New Partnership for
Africa's Development (NEPAD)

Comprehensive Africa Agriculture
Development Programme (CAADP)

Food and Agriculture Organization
of the United Nations

Investment Centre Division

GOVERNMENT OF THE LIBYAN ARAB JAMAHIRIYA

SUPPORT TO NEPAD–CAADP IMPLEMENTATION

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Volume II of V

BANKABLE INVESTMENT PROJECT PROFILE

Food Security Scheme (Wheat, Dates & Olives, Seed Production)

June 2006

LIBYA: Support to NEPAD–CAADP Implementation

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NEPAD–CAADP BANKABLE INVESTMENT PROJECT PROFILE

Country: Libya

Sector of Activities: Food Security *(corresponding to CAADP Pillar 3)*

Proposed Project Name: **Food Security Scheme (Wheat, Dates & Olives, Seed Production)**

Project Area: Murzugh basin, Alkufra basin, Awinat area, 35 *Shabyat*

Duration of Project: 5 years

Estimated Cost: US$1,031 million

Suggested Financing:

Source	***US$ million***	***% of total***
Government	321	32
Financing institution(s) and foreign investors	416	40
Private sector	284	28
Total	***1,031***	***100***

LIBYA:

NEPAD–CAADP Bankable Investment Project Profile

"Food Security Scheme (Wheat, Dates & Olives, Seed Production)"

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Currency Equivalents

(1 June 2006)

Local Currency	=	Libyan dinar (LYD)
US$1.00	=	LYD1.29
LYD1.00	=	US$0.775

Abbreviations

ADB	African Development Bank
AEFF	Authority for the Encouragement of Foreign Fund
ARC	Agricultural Research Centre
BTC	Biotechnology Centre
CAADP	Comprehensive Africa Agricultural Development Programme
CAS	Country Assistance Strategy
COSOP	Country Strategic Opportunities Paper
CSP	Country Strategy Plan
DARD	Department for Agricultural and Rangeland Development
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
GPC	General Peoples Committee
GWA	General Water Authority
IDB	Islamic Development Bank
IFAD	International Fund for Agricultural Development
MBRC	Marine Biology Research Centre
NWP	National Wheat Project
NEPAD	New Partnership for Africa's Development
NMTIP	National Medium–Term Investment Programme
PRSP	Poverty Reduction Strategy Programme
UNDP	United Nations Development Programme
WB	World Bank
WTO	World Trade Organization

I. INTRODUCTION

I.1. Food security issues in Libya are always high on the agricultural agenda. Since the implementation of the first development plan from 1975–1980, it was stated clearly that achieving food security in main staple food products is considered a top priority. Since then Libya has devoted more than 5 billion Libyan dinars (about US$15 billion) to develop the agricultural sector to achieve that goal.

I.2. Due to many external and internal factors, Libya has achieved little success in attaining its goal of food security. The country still imports more than 50 percent of its food from abroad and depends on oil revenues in financing the food bill. With a population growth rate of 3 percent, the food deficit gap is expected to worsen unless major structural changes are incorporated into the agricultural sector. Improving agricultural policy and modernizing the sector to include higher efficiency technologies in order to conserve scarce natural resources such as water are among the important priorities.

I.3. Wheat, olives and dates are major staple foods in Libya. These crops are highly adapted to vast areas of Libya. Increasing their production and productivity is the main target of the following components of the food security scheme presented as a project under CAADP Pillar 3:

- Wheat Production Scheme.
- Dates and Olives Scheme.
- Seed Production Scheme.

II. WHEAT PRODUCTION PROJECT

Country	Libya
Sector of activity	Increasing food supply and reducing hunger (corresponding to CAADP pillar 3)
Proposed project name	Wheat production scheme.
Project area	Murzugh basin, Alkufra basin, Awinat area
Duration of project	5 years
Estimated cost	US$520m
Suggested financing	As specified (Table II.5)

A. Project Background

II.1. Wheat and barley are the most important cereal crops in Libya. All agricultural development plans since 1970 have invested considerable effort in their development in order to increase production to achieve self–sufficiency and food security.

II.2. Some important successes have been achieved in the late 1980s, with wheat production rising significantly from 75,000 to 271,000 tons between 1970 and 1985 and the production of barley increasing from 191,000 to 210,000 tons during the same period (as shown in Table II.1). Unfortunately, the production of both commodities fell considerably to a record low of 40,000 tons of wheat and 160,000 tons of barley in 1997 and the food security situation deteriorated to almost complete dependency on the foreign market. The failure to sustain the increase in local production of both wheat and barley was a result of various factors, including resource deterioration and inconsistent and inappropriate economic and monetary policies.

Table II.1: Agricultural Development Plans – Objectives for Wheat and Barley

The Plan	Area (ha)		Production (tons)	
	Irrigated	Rainfed	Wheat	Barley
1973–1975	35,500	108,000	75,100	191,800
1976–1980	67,000	124,000	140,000	71,000
1981–1986	75,000	2,055,000	271,500	210,000

Source: Secretariat of Agriculture; Agricultural Development Plans, 1989.

II.3. Nevertheless, the production of the maximum possible quantities of agricultural products such as wheat and barley to attain food security is the major stated policy objective concerning agriculture in the general mobilization plan formulated in 1990.

II.4. To achieve this objective a set of production guidelines were formulated, which in the case of wheat and barley include:

- Concentrate wheat production in the irrigated public projects in the desert (6 projects with a total designated area of about 40,000 ha) and increase private farmers' participation in wheat production through incentives and a policy of guaranteed price support.
- Expand wheat production in rainfed areas with precipitation of more than 250 mm/year in the Green Mountain and some parts of the coastal area.
- Expand barley production, which is grown in rainfed areas by private farmers, where the rainfall range of 150–300 mm/year is available in the northern part of the country.

- Use water from the Great Man–Made River for production of about 300,000 tons of wheat per year where wheat and barley constitute more than 40 percent of the planned cropping pattern.

B. Project Rationale

II.5. Food security issues rank very high among Libyan agricultural sector priorities. Since wheat constitutes staple food in all regions of the country, it becomes a strategic commodity for food security. The achievement of higher self sufficiency in wheat requires expansion in irrigated agriculture in regions where enough water is available to produce at least 50 percent of its growing demand. The feasibility of producing wheat has improved recently due in part to rising world wheat prices and to the elimination of Libyan market distortions caused by the over–valuation of the Libyan currency.

II.6. The proposed project would facilitate achieving the following direct and indirect objectives:

- Increase wheat production to at least 50 percent of local demand, recognizing the impossibility of satisfying full demand because of water resource limitations.
- Ensure better utilization of available resources, especially water, since wheat requires less water per unit area compared to other agricultural uses.
- Reduce dependency on imports, hence improving the agricultural trade balance.
- Increase the job–creating abilities of the economy and help reduce unemployment.
- Supply basic inputs for the food industry, such as flourmills, macaroni factories, etc.
- Create demand for related industries, such as fertilizers (urea), tractors, etc.
- Provide support to other economic activities, such as transport, trade, banking, etc.
- Benefit the environment by maintaining vegetative cover to combat desertification.

C. Project Areas

II.7. The project is planned in two main areas:

- Expansions in the existing agricultural projects in southern Libya in Alkufra, Maknusa, Barjouj, Adabwat, and Irwan. According to the soil studies underway, 25,000 ha can be cultivated utilizing some of the existing infrastructure, such as roads, electrical network, storage, housing and offices.
- New development areas in the Morzug basin and West of Auinat, where information indicates the availability of enough water resources in the aquifers to cultivate about 45,000 ha in both areas.

D. Project Description

II.8. The project is planned to involve three parallel phases, which would include (i) expansions through rehabilitation of existing projects, (ii) new expansions in existing projects and (iii) expansions into new areas.

II.9. ***Rehabilitation of existing projects***. The rehabilitation phase will involve the six existing projects and will include re–drilling of some wells, supplying pumps, providing pivot irrigation systems and supplying machinery to expand the area under cultivation to designed levels. The total area to be rehabilitated is estimated at 10,430 ha, as shown in Table II.2 below.

Table II.2: : Proposed Areas for Rehabilitation within Existing Projects

Project	Design area	Existing area	Rehabilitation area
Assarir	18,960	11,700	7,260
Alkufra	10,000	7,500	2,500
Almuknusa	3,900	3,730	170
Albarjouj	3,650	3,500	150
Arwan	1,500	1,350	150
Adabwat	1,400	1,200	200
Total (ha)	39,410	28,980	10,430

II.10. ***Expansion in existing projects.*** To better utilize existing capital, natural, and human resources in the existing desert projects, the plan envisions expansions in existing projects to reach the optimal economic size, given the limited availability of suitable land. Due to their small size, these existing projects underutilize their existing resources. Hence, it is possible to increase the area by 18,200 ha, as shown in Table II.3, and thereby increase production with only limited additional costs.

Table II.3: Proposed Areas for Expansion within Existing Projects

Project	Design area	Expansion area	Total area post–expansion
Assarir	18,960	No expansion	18,960
Alkufra	10,000	10,000	20,000
Almuknusa	3,900	5,000	14,900
Albarjouj	3,650	1,350	5,000
Arwan	1,500	650	2,150
Adabwat	1,400	1,200	2,600
Total (ha)	39,410	18,200	63,610

II.11. ***New projects.*** According to information provided by the General Water Authority (GWA), two locations were identified for possible new expansions in wheat production. These, as shown in the attached map, include:

- Murzug Basin in the south central part of Libya, with water resources available to cultivate up to 10,000 ha.
- West of Auinat Mountain in the south–eastern part of Libya, with expected water resources to cultivate 35,000 ha.

II.12. The situation and condition of the available infrastructure, such as roads, electricity, communications, etc, vary at these two locations, but necessary soil studies for these areas have recently been completed.

E. Indicative Costs and Sources of Financing

II.13. The cost of the wheat project, which will be implemented over a period of 5 years, is estimated at about US$520m, as shown in Table II.4 below. These costs are roughly based on the prevailing conditions in Libya and may be affected by their evolution.

Table II.4: Indicative Cost of the Wheat Project

Project type	Estimated area (ha)	Estimated unit cost (US$/ha)	Total cost (US$ million)
Rehabilitation	10,430	1,500	15.645
Expansions	18,200	3,000	54.600
New projects	45,000	10,000	450.000
Total	73,630	14,500	520.245

II.14. These costs are to be funded through a partnership between the public sector, the private sector and foreign investors. The contribution expected from each of these parties is shown in Table II.5 below:

Table II.5: Project Funding

Project type	Total cost (US$ million)	% Public sector	% Private sector	% Foreign investors
Rehabilitation	15.645	100	–	–
Expansions	54.600	100	–	–
New projects	450.000	–	30	70
Total	520.245	20	24	56

II.15. According to the proposed plan, the government will finance both the rehabilitation and the expansion programmes in the existing public projects (about US$70m). To encourage the private sector to play a larger role in wheat production, the plan calls for 30 percent contribution from the private sector in financing the new projects; the government shall help the private sector to play that role through provision of incentives and securities.

II.16. Libya expects that, with improvements in its economy and significant policy changes, it will be able to attract significant foreign direct investment. Foreign investors are expected to finance up to 70 percent of the new projects. International financing institutions like the *African Development Bank* (ADB), the *Islamic Development Bank* (IDB) and the Arab development banks will be approached for playing a role in financing the project for food security purposes.

F. Project Benefits

II.17. The project will generate both direct and indirect benefits to the Libyan economy, the most important of which are the improvements in food security through the increase in wheat production.

II.18. ***Direct Benefits.*** A summary of the quantitative direct benefits is given in Table II.6 below.

Table II.6: Estimated Project Direct Benefits

Project type	Estimated area (ha)	Productivity (ton/ha)	Grain production (ton)	Straw production (No. bales)
Rehabilitation	10,430	5.5	57,695	1,043,000
Expansions	18,200	6.5	118,300	1,820,000
New projects	45,000	7.5	337,500	4,500,000
Total	73,630		513,485	7,363,000

II.19. Translated into value with local current prices of 260 LYD/ton of wheat, and 1 LYD/bale for straw, the estimated total annual revenue will be about LYD141m (US$108m). Assuming also that the project can cultivate up to 30 percent of the area with summer crops (sorghum), it will result in total sorghum production of 110,445 tons with a market value of approximately LYD22m (US$17m). Therefore, total values of the direct benefits would reach about LYD163m (US$125m).

II.20. ***Indirect Benefits.*** Although it is practically difficult to estimate the indirect benefits stemming from the project, the obvious benefits are associated with the following regional activities:

- Providing job opportunities for up to 5,000 families in the project area and up to 2,000 jobs in related activities, such as transportation, distribution, services, banking, insurance, animal production, etc.
- Creating demand for local industry such as fertilizers (urea), tractors, tires, electricity, etc.
- Benefiting the environment by expanding and maintaining the vegetative cover.

II.21. Assuming that the multiplier effect of the agricultural sector in the economy is around two, the projected investments would double the indirect benefits to the Libyan economy.

G. Implementation

II.22. The ***National Wheat Project (NWP)***, working under the auspices of DARD, is expected to be the implementing agency for the project. The NWP will first supervise completion of the technical, financial and economic feasibility studies and the generation of a coherent financial plan, which would be presented to investors and potential financing institutions. The NWP will also assume the responsibility for suggesting to the *General People's Committee* (GPC) all the required actions for the implementation of the project.

II.23. In the rehabilitation phase, which is the responsibility of the government, the NWP will provide the coordination with project management in implementation. Project execution will be undertaken by specialized local and international companies. After 3 years of successful operation of the rehabilitated projects, the state is expected to offer them for sale to the private sector in the form of private companies.

II.24. Implementation of the new expansions will partly depend on the private sector and foreign investors. The NWP will coordinate efforts with AEFF, AB, and other private financing institutions for implementing the new expansions. Priority in implementation will be based mainly on the expected returns from the various locations and the ranking of the projects according to their expected NPV or IRR.

II.25. All the new projects are expected to eventually be owned and operated by the private sector in the form of private companies owned by both Libyans and foreign investors.

H. Technical Assistance

II.26. Technical assistance is expected at various stages of the project. Potential areas for special attention are:

- Capacity building in management of specialized companies (machinery maintenance, labour management, marketing, etc.).
- Technology transfer, especially improved seeds with international potentials.
- Plant protection from pests and diseases and weed control.

II.27. The ARC, agricultural schools, FAO, and other agencies are expected to offer their support in these domains.

III. DATES AND OLIVES SCHEME

Country	Libya
Sector of activity	Increasing food supply and reducing hunger (corresponding to CAADP pillar 3)
Proposed project name	Olive production project.
Project area	Libyan oases, the coastal belt.
Duration of project	5 years
Estimated costs	US$454m
Suggested financing	As specified (Table III.2)

A. Project Background

III.1. ***Olive trees*** are native to almost all Mediterranean countries and highly adaptive to the environment. Expanding olive tree planting in areas with annual rainfall of 300 mm or more is considered a national priority in Libya. This objective has systematically been translated into successive agricultural development plans since the early 1970s and the number of olive trees increased from 3.3 million in 1970 to about 8.4 million in 1998. The substantial increase in the number of olive trees has not been matched by a corresponding increase in olive oil production and average productivity has remained low at about 25 kg of olives per tree, an equivalent to 4–5 litres of olive oil. Many factors have contributed to this low productivity, chief among them is the low economic incentive from olive production as a result of the high cost of servicing the trees, especially the labour–intensive harvesting operation, and the low oil prices resulting from the availability of other vegetable oils, such as corn and sunflower oils at subsidized prices.

III.2. These low production incentives have reduced national olive oil production to about 33–37,000 tons (less than 25 percent of national requirements) and the country has continued to import vegetable oil from the international market to satisfy the growing demand for the commodity. To encourage olive oil production, in 2002 the government adopted a policy of increasing imported oil prices by a small margin and using the revenue to supplement domestic olive oil prices. As a result, the concerned government authority buys domestic olive oils at 2.75 LYD/kg from farmers and resells them to consumers at 1.25 LYD/kg. This policy increased the role of olive production in the agricultural sector and made further expansion in the field possible. However, with the projected annual demand for olive oil estimated at 170,000 tons in 2005, rising to 177,000 tons by 2010 (based on per capita consumption of 24 kg), significant expansion in olive tree planting will be inevitable to fill the gap. The proposed project aims at achieving this goal.

B. Project Rationale

III.3. The rationale for establishing the project is based on the following reasons:

- The olive tree is the most adaptive to the Libyan environment. It thrives in a wide range of soil types, water qualities, and other environmental factors. It can be grown in rainfed areas and in areas with limited water resources and rainfall of 300 mm annually.
- The wide gap between local production and consumption, with local production contributing only 23 percent of local demand.
- The opportunities to export olive oils to international markets, especially in Europe, taking advantage of the unique location of Libya on the Mediterranean.
- Olive oil production technologies are simple and can be easily adopted by Libyans.

C. Project Area

III.4. The project is a national project in nature. It is located in regions characterized with a Mediterranean environment, with annual rainfall of more than 300 mm. These include the coastal regions, the mountains, the oases and some parts of the southern region of the country. Within these regions, the specific *Shabyat* (provinces) targeted by the activities of the project are given in Table III.1 below.

Table III.1: Project Targeted Area and Number of Trees

Region	Shabyat	Area ('000 ha)	Number of trees ('000)	Region	Shabyat	Area ('000 ha)	Number of trees ('000)
Southern Region	Sebha Aubari Murzug Ghat Wadi–shati	1,500	150,000	Western Coastal Region	Negat Khames Tripoli Tagura Gefara Surman Zawia	17,500	1,750,000
Oases Region	Gagbub Alwahat Alkufra	1,000	100,000	Eastern Coastal Region	Benghazi Alhezam Almarj Gabel ahkder Derna Gubba Betnan Ghabub	20,000	2,000,000
Mountain Region	Gharian Yefrin Nalout Ghadamis Mezda Benwaled	10,000	1,000,000				
				Total		50,000	5,000,000

D. Description and Specifications

III.5. Each location or project area will consist of the following:

- ***Olive Tree Nursery:*** To propagate seedlings for olive trees from mother trees and/or by vegetative cuts, an area of five hectares will be established as a model nursery with a specialized green house and full equipment to provide the required number of olive tree seedlings.

- ***Olive Tree Farms:*** The targeted area in each location will be divided into farms based on an economic feasibility study to be conducted for each location. The farm size will provide an income comparable to that of other prevailing activities in the region. Recent information indicates that a farm with 1,000 olive trees will provide enough income for one family to live a reasonable living.

- ***Extension Farms:*** In each location an extension farm will be established to provide extension services to the farmers. Olive trees varieties, productivity comparisons, servicing methods, pruning, harvesting, fertilization etc. are some of the activities to be performed by these extension farms.

- ***Olive Oil Processing:*** To provide for olive processing, milling plants will be established in each region. Some of these processing units will work under international standards for the international export market.

E. Sources of Finance

III.6. According to the nature of the project and its components, the required financing for the main project components is expected to be jointly provided by the government, the private sector and foreign investors with the following respective shares:

Table III.2: Project Funding

Project component	Total cost (US$ million)	% Public sector	% Private sector	% Foreign investors
Nurseries	5	–	100	–
Olive Farms	200	50	30	20
Extension Farms	2	75	–	25
Processing Plants	10	–	50	50
Total	217	47	32	21

III.7. The private sector is expected to finance the nursery farm from equity funds or through credit facilities to be provided by local banks, such as the *Agricultural Bank.* It is also expected for the public sector to share the responsibility of establishing the olive farms with the private sector together with some foreign investors and/or international financial institutions interested in financing food security projects, such as the *African Development Bank (ADB)* and the *Islamic Development Bank (IDB).*

III.8. The extension services are the responsibility of the public sector by and large. It is expected that some of the specialized regional and international organizations, such as *FAO* or *IFAD*, will contribute the required technical assistance in these areas.

III.9. The cost of the processing plants is to be shared equally between the private sector and interested foreign investors. In total, nearly 50 percent of the total cost is to be borne by the public sector, 20 percent by foreign investors and the rest to be covered by the domestic private sector which could also make use of borrowed funds from local banks.

F. Project Benefits

III.10. The project is expected to contribute significantly to the incomes and hence improve the living standards of the concerned farmers, owners of small handling and processing units, and nursery owners. The Libyan economy at large would also benefit from the project. Some of the project's benefits at the macro level would include:

- Increasing the contribution of the agricultural sector to GDP.
- Reducing vegetable oil imports, hence improving the foreign trade balance.
- Increasing employment opportunities in the agricultural sector.
- Enhancing the development of related industries by providing raw inputs and creating demand to absorb their products.
- Benefiting the environment by maintaining the vegetative cover to combat desertification.

III.11. In addition to the above, the investment in the project will provide other benefits to the economy through the multiplier effect.

G. Implementation Arrangements

III.12. The *Department for Agricultural and Rangeland Development* (DARD) will be the implementing agency for the project. Its main function is the coordination between the stakeholders, including nursery operators and owners, olive oil processors (businessmen), farmers' associations, extension departments and others. DARD will also look for support from all possible technical and financial partners for implementation of the components of the project that are not the responsibility of the public sector. According to plan, the designated *Shabyat* will furnish suitable agricultural land and enough water resources to establish the farms. The *Agricultural Bank* (AB), which is a specialized banking institution owned by the government, and private banks will be approached by DARD to contribute to financing the project. The *Authority for the Encouragement of Foreign Funds* (AEFF) will take the responsibility for contacting foreign investors and international financing institutions to take part in financing and implementation of the project.

H. Technical Assistance Requirements

III.13. Technical assistance in the field of regional planning to formulate the master plan for this national project is expected from local resources, as well as from international specialized agencies. Support in developing marketing strategies is also needed, especially in establishing short and medium term plans for exporting to the international market.

I. Issues and Proposed Actions

III.14. Since the project is in its early stages of development, further attention and actions would be required to deal with pertinent issues, such as:

- Defining in clear terms the relations between the central implementing agencies, namely DARD, the *Shabyat*, the financing institutions and the farmers. These are expected to be in the form of legal documents specifying rights and responsibilities under the project.
- Completing the necessary feasibility studies for the project.
- Approaching the international financial institutions to attract their participation in the project, especially those with Libyan shares in their capital.

IV. DATE PALMS

Country	Libya
Sector of activity	Increasing food supply and reducing hunger (corresponding to CAADP pillar 3)
Proposed project name	Date palm production project.
Project area	Libyan oases, the coastal belt.
Duration of project	5 years
Estimated costs	US$454m
Suggested financing	As specified (Table IV.2)

A. Project Background

IV.1. Like olive trees, date palm trees are very important fruit trees in Libya and are especially adaptive to almost all regions. Libyan farmers are experienced in their production. The population depended on dates for food during economic hardships and wars, which gave the tree its social and economic importance. In addition, the date palm is important to farmers as a source of farm income and family food security. Following the discovery of oil, the role of agriculture in the Libyan economy was subordinated by the emergence of the oil and service sectors. Despite the spontaneous increase in the number of date palm trees, from about 2.8m in 1974 to 6.3m by 1998, the trees have lacked proper services and care and their productivity has continued to decline. During the 1980s it became clear that to increase production and productivity, the country will have to concentrate on the following:

- Introducing new technologies for servicing the trees and harvesting dates.
- Concentrating on high quality varieties for the new plantations.
- Providing needed infrastructure for marketing (cold storage, cold transport, packaging, etc.).
- Providing for plant protection from insects and plant diseases.
- Providing extension services to farmers.
- Opening foreign markets for dates to give incentives to farmers.

IV.2. As a national priority, Libya is currently considering planting annually one million trees of high quality varieties for the next five years in order to boost the importance of the date palm in the agricultural sector and increase its contribution to the economy. When the project is completed, the country will be able to export dates in the world market and thus increase the sector's foreign currency earnings. Farmers and the economy as a whole will benefit from this project.

B. Project Rationale

IV.3. The rationale for proposing the project is based on the following:

- Date palm trees are very adaptive to all regions of the country.
- There is a need to expand date production to replace the old non–productive trees and to satisfy the growing local demand.
- There are opportunities to export high quality dates to foreign markets in which Libya has some comparative advantages.
- With the introduction of up–to–date technologies, it is possible to increase productivity and generate profits.

C. Project Area

IV.4. Unlike olive trees, which are native only to the Mediterranean environment in the coastal areas of Libya, date palms are widespread over almost all regions including the southern region and oases. Similar to the olive tree project, and following the same approach, this project will be allocated to the Shabyat with the most favourable conditions, as determined by suitable soil, water, and other economic resources. Table IV.1 shows the targeted project areas:

Table IV.1: Project Targeted Area and Number of Trees

Region	Shabyat	Area ('000 ha)	Number of trees ('000)	Region	Shabyat	Area ('000 ha)	Number of trees ('000)
Southern Region	Sebha Aubari Murzug Ghat Wadi–shati	7,500	750,000	Western Coastal Region	Negat Khames Tripoli Tagura Gefara Surman Zawia	10,000	1,000,000
Oases Region	Gagbub Alwahat Alkufra	20,000	2,000,000	Eastern Coastal Region	Benghazi Alhezam Almarj Gabel ahkder Derna Gubba Betnan Ghabub	5,000	500,000
Mountain Region	Gharian Yefrin Nalout Ghadamis Mezda Benwaled	7,500	750,000				
				Total		50,000	5,000,000

D. Description and Specifications

IV.5. Each location or project area will consist of the following:

- ***Date Palm Nursery:*** Seedlings for date palm trees are propagated by two methods: from mother trees and by tissue culture. An area of five hectares will be established as a model nursery with a specialized green house and full equipment to provide the required number of date palm tree seedlings.

- ***Date Palm Tree Farms:*** The targeted area in each location will be divided into farms based on the economic feasibility studies to be conducted for each location. The farm size will provide an income comparable to that of other prevailing activities in the region. Recent information indicates that a farm with 500 date palm trees will provide enough income for one family to have a reasonable living.

- ***Extension Farms:*** In each location an extension farm will be established to provide extension services to the farmers. Good quality date palm varieties, productivity comparisons, servicing methods, pruning, harvesting, fertilization etc. are some of the activities to be performed by these extension farms.

- ***Dates Preparation and Storage Facilities:*** To handle the targeted production, these facilities will be established in each region. Some of these facilities will work under international standards to target international markets for export.

E. Sources of Financing

IV.6. According to the nature of the project and its components, the required financing for the main project components is expected to be jointly provided by the government, the private sector, and foreign investors with the respective shares shown in Table IV–2:

Table IV.2: Project Funding

Project component	Total cost (US$ million)	% Public sector	% Private sector	% Foreign investors
Nurseries	4	–	100	–
Date Palm Farms	225	50	30	20
Extension Farms	2	75	–	25
Date Preparation Facilities.	6	–	50	50
Total	237	48	31	21

IV.7. The private sector is expected to finance the nursery farm from equity funds or through credit facilities to be provided by local banks, such as the AG. It is also expected that the public sector will share the responsibility for establishing the date palm tree farms with the private sector together with some foreign investors and/or international financial institutions interested in financing food security projects, such as the ADB and the IDB.

IV.8. The Extension services are the responsibility of the public sector. It is expected that some of the specialized regional and international organizations, such as FAO or IFAD, will contribute some of the required technical assistance in these areas.

IV.9. The cost of the processing plants is to be shared equally between the private sector and interested foreign investors. In total, nearly 50 percent of the total cost is to be borne by the public sector, 20 percent by foreign investors and 30 percent to be covered by the domestic private sector, which could also make use of borrowed funds from local banks.

F. Project Benefits

IV.10. The project is expected to generate both direct and indirect benefits to the Libyan economy.

IV.11. ***Direct benefits:***

- Increase date production and hence increase the agricultural share in GDP.
- Improve small farmers' income by engaging in the production of high value product.
- Provide new job opportunities in the agricultural sector and in related industries (processing, storage, handling, etc.).

IV.12. ***Indirect benefits:***

- Benefit the environment via combating desertification and improving the vegetative cover.
- Support other economic activities, such as small processing units, transport and handling businesses, etc.
- Provide regional stability, especially in the desert regions where migration to the major cities is high.

G. Implementation Arrangements

IV.13. The DARD will be the implementing agency for the project. Its main function is coordination among the stakeholders, including nursery operators and owners, date processors (businessmen), farmers' associations, extension departments and others. The DARD will seek cooperation of possible technical and financial partners in implementation of the components of the project that are not the responsibility of the public sector. According to plan, the *Shabyat* covered by the project shall furnish suitable agricultural land and enough water resources to establish the farms. The AB and the private banks will be approached by the DARD to contribute to funding the project. The AEFF will take the responsibility for contacting foreign investors to take part in financing and implementation of the project.

H. Technical Assistance Requirements

IV.14. Technical assistance in the field of regional planning to formulate the master plan for this national project is expected from local resources, as well as from international specialized agencies. Support in developing marketing strategies is also needed, especially in establishing short and medium term plans for exporting to the international market. Research assistance to develop tissue culture technologies to assist in the propagation of high quality date palm varieties is expected during the early stages of the project.

I. Issues and Proposed Actions

IV.15. Since the project is in its early stages of development, further attention and actions will be required to deal with pertinent issues, such as:

- Defining in clear terms the relations between the central implementing agencies, namely DARD, the *Shabyat*, the financing institutions and the farmers. These are expected to be in the form of legal documents specifying rights and responsibilities in the project.
- Completing the feasibility studies for the project.
- Approaching the international financial institutions to attract their participation in the project, especially those with Libyan shares in their capital.

V. SEED PRODUCTION PROJECT

Country	Libya
Sector of activity	Increasing food supply and reducing hunger (corresponding to CAADP pillar 3)
Proposed project name	Seed Production Project.
Project area	Tripoli, Gefara
Duration of project	5 years
Estimated costs	US$11.5m
Suggested financing	See V.15

A. Project Background

V.1. The low productivity of most of the agricultural crops raised in Libya is a major problem that has been attributed in part to the use of seeds with low potential. The use of highly productive seeds adapted to the local environment has, therefore, been regarded as one of the sector priorities. The proposed project aims at promoting seed production and encouraging the development of a private seed industry with the technical assistance of the concerned scientific institutions. Strengthening the *National Centre for Seed Production* and the *Agricultural Research Centre* (ARC) with the technical support of FAO is considered to be the first step in the direction of laying the foundation for promoting the industry. Farmers are the direct beneficiaries of the program and the society at large will benefit from better resource management and increased productivity.

V.2. Historically, seed production in Libya was practiced by both the public and the private sectors, but the efforts were neither organized nor institutionalized nor regulated. The lack of an organized production system, control authority and legislation made all previous efforts less successful.

- In the early 1960s, the Ministry of Agriculture practiced the purchase of improved seeds of wheat and barley and their distribution to farmers.
- In 1975, the Libyan–Romanian company for improved seeds and seedlings was established as a joint venture between the two countries for the purpose of a starting seed industry and promoting seed technology transfer. The joint venture continued its activities with little success and was terminated in 1991.
- The public cereal production projects saved some of their production as seeds after treating it in their treatment units.
- In the early 1990s, the authorities tried to benefit from the experience of the kingdom of Morocco by a contract to produce and train Libyans in wheat and barley seed production in public projects. The contract of cooperation lasted 3 years.
- Generally speaking, farmers use their own seeds, especially wheat and barley. As shown in Table V.1, the country annually imports its needs for different seeds:

Table V.1: Annual Estimated Seed Imports

Crop	Open (tons)	Under cover (kg)
Wheat & barley (certified seeds)	20	
Forages (oats, certified seeds)	8	
Legumes	346	
Vegetables	150	890

B. Project Area

V.3. The project is to be located in the Tripoli region for the following reasons:

- About 70 percent of Libyan agriculture is located in the western coastal zone and can be served by the project.
- The region is close to institutions connected to the seed industry: ARC, *Biotechnology Centre* (BTC), *School of Agriculture at Alfateh University.*
- The availability of marketing infrastructure, communication, and other resources needed to establish the industry.

C. Rationale

V.4. Improved seeds are the main agricultural inputs, which contribute significantly to the increase in production and productivity of most crops. Evidence indicates that improved seeds can result in increases in production of up to 30 percent in some crops. The production of improved seeds, which are suitable to the local environment, will provide needed flexibility in planning for the utilization of local resources in food production and hence food security to larger population.

V.5. Libya places high priority on the attainment of food security; improved seed technology is viewed as an important means to increase productivity and production, especially in wheat and other staple food crops to meet the needs of its growing population.

D. Objectives:

V.6. The project is expected to generate direct and indirect benefits as follows:

V.7. ***Direct benefits:***

- Produce improved seeds for cereals, forages and some vegetable seeds to satisfy local demand and export needs.
- Improve the standards of local seed industry and improve competitiveness.
- Reduce dependency on seed imports and improve the trade balance.

V.8. ***Indirect benefits:***

- Strengthen cooperation in scientific research between scientific institutions and the seed industry.
- Increase the production of most agricultural crops, especially wheat and other food security crops.
- Improve farmers' income.
- Improve the standard of living in rural communities.
- Benefit the environment by expanding the vegetative cover.

E. Description

V.9. ***Wheat and barley.*** The capacity for the proposed project is 56,000 tons of improved wheat seeds annually. The project consists of: 11,000 ha of fertile land, buildings for administration, machinery, testing and seed purification equipment, storage facilities for output and supplies. The targeted production will be achieved in four stages as follows:

- *First year:* the project buys 4 tons of breeder seed to produce 65 tons of certified seed.
- *Second year:* the project will cultivate 554 ha with the certified seeds to produce 1,108 tons of registered seeds and to cultivate 40 ha with breeder seeds to produce 80 tons of certified seeds.
- *Third year:* the project will cultivate 9,000 ha by registered seeds to produce 18,500 tons of commercial seeds, 556 ha of certified seeds to produce 1,333 tons of registered seeds, 48 ha of breeder seeds to produce 96 tons of certified seeds.
- *Fourth year:* the project will cultivate 11,000 ha of registered seeds to produce 22 tons of commercial seeds, 800 ha of certified seeds to produce 1,600 tons of registered seeds and 58 ha of breeder seeds to produce 115 tons of certified seeds.

V.10. Production will continue at a 20 percent growth rate until it reaches the production target.

F. Project Estimated Costs and Returns

V.11. The estimated investment costs amount to US$11.5m, which will cover land, buildings, machinery and working capital.

V.12. The operating costs will increase annually according to the production targets and will include farm inputs, salaries, fuel, chemicals, spare parts, electricity, insurance and other management costs. It is estimated that these costs will reach US$20m from the ninth year through the life of the project.

V.13. Project estimated returns: the project will generate returns of US$11m in the third year and continue to grow to reach US$32m in the ninth year and through the life time of the project.

V.14. ***Project Financial Indicators.*** The internal rate of return is estimated at 45 percent, signalling good financial feasibility.

V.15. ***Source of Financing.*** The project will be financed by the private sector jointly with foreign investors.

G. Implementation Arrangements

V.16. The AEFF will take the responsibility for providing incentives for local and foreign investors to establish the joint ventures. It will also be asked to give the necessary guarantees demanded by investors.

V.17. ***Vegetable Seed Production.*** It is expected that the project will engage in vegetable seed production with different strategies as follows:

- *Open field vegetable seeds*: the proposed strategy is based on (i) evaluating the field performance of the most demanded vegetable species, such as tomatoes, pepper, cucumber, beans, onions, etc.; (ii) selecting the most suitable ones based on distinguished performance; (iii) importing their certified seeds from known sources and (iv) contracting farmers for their production. Finally, the project will do all the necessary steps until the distribution stage. The establishment will organize the production, derive benefit from the added values and train technicians to assume a larger future role.

- *Hybrid Vegetable Seeds:* The production strategy is based on contracting with a company that owns the technology and is willing to transfer it at reasonable cost. The establishment will concentrate on a small number of vegetables after studying market opportunities, such as cucumber, pepper, tomatoes, melons, etc. This short–term strategy will allow the industry to develop naturally through capacity building and challenge the scientific community to invest in technology transfer.

H. Technical Assistance Requirements:

V.18. The prerequisites for the seed industry include the following:

- Advanced research institutions capable of undertaking research activities related to seed production, such as breeding, genetic engineering. biotechnology, etc.

- The know–how or the technology either locally developed or transferred.

- Human resources capable of utilizing the technology of seed production.

- Capital resources to finance all these activities.

- Good legislation that will facilitate seed handling and trade and protect the intellectual property rights of all dealing in the seed industry.

V.19. It is obvious that Libya will need technical assistance in almost all of the above–mentioned points.