably for cereals and milk, (iii) agricultural trade policies (custom duties and import quotas) and (iv) direct State intervention in farmers and private traders' activities including retail price control. It is worth mentioning that the market distortions brought about by the agricultural policy mainly concern crops that underpin Tunisia's food security policy—soft wheat, beef, and milk. As far as high value crops are concerned—which will be the main focus of the project— their development takes place in an environment mostly free of market distortions.
7. Agricultural policy orientations decided in 2015⁸ stress the need for a balanced regional development, which must benefit all regions; the sustainable development of natural resources; the protection of environment and hygiene; the reduction of natural and technological risk and the reduction in fossil energy use. The new constitution also provides more autonomy to regions, and the decentralization laws favors more decision making at the local level. Recent government initiatives include a new status for cooperatives, a debate on the policy regarding public land, a new investment code, and a more integrated water management. The possibility of reducing risk for farmers, possibly through more accessible insurance programs is also discussed. The development of local processing of agricultural products and of adding value to export crops (e.g. olive oil, often exported in bulk) are also presented as important priorities for the Ministry of Agriculture. There are ambitious plans to develop and improve storage capacity, since maintenance of some of the storage facilities for cereals have been neglected and a large scale investment program is needed. Other opportunities exist with citrus and niche products (essential oils, almonds, apricots) provided that quality, processing, marketing and quality control improve. In most cases, private initiative needs to be freed so that new marketing chains make it possible to access niche markets (organic products, cosmetics, or highly nutritious food products).⁹

⁶ EIU 2015.

⁷ Cuesta, Jose. 2015. "Tunisia 2015 Poverty Assessment." World Bank (unpublished manuscript).

⁸ The Tunisian government has been organizing a large scale dialogue on the future of agricultural policies. This dialogue has been fruitful, and different proposals are being made, many of them echoing the need to implement solutions that had already been identified (see for example Ben Said, 2011).

⁹ Examples of higher nutritious food include for example spelt (*épeautre*), a traditional cereal, is back in Western Europe; In cold and dry areas in Morocco, producers are experimenting quinoa, another higher nutritious crop that is drought resilient and whose market expands very rapidly



8. But in spite of the successive plans that have made the development of value chains a priority, processing of agriculture products has remained much below expectations. There is little processing sector that provides outlets for farmers. Olive oil is still mostly exported in bulk. So are citrus. The recent crisis in milk prices, subsequent to a fall in demand caused by the drop in tourism and the closure of the Libyan border, has been worsened by the absence of a transformation industry of fluid milk. The lack of a food processing industry is particularly a problem in southern and western areas, where unemployment rates are high and where there is little outlet for local agricultural production (tomato paste, etc.). Regarding marketing of food products, supermarkets have emerged over the last decade in urban areas. This has led to rapid changes in the marketing of food products, since supermarkets now account for more than 10 % of food sales nationwide. As in many countries, this evolution drives standards up and benefits to the agricultural sector as a whole. However, it is also a factor of increasing duality of agriculture, since only more affluent farmers can mobilize capital and skills to match standards and meet marketing chains demand.
9. Agriculture development remains largely dependent on rain. With an average rainfall of about 220 mm across Tunisia and high inter- and intra-annual rainfall variability,¹⁰ agricultural water management is at the core of food security policies. Renewable water resources amount to 420 m³/year/inhabitant, which is below the threshold of absolute water scarcity. Agriculture uses 80 % of these resources. Climate change is predicted to increase temperatures, reduce precipitation, and increase variability. Increased temperatures (an estimated 1-2°C by 2030) will increase water consumption, while lower precipitation (an estimated 5-10 % drop) will reduce supply. Increased variability will make droughts and floods more frequent and severe, which will increase the need for inter-annual storage and inter-basin transfers. Farmers might increasingly rely on groundwater, which would intensify pressures on already-stressed aquifers.¹¹
10. The government of Tunisia through its Ministry of Agriculture has invested significantly in the mobilization, conservation and management of water resources. Major infrastructure investments have allowed Tunisia to capture most of its scarce water, mobilizing 92 % of the renewable resources, and to deliver it where it is most needed.¹² However, the Tunisian Government has been recognizing the need to evolve from a supply side response (increasing water mobilization) to a demand management approach (improving overall efficiency and favoring the most productive uses of water). The 2030 Government's water strategy includes the following main lines of action to improve water security in Tunisia: (i) further increase storage capacity to harvest surface water, including replacement of some existing dams; (ii) increase water transfer capacity and safety; (iii) renew old boreholes; (iv) restrict irrigation development in the north and halt it in the Center and South; and (v) develop alternative, non-conventional resources including treated wastewater reuse and desalination of brackish and sea waters. Measures to improve groundwater recharge are also considered. Overall, the volumes abstracted from groundwater resources should be reduced and replaced by non-conventional resources, while volumes mobilized from surface

globally. Organic farmers are eligible for specific support, covering in particular a large share of certification costs; and that Tunisian organic certification is recognized by EU regulations.

¹⁰ Average annual water resources available are estimated at 36 billion cubic meters, but this volume varies from 11 billion in dry years to 90 billion in wet years. This is a one to eight ratio.

¹¹ Out of the 273 aquifers identified in Tunisia, 71 are considered as overexploited, with water use exceeding the renewal capacity of the aquifers by close to 50 %. Almost all aquifers in the coastal area face salinization problems.

¹² Renewable resources are composed of 2,650 Mm³/year (56%) of surface water and 2,150 Mm³/year (44%) of groundwater. Hydraulic infrastructure includes 33 large dams with a total capacity of 2.27 Bm³, 253 small dams, 837 reservoirs, 5,512 boreholes and 130,000 wells. In addition the hydraulic infrastructure includes conveyance facilities to transfer the water from the wetter North to the coast where uses are concentrated and to the dryer South.



water would slightly increase and used for transfer to coastal regions. But there is a very limited scope for increased water allocation for irrigation usage.

11. Tunisia has achieved a high rate of irrigation development along modern standards. Investments in irrigation infrastructure have been by far the most important compared to other agricultural subsectors reaching 35% of all agricultural investments in the past decades and resulting in the development of 410,000 ha equipped for irrigation, which is 95% of the estimated potential. Two third of the irrigated area in Tunisia is equipped with sprinkler or drip technology used for on-farm irrigation.¹³ In addition, the country has a long-standing program of innovative practices such as artificial aquifer recharge and re-use of treated wastewater, even if on limited surfaces.¹⁴ The irrigated areas are concentrated in the North (48 %) followed by the Center (36 %) and the South (16 %). About 53 % of the equipped area is on public irrigation schemes while the remaining 47 % are private schemes.
12. Irrigated agriculture represents a keystone for the economic development of lagging regions: it ensures high levels of crop production that provide higher and more stable incomes to farmers and underpin the development of dynamic agro-industries that can offer job opportunities, especially for women and youth. But a pre-condition for farmers to switch to high value crops —and seize business opportunities, both for domestic and export markets— is a reliable irrigation service. Without the assurance that water will be available at the critical stages of crop growth, farmers will not be willing to take the risk of engaging into more profitable crop production if this entails a high probability of losing the whole production in the event of a technical failure in the irrigation system. There are, however, numerous market opportunities for irrigated agriculture in Tunisia, including fruit trees, industrial crops, vegetable crops, supplementary irrigation for cereals and fodder crops and so on. One noteworthy example is the production of the fig of Djebba. Today irrigated agriculture contributes about 45 % of the agricultural output and 32 % to the agricultural exports on only 8 % of the agricultural land of Tunisia.
13. Tunisia’s irrigated agricultural sub-sector remains below its potential output resulting in a low return on investments in irrigation and the need for recurrent subsidies for the operation and maintenance (O&M) of the public schemes. Some areas equipped with irrigation are not exploited (close to 20 %); cropping intensity is well below potential (90 % versus 130 %); part of the crops grown in the areas equipped for irrigation are not irrigated (like cereals, especially in the North of the country, and olive trees); and overall, average yields of irrigated crops have a significant margin of increase. As a result, only 35 % of the surface water resources mobilized for irrigation are effectively used. Meanwhile in some areas there is over-abstraction of groundwater¹⁵, creating a high sustainability risk at existing levels of irrigation development. In addition, soil degradation is a lingering problem—in particular with issues of hydromorphy due to insufficient drainage. Also, the agronomic consequences of the impoverishment of agricultural soil—resulting from the simplification of rotations, and the use of production methods relying primarily on chemical nutrients— have materialized. This leads to a strong reduction in the organic matter content of topsoil and its structural stability. A consequence is the lower capacity of soils to retain water as well as more erosion.

¹³ Such modern on farm irrigation equipment is subsidized between 40 and 60% depending on farm size.

¹⁴ Non-conventional water resources are estimated at 232 Mm³/year or 5% of resources mobilized.

¹⁵ In the center of the country the volumes pumped from groundwater represent 139 % of the annual recharge.



14. Irrigated agriculture has failed to reach its full potential because of a number of factors, starting with marketing issues in the absence of strong value chains (see section A), the weakening of research and extension services, the lack of producers organizations and the reduction in the availability of credit. The under-performance of the subsector has been further compounded by successive institutional reforms that failed to improve the quality and reliability of the irrigation service. The institutional model applied uniformly for all the public irrigation schemes went (through several steps) from a centralized public entity to a decentralized model where *Groupements de Développement Agricole* (GDA – Agricultural Development Groups) are put in charge of water distribution, while the *Centres Régionaux de Développement Agricole* (CRDAs - Regional Agricultural Development Offices of the Ministry of Agriculture) are in charge of the main systems' operations. The transfer of responsibility to the GDAs has been done without properly training and equipping them to handle this task and without giving them the required enforcement power. Moreover, the interface between the CRDAs and the GDAs is ill-defined (absence of delivery point equipped with flow meter), resulting in a lack of accountability to the final user. Finally the tariff structure and cost sharing arrangement between the CRDAs and GDAs are not related to the actual costs of operating and maintaining the system. As a result, most GDAs encounter significant managerial problems. Out of the 1,253 GDAs only 20 % are considered to be functional with a cost recovery rate above 60 % and a sustainable level of debt. Most of the GDAs are indebted to the CRDAs and to the electricity supplier. This is especially true in the Northwest where the CRDA have been stepping in to keep the large public irrigation schemes running at the taxpayer's cost.
15. The defective irrigation systems have compromised the reliability of the service and theft or vandalism of equipment has compounded the challenge. While there is no data systematically collected on service quality, there is ample anecdotal evidence of frequent irrigation system breakdown resulting in weeks of service interruption per irrigation season. Lack of service reliability is a powerful deterrent to agricultural intensification on irrigation schemes. Water distribution efficiency is also generally low, resulting in higher pumping cost per cubic of meter delivered of the end user.¹⁶ The first and foremost priority to uplift the subsector to its performance potential is to provide a reliable quality of service to the users at an affordable cost. This will entail rehabilitation and modernization works including appropriate flow metering systems, as well as institutional and organizational reforms aiming at ensuring adequate accountability from the service provider to the users (in delivering the service) and from the user to the service provider (in paying for the service). The institutional arrangements should be designed on a case by case basis to be well adapted to the specificities of each irrigation scheme instead of applying a one-size-fits-all model.
16. Irrigation service charges (water tariffs) have been recognized as a key economic instrument for water resources management for a long time. Kept very low in the 80s, they have been increased substantially in the 90s with a view to reach full O&M cost recovery. However they have been frozen for several years since 2002 and do not cover the growing cost of water services. Current tariffs cover on average 60 % of the recurrent O&M costs, and only 45 % of these costs after including the renewal charges. However, there is room for improvement of the cost recovery rate without significantly raising the unit cost of water, through improved fee collection rate and improved operational efficiency of the irrigation systems. In fact, a large share of the water charges are used for pumping water that is lost before being delivered to the end user, or left unaccounted for. In addition, the actual cost of abstracting and distributing water on private irrigation schemes can be used as a benchmark to set the tariff for water on public irrigation schemes.

¹⁶ For example from 2006 to 2014 only 16 to 37 % of the volume supplied annually from Siliana dam was accounted for and billed to the end user.



17. Within this context, the World Bank has helped the Tunisian Government since 2001 in the financing of a series of sector investment projects to implement the Water Sector Support Program. These projects, called PISEAU 1 and 2, were designed to support the 1999 Water Sector Strategy and the associated Water Sector Support Program (2001-2011), organized around three pillars: (i) integrated water management and conservation; (ii) economic efficiency of water use in agriculture; and (iii) institutional restructuring and capacity building in the water sector.¹⁷ While these projects had significant impact in terms of physical outputs,¹⁸ they failed to enable the kind of reforms that were necessary to sustain these results and reach the economic efficiency and institutional objectives laid out in the Government's strategy. PISEAU 2 outcome was rated Moderately Unsatisfactory due to its lack of results on the institutional side.
18. Following the PISEAU program, the World Bank supported the new Government of Tunisia in re-thinking its approach to irrigation development through targeted analytical work implemented by FAO and culminating in a national workshop held in May 2015. The proposed project directly results from this participatory exercise and envisages to approach the necessary institutional modernization in a pragmatic way by establishing new institutional models on selected schemes instead of pursuing a broad, all-encompassing reform agenda, and by accompanying the improvement of irrigation scheme performance with an appropriate level of soft investment in agricultural intensification, so as to reap the full benefits of the capital investment in irrigated infrastructure. The project will focus its intervention on the large scale public irrigation schemes in the Northwest of the country where leverage can be obtained from the public investment. However additional targeted investments will be done in coastal areas to support the water resources agenda of increased use of non-conventional waters (treated wastewater) and of soil and water management (drainage).
19. The proposed project will build on parallel World Bank engagement on value chain strengthening. To increase the efficiency and effectiveness of the support to job creation and economic growth in the targeted lagging regions, four World Bank projects¹⁹ will leverage a common value chain development Platform to be established within the EDP-3 (The Third Export Development Project – P132381) to implement activities relating to value chain development.

Relationship to CPF

20. The proposed Project is aligned with the new Country Partnership Framework (CPF) for the period FY 2016-2021, whose overarching goal is to support Tunisia's efforts to define and put in place a new economic model that provides opportunities for those left behind. The CPF consists of three pillars: (i) improve the environment for restoring economic growth and stability; (ii) improve services and opportunities in lagging regions; and (iii) increase social and economic inclusion and opportunities for youth. The proposed project contributes to all three pillars through: (i) improving the institutional framework for irrigated agriculture, which is a necessary condition for the development of agricultural value chains (CPF pillar one); (ii) contributing to the creation of economic opportunities in targeted lagging

¹⁷ The program was jointly financed by the World Bank, the African Development Bank (AfDB), the Agence Française de Développement (AFD), and the Kreditanstalt für Wiederaufbau (KfW).

¹⁸ For example PISEAU 1 provided improved irrigation on 29,000 ha (two thirds more than the 17,000 ha anticipated) and supplied drinking water to 170,000 people (compared to 100,000 anticipated).

¹⁹ The project leverages strong synergies with three other World Bank (WB) projects: the proposed *Productive Inclusion Opportunities for Young Women and Men Project* (P158138) and the *Integrated Landscapes Management in Tunisia's Lagging Regions* (P151030). The two projects focus on value chain development (including agribusiness) in the lagging regions, but with a particular focus on job creation. The third ongoing project is the *Tunisia Third Export Development Project* (EDP-3) (P132381), which provides financial and technical services to exporting firms.



regions through increased economic activity in the agricultural sector (CPF pillar 2); and (iii) contribute to economic inclusion of youth and marginalized groups by targeting agricultural value chain development that can create jobs and economic opportunities for these populations (CPF pillar 3).

21. The project will contribute to fostering inclusion and shared prosperity in Tunisia's lagging regions through the new economic activities made possible by a robust irrigation system. Therefore, it is in line with the MENA strategy whose goal is to promote peace and social stability. The proposed project supports the first pillar of MENA strategy by contributing to the renewal of the social contract in promoting a new, bottom-up development model in lagging regions, with more effective and responsive public services that focuses on the poor and vulnerable people and private sector development through value chains to create jobs and opportunities mainly for the youth in Tunisia's lagging regions. The project will therefore directly contribute to the World Bank's twin goals of ending poverty and boosting shared prosperity.

C. Proposed Development Objective(s)

Note to Task Teams: The PDO has been pre-populated from the datasheet for the first time for your convenience. Please keep it up to date whenever it is changed in the datasheet.

22. The Project Development Objective (PDO) is to (i) improve irrigation and drainage services, (ii) improve institutional capacity for irrigation schemes management and (iii) strengthen market linkages in selected areas.

Key Results (From PCN)

23. The project will directly benefit about 2,600 agricultural producers, who will get access to new or improved irrigation and drainage services and receive assistance for agricultural intensification and market access. This number includes a mix of small and medium scale farmers and of farming companies renting public land. Target areas include more than 23,000 ha of improved irrigation and appurtenant infrastructures, an extension of an existing scheme on about 100 ha, and 5,000 ha of improved drainage. The project will increase the performance of the administration, operation and maintenance functions for 8 schemes as measured by Key Performance Indicators (KPI) related to the reliability of the service and the efficiency of water distribution. Detailed KPI will be defined during preparation and may include for example water distribution efficiency, fee collection rate and so on. The underlying institutional model will include the establishment of autonomous irrigation management entities entering into contracts with irrigation users on commercial terms, whereby the entity will take responsibility for the quality of service delivery and the client will pay a fair price for the service. Finally, the project will provide assistance to farmers, farming and agribusiness enterprises and farmer organizations to improve their access to market and increase the value of their production. Employees of these enterprises will thus be considered as additional direct beneficiaries of the project. Their number will be estimated during project preparation.

24. Based on the above the tentative PDO indicators would be:
 - a. Direct project beneficiaries, including the %age of women (number) [core]
 - b. Area with new or improved irrigation and drainage service (hectares) [core]



- c. Scheme management entities reaching or exceeding their performance standard based on KPI targets (number)
- d. Farmers included as members in productive alliances or contract farming arrangements supported by the project (number)
- e. Full time equivalent jobs in enterprises supported by the project (number), disaggregated by gender

D. Concept Description

25. This project will differ from past projects (namely PISEAU) in its approach. Firstly, the goal will be to improve the performance of service delivery and the sustainability of the irrigation service through increased cost recovery. Rehabilitation works will not be an end but merely a mean to the end. This means that the institutional modernization needs to precede the rehabilitation works and the latter need to be defined in support of the service delivery improvement targets. Secondly, the approach has to be truly participative in the sense that the farmers need to be provided with choices, and be able to select the kind of services that best suit their needs. Some farmers might decide to walk out of the irrigation business because they are not ready to bear the cost of the service and this should be accounted for in the design. Thirdly, the project needs to demonstrate the win-win effect of this approach by supporting agricultural intensification and market access which in turn will allow the farmer to generate more income and contribute more to the irrigation service with a view to keep its performance at a high level. This is a complete change of mindset compared to the current engineer-driven approach that will require a carefully crafted, step-by-step process designed to the satisfaction of the various stakeholders (public administration, water user associations, farmers etc.). The project will have three interrelated components supporting this process.
26. The three interrelated components will run in parallel. Support to agricultural intensification and market access should not be delayed as it will help break the vicious cycle of low added value leading to low O&M cost recovery. Institutional strengthening and rehabilitation will also be implemented together as follows: the bulk water supply needs to be secured as a first step, in order to safeguard the irrigation operations against a complete breach of service. It will be implemented in parallel with the setting up of the new institutional arrangements. The improvements works to the distribution network will be driven as a second step, in conjunction with the participatory farmers' engagement process, in order to secure the contractual commitment of the farmers before spending on asset rehabilitation.

Component 1: institutional modernization (US\$16 million)

27. This component will finance the cost of establishing new, autonomous irrigation management entities using a commercial approach towards service delivery. Several institutional options will be considered and will be studied during project preparation (see paragraph 65) ranging from an autonomous public authority to a public private partnership or a professional farmer organization. The component will cover the cost of procuring transaction advisory services, equipping the newly established entity with state of the art operation and maintenance tools (software etc.), granting initial turnover if required, and building the capacity of its staff. It is assumed that such entities would be established for the 8 schemes to be rehabilitated as well as for the 4 schemes subject to drainage improvement works. These entities would grow to absorb more schemes in the target intervention areas after the end of this project, or they could also be merged for economies of scale.



28. A large part of the cost of establishing the new entities will be in developing the commercial approach towards irrigation service delivery. The project will support the definition of contractual terms –including new tariff structure– and performance standards and the setting up of the customer relationship function within the new irrigation management entities. The capacity of existing water users associations (GDAs) will be strengthened as they will be either part of the new entity or acting as a counterpart representing the interest of the users, including through an appropriate citizen engagement mechanism. In addition, a specific attention will be given to the gender dimension in the way both the re-designed GDAs and the new irrigation management entities operate. .
29. Tariff structure will be reviewed with a view to fulfill three complementary objectives: (i) provide incentives for efficient use of water; (ii) reflect cost structure of delivering O&M services; and (iii) adjust the fee amount charged to water users to their actual needs and capacity to pay based on plot size and different crops e.g. supplementary irrigation for winter crops, full irrigation of summer crops, perennial crops. These objectives can be achieved by using a binomial tariff based on (1) maximum flow requirement and (2) volume used, and proposing a range of values for these two components of the tariff. Farmers will be assisted to choose the specific terms that will best fit their needs. In addition, accompanying measures including the development of an information system for irrigation, piloting of in-field water management systems, and development of an irrigation alert scheme (based on crop water requirements) will help the farmers make the most efficient use of their allocated water.
30. Finally, this component will finance strategic studies and technical assistance to strengthen the strategic piloting of the irrigation sector at national level and support improved water efficiency within the project target area, including:
- a. Wastewater reuse master plan study;
 - b. Establishment of an irrigation audit function;
 - c. Revision of technical design norms for irrigation structures.

Component 2: rehabilitation and improvement works (US\$78 million)

31. This component will finance rehabilitation and improvement works for 8 schemes, plus some additional road and drainage works for 4 additional schemes. The schemes to be rehabilitated have been selected based on their location in four northwestern provinces (Governorates) where most of the largest irrigation schemes of the country are located. The selected schemes are the most ancient ones (built in the 80s or early 90s) and with urgent need of rehabilitation in order to keep them running. They also benefit from existing rehabilitation studies.
32. The component will specifically finance the rehabilitation of:
- a. Boussalem, Badrouna and Bir Lakhddhar schemes (10,540ha) in Jendouba Governorate;
 - b. Mateur scheme (1,930 ha) in Bizerte Governorate;
 - c. Djebba (1,110 ha), Medjez El Bab (3,791 ha) and Testour (1,286 ha) schemes in Béja Governorate;
 - d. Gaafour (1,728 ha) and Laaroussa (2,692 ha) schemes in Siliana Governorate.
33. Rehabilitation works will mostly include repairs on the pump stations and hydraulic equipment on the pipe network, replacing old pipelines prone to breakage, replacing flow meters and flow limiters, and adding new SCADA automation systems. Service roads will be rehabilitated where they are in bad condition. In the Jendouba scheme, a sediment trap will need to be desilted. In Djebba, a new pump station and rising



main are to be established to reinforce the water supply system. These new infrastructures are located on public (government) land. The project will not build or modify any dam, however due diligence on existing dams supplying the schemes will be conducted to verify whether safety requirements are met.²⁰

34. In addition, the project will rehabilitate and expand the El Hajeb scheme (542 ha) in Sfax Governorate. This scheme was selected based on its location in the area of the country with the most constraints on water resources. The reuse of wastewater appears a promising solution in this specific context. This scheme relies on treated wastewater from Sfax South wastewater treatment plan (WWTP). The extension area amounts to about 130 ha. The rehabilitation and extension works include the construction of a 4,000 m³ reservoir, rehabilitation of pump station, replacement of old pipelines and hydraulic equipment.
35. Finally, this component will finance critical drainage works that are necessary for the agricultural intensification of the following schemes:
 - a. Gouboullat scheme (1,500 ha) in Béja;
 - b. Ghézala & Teskraya (800 ha) in Bizerte;
 - c. Rmil (200 ha) in Siliana;
 - d. Grombalia Soliman-Bouzelfa-Beni Khalled (2,500 ha) in Nabeul.
36. The cost of implementing the environmental and social management plans related to the construction works financed by the project is also included under this component.

Component 3: support to agricultural development and market access (US\$26 million)

37. This component will help improve market linkages and boost value addition in irrigated agriculture. It will work on the supply side –building the capacity of farmers and farmer organizations in producing up to market specifications– as well as on the demand side –developing competitive agricultural value chains. Main value chains considered under this component are vegetable crops including for industrial use (tomato, hot pepper), fruit trees, fodder crops, and industrial crops (sugar beet). Some targeted support related to cereals might also be included, considering their large share of the current cropping patterns, although these crops have in general a lower value addition and result in less job creation. A stock-taking study on pre-existing value chain analyses already carried out in the areas of intervention will be conducted during project preparation to inform the design of this component and select priority commodities.²¹ The selection criteria for choosing the commodities could include income generation, livelihood improvement, and job creation with a focus on smallholder farmers, youth, and women.²² Citizen engagement and gender inclusion will be ensured for this component through appropriate consultative and monitoring mechanisms.
38. *Subcomponent 3.1: supporting producers and producer organizations.* This subcomponent will focus specifically on providing technical assistance to farmers in order to help them secure market access. Increasing the participation of smallholder farmers in dynamic domestic food markets requires paying special attention to inequalities in access to assets and public services—inequalities that challenge their

²⁰ The following large dams are concerned: Siliana, Sidi Salem, Bou Heurthma and Joumine

²¹ In particular, the study will look in detail at the gender dimension captured in those pre-existing value chain analyses.

²² Specific criteria could therefore include number of small farmers participating in the key value chains (inclusive value chains), value of production and revenues from agriculture and agribusiness, number of jobs created in agriculture and agribusiness, number of small and medium enterprises involved in the value chains, amount of investment being made in agriculture and agribusiness and participation of youth and women in economic opportunities from agriculture and agribusiness.



competitiveness. Producer organizations are thus essential for smallholders to take part in value chains and cater to market demands, as smallholders can bargain better as a group than as individuals. Contract farming is a practical answer to the need of vertical coordination within value chains to strengthen efficiency, sustainability, adaptation to rapidly changing market demands and management of quality.²³ The development of “productive alliances” –which are long-term partnerships based on pluri-annual business plans in selected value chains between producer organizations and buyers– would also be explored as part of this component. The technical assistance provided under this sub-component will incorporate specific support for women and youth groups in an inclusive approach. A special focus will be given to the need to apply existing regulations that link product price to its quality (but is currently not applied). Tunisia benefits from good research institutions and well-trained young experts who could be mobilized as part of this component. For example, the *Institut National des Grandes Cultures* has recently developed innovative programs that provided technical advice to small producers through modern communication media (e.g. smartphones).²⁴ The technical assistance mobilized under this component will also aim at monitoring soil fertility and include the implementation of a Pest Management Plan.

39. *Subcomponent 3.2: developing competitive agricultural value chains.* This second sub-component will address larger value chain development issues and leverage the upcoming Platform for Value Chain Development (see implementation arrangements section). In particular, the Platform will help strengthen the coordination with the *Integrated Landscapes Management in Tunisia's Lagging Regions (P151030)* Project in designing interventions to boost the development of high-value crops.

40. The package of support services provided by the Platform will include:

- a. business-to-business networking and cluster development (aggregation of firms and producers) activities based on strategic market orientation and underpinned by rigorous analytics;
- b. advisory and mentoring services to beneficiaries on the development of better market orientation²⁵;
- c. assistance in preparing applications to available grants and matching grants, or accessing finance through the banking sector, particularly liaising with the financial products supported by the Tunisia Micro, Small and Medium Enterprise Development (MSME) Project (P124341), which will increase the economic penetration of the agribusiness sector in the credit market.

41. In addition, the project will provide additional funding for the matching grant facility established under the MSME Project to support private investment in support of critical missing link within selected value chains.

²³ Contract farming is well adapted when: (i) the product has a limited and specific output market; (ii) production requires a substantial upfront investment; (iii) the buyer seeks a particular quantity of quality not available through the open market; and (iv) dealing with industrial crops, high-value horticulture, and tree crops.

²⁴ The rate of penetration of communication technology (telephones) is particularly high in Tunisia compared to other countries at the same level of GDP per capita. The International Communication Union quotes 128 mobile phones subscription for 100 people. The considerable number of Facebook accounts (5.8 million) suggests that multiple accounts are frequent and such data should not be misinterpreted, but even rural governorates (Le Kef, Tataouine, Beja, Jendouba) gather more than 20, 000 accounts.

²⁵ These services will consist of participatory approaches to provide target beneficiaries with: (i) information on growing markets and potential clients, the opportunities and challenges they would face in value chains with higher value-added, as well as the critical success factors for a stronger integration in them; and (ii) assistance to identify the investments they need to do to develop competitive advantages in these markets and value chains



Note to Task Teams: The following sections are system generated and can only be edited online in the Portal.

SAFEGUARDS

A. Project location and salient physical characteristics relevant to the safeguard analysis (if known)

Rehabilitation of existing irrigation schemes in Beja, Jendouba, Bizerte and Siliana governorate:

- a. Boussalem, Badrouna and Bir Lakhdhar schemes (10,540ha) in Jendouba Governorate;
- b. Mateur scheme (1,930 ha) in Bizerte Governorate;
- c. Djebba (1,110 ha), Medjez El Bab (3,791 ha) and Testour (1,286 ha) schemes in Béja Governorate;
- d. Gaafour (1,728 ha) and Laaroussa (2,692 ha) schemes in Siliana Governorate.

Rehabilitation and expansion of existing scheme using treated wastewater from Sfax town: El Hajeb scheme (532 ha rehabilitation and 130 ha expansion)

Additional schemes where agricultural drainage works are planned:

- a. Gouboullat scheme (1,500 ha) in Béja;
- b. Ghézala & Teskraya (800 ha) in Bizerte;
- c. Rmil (200 ha) in Siliana;
- d. Grombalia Soliman-Bouzelfa-Beni Khalled (2,500 ha) in Nabeul.

The project will physically rehabilitate existing irrigation schemes in agricultural areas, mostly working along existing pipelines and using existing pumping stations. For the extension of the Sfax scheme, a new reservoir of 4,000 square meters will be built on public land and some additional pipelines needed. For the drainage works, secondary and tertiary canals will be added to access fields for drainage.

B. Borrower's Institutional Capacity for Safeguard Policies

The borrower is familiar with the World Bank Safeguards policies following implementation of recently completed PISEAU program. Like for PISEAU, the project will be implemented by the Ministry of Agriculture through its regional offices "CRDA". However, the implementing agency performance under PISEAU 2 was rated Moderately Unsatisfactory due to, among other weaknesses, the failure to implement the project in accordance to safeguards requirements, even if some improvements were recorded in the weeks prior to project closing thanks to the implementation of the safeguard remediation plan. The lack of properly establishing procedures and follow up with the management of environmental and social safeguards aspects in different institutional structures involved in the implementation of PISEAU II (project management unit, technical directorates and CRDAs) did not permit effective and coordinated implementation of safeguard measures, including assessment and monitoring of impacts and decision-making procedures. The establishment of such responsibilities and procedures before project commencement coupled with a training on safeguard documents and the Implementation Manual of the project will resolve this problem. The implementing agency will benefit from guidance from the Bank Safeguards Specialists in the project team during preparation of the project's safeguard instruments.

C. Environmental and Social Safeguards Specialists on the Team



Africa Eshogba Olojoba, Markus Friedrich Vorpahl, Mehrez Chakchouk

D. Policies that might apply

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	This policy is triggered because of the potential environmental and social impacts associated with rehabilitation of irrigation and drainage schemes and expansion of one scheme. Majority of the intervention sites are known however the contours of the intervention area in some sites is not yet known (sites still under study) and/or may vary according as a result of the participatory engagement process with beneficiary farmers. Site-specific ESIA's will be prepared before project appraisal for the sites known (at least 4 sites), and an ESMF will be prepared and used for sites not yet known. The ESMF will screen and exclude Category A-type sub-projects. The ESMF will contain provisions to ensure labor aspects, including child labor and labor influx, are properly addressed in the documents prepared during project implementation, including ESIA's, bidding documents, and civil works contracts. All instruments will be prepared, reviewed, approved and disclosed in Country and at the Infoshop prior to appraisal. To ensure proper consultation with project beneficiaries, in particular on tariff increases, willingness to pay will be assessed during the planning process of tariff change. Stakeholders engagement planning will be included into project design.
Natural Habitats OP/BP 4.04	No	This policy is not triggered. Based on current information the known activities will not impact natural habitats and future sub-projects would be intended to exclude these impacts.
Forests OP/BP 4.36	No	This policy is not triggered. Based on current information the known activities will not impact natural habitats and future sub-projects would be intended to exclude these impacts.
Pest Management OP 4.09	Yes	Although the project does not plan to finance pesticides it will support agricultural intensification and diversification which may result in increased use of pesticides. A Pest Management plan will be prepared and disclosed prior to appraisal.
Physical Cultural Resources OP/BP 4.11	Yes	Considering Tunisia's rich archeological past and despite the fact that the construction works are mostly related to rehabilitation of existing



		infrastructure. A chance find procedure contained as an annex in the ESMF would be used during civil works.
Indigenous Peoples OP/BP 4.10	No	There are no indigenous people in the project area.
Involuntary Resettlement OP/BP 4.12	TBD	For sites known at this stage, no involuntary land acquisition appears necessary according to current information. This will be further verified during project preparation. An RPF would be established during project preparation to ensure proper preparation of resettlement instruments for those sites as yet unknown for which the need for involuntary land acquisition is identified after appraisal.
Safety of Dams OP/BP 4.37	Yes	The project does not include any funding for new dam construction. However, several of the irrigation schemes to be rehabilitated rely on existing large dams for their water supply. Previous assessments of dam safety or recommendations of improvements needed in the existing dam have been provided by the borrower and show evidence that (a) an effective dam safety program is already in operation, and (b) full-level inspections and dam safety assessments of the existing dams have already been conducted and documented. The team will review during preparation the documentation provided by the Borrower to ascertain the need for any further dam safety requirements.
Projects on International Waterways OP/BP 7.50	Yes	This policy is triggered because some schemes are supplied from dams fed by the Medjerda basin which is shared with Algeria. The proposed works will mostly focus on rehabilitation or minor additions or alterations to existing irrigation schemes. As such, it is expected that neither the quality nor quantity of water available to the other riparians will be adversely impacted. An exception to the requirement of notifying other riparians will be sought under paragraph 7(a) of OP 7.50.
Projects in Disputed Areas OP/BP 7.60	No	The project interventions are not under dispute.

E. Safeguard Preparation Plan

Tentative target date for preparing the Appraisal Stage PID/ISDS

Jul 19, 2017



Time frame for launching and completing the safeguard-related studies that may be needed. The specific studies and their timing should be specified in the Appraisal Stage PID/ISDS

All safeguards instruments (ESMF, RPF, RAPs, AND ESIAAs) will be prepared and disclosed in-country and at the Infoshop prior to appraisal planned for June/July 2017.

CONTACT POINT

World Bank

Francois Onimus, David Olivier Treguer
Sr Water Resources Spec.

Borrower/Client/Recipient

Ministry of Development, Investments and International Cooperation
Kalthoum Hamzaoui
Directrice Générale de la Coopération Internationale
k.hamzaoui@mdci.gov.tn

Implementing Agencies

Ministry of Agriculture and Water Resources (MARH)
Ridha Gabouj
Directeur Général
ri.gabouj@yahoo.fr

FOR MORE INFORMATION CONTACT

The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 473-1000
Web: <http://www.worldbank.org/projects>

APPROVAL

Task Team Leader(s):

Francois Onimus, David Olivier Treguer



Approved By

Safeguards Advisor:	Nina Chee	26-Apr-2017
Practice Manager/Manager:	Steven N. Schonberger	26-Apr-2017
Country Director:	Eileen Murray	09-May-2017

Note to Task Teams: End of system generated content, document is editable from here.