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 I of V

NATIONAL MEDIUM TERM INVESTMENT PROGRAMME (NMTIP)

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LIBYA: Support to NEPAD–CAADP Implementation

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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
ARC	Agricultural Research Centre
BIPP	Bankable Investment Project Profile
CAADP	Comprehensive Africa Agricultural Development Programme
CAS	Country Assistance Strategy
COSOP	Country Strategic Opportunities Paper
CSP	Country Strategy Plan
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
GMMR	Great Manmade River
IDB	Islamic Development Bank
IFAD	International Fund for Agricultural Development
IPM	Integrated Pest Management
IUU	Illegal, Unregulated and Unreported [fishing]
MBRC	Marine Biology Research Centre
NAMC	National Agricultural Marketing Company
NCHE	National Company for Heavy Equipment
NEPAD	New Partnership for Africa's Development
NCLS	National Company for Light Supplies
NCPP	National Centre for Plant Protection
NMTIP	National Medium–Term Investment Programme
PRSP	Poverty Reduction Strategy Programme
TCVSAI	Technical Centre for Veterinary Services and Animal Improvement
UNDP	United Nations Development Programme
WB	World Bank
WTO	World Trade Organization

Preface

In an effort to halt and reverse the decline of the agricultural sector in the continent, the African ministers for agriculture unanimously adopted, at the 22nd FAO Regional Conference for Africa, held on 8 February 2002 in Cairo, a resolution laying down key steps to be taken in relation to agriculture in the framework of the ***New Partnership for Africa's Development (NEPAD)****. As a follow–up to this resolution, they endorsed, on 9 June 2002, the NEPAD* ***Comprehensive Africa Agriculture Development Programme (CAADP).*** *The recent* ***Declaration on Agriculture and Food Security in Africa****, ratified by the African Union Assembly of Heads of State and Government during its Second Ordinary Session, held in Maputo between 10 and 11 July 2003, provided strong political support to the CAADP. During this session, the Heads of State and Government agreed to adopt sound policies for agricultural and rural development, and committed themselves to allocating at least 10 percent of national budgetary resources for their implementation within five years.*

The CAADP provides an integrated framework of development priorities aimed at restoring agricultural growth, rural development and food security in Africa. In its very essence, it seeks to implement the key recommendations on food security, poverty reduction and sustainable use of natural resources made at recent global conferences. The CAADP comprises five pillars:

1. *Expansion of the area under sustainable* ***land management*** *and reliable* ***water control systems.***
2. *Improvement of* ***rural infrastructure*** *and* ***trade–related capacities*** *for improved* ***market access****.*
3. *Enhancement of* ***food supply*** *and* ***reduction of hunger****.*
4. *Development of* ***agricultural research, technological dissemination and adoption*** *to sustain long–term productivity growth.*
5. *Sustainable development of* ***livestock, fisheries and forestry*** *resources*[1]*.*

As an immediate follow–up to the Maputo Declaration, representatives of 18 African ministries for agriculture from member countries of the NEPAD Implementation Committee, the NEPAD Steering Committee, the African Development Bank, the World Bank, the International Fund for Agricultural Development, the World Food Programme, FAO and civil society, participated in a meeting held in Rome on 17 September 2003, in order to discuss the implementation of the CAADP, and more specifically the:

- *Methodology for the review/update of the* ***national long–term food security and agricultural development strategies.***
- *Preparation of* ***National Medium–Term Investment Programmes (NMTIPs).***
- *Formulation of the related* ***"Bankable Investment Project Profiles"(BIPPs)****.*

[1] Pillar 5 was initially not part of CAADP, but has been added in recognition of the importance of the sub–sectors.

*It is within this context that the Government of the Libyan Arab Jamahiriya, in an effort to reinforce its interventions aimed at fighting poverty and food insecurity, has requested FAO to assist in preparing a **NMTIP** and a portfolio of **BIPPs**, **with the aim to**:*

- *create an environment favourable to improved competitiveness of the agricultural and rural sector;*
- *achieve quantitative objectives and mobilize resources to the extent needed for the associated investment in agriculture;*
- *achieve the targeted allocation of national budgetary resources to this area, reflecting the commitment made in the Maputo Declaration; and*
- *create a framework for coordinated bilateral and multilateral financing of the sector.*

*The present NMTIP is intended to contribute to these aims. It was prepared by a team of consultants[2], under the overall supervision of the National Project Coordinator/NEPAD focal point in the Department of Agriculture and Range Development[3]. The team was assisted by experts from the FAO Investment Centre Division[4] and by the Senior Policy Officer/FAO Representative in Libya[5]. In the process of preparing this document, participation was sought from major stakeholders from government, development partners, farmer's organisations, private sector and civil society. Key to the finalization of the NMTIP was the **National Stakeholder Workshop** held on 9 December 2004, during which a draft of this document was discussed and validated, and project ideas for the BIPPs prioritized, based on agreed–upon selection criteria. **Four** of these were further developed into BIPPs that are presented in a separate document.[6] Lastly, the NMTIP and the BIPPs were reviewed by an FAO Virtual Task Force of technical experts.*

2 Dr Ali Rahuma, Team Leader; Dr Mohamed Grera and Mr Ahmed Abu Khidier.
3 Mr Mohamed Tamimi.
4 Mr David Colbert, FAO Investment Centre Division.
5 Mr Saad El Medani Ahmed, Senior Policy Officer/FAO Representative.
6 For the purposes of the present exercise, *"Bankable Investment Project Profiles"* are defined as documents elaborated in a format and with the information that could make them favourably considered by the financial institutions, donors and private investors foreseen in the Maputo Declaration. These documents should enable cooperating partners to make preliminary indications of interest, and of approximate level of funding commitment. Further feasibility analysis and subsequent processing through the concerned partner(s) regular project formulation systems would follow to obtain a project/programme proposal elaborated to the feasibility study level.

I. INTRODUCTION

I.1. In July 2003, the Libyan Arab Jamahiriya signed the Maputo Declaration supporting implementation of the Comprehensive Africa Agriculture Development Programme (CAADP) under the New Partnership for Africa's Development (NEPAD) and committing to increasing its investment in agriculture and rural development over the next five years. In order to fulfil this commitment, the Libyan Arab Jamahiriya has prepared this National Medium–Term Investment Programme (NMTIP) identifying potential investment priorities for increasing budgetary resources for agriculture and rural development.

I.2. This NMTIP presents a synthetic assessment of the performance of Libyan agriculture, grounded by its limited resource endowments, and the means employed to implement the country's strategy of self–sufficiency. It elucidates the key elements of success and the weaknesses of the strategy pursued and the major challenges and constraints facing the agricultural sector before giving an account of the current strategy and programmes for agricultural development based on the country's priorities in the sector. Within this strategy and development framework, the NMTIP provides an outline of a proposed investment programme in line with the NEPAD–CAADP initiative.

A. The Economy

I.3. Libya's economy depends heavily on hydrocarbons, which on average contribute more than 45 percent of its Gross Domestic Product (GDP) and earn the country more than 90 percent of its foreign exchange. The second most important production sector is agriculture (AGP), which contributes less than 10 percent of GDP on average, as shown in Table 1.

Table 1: GDP and Agriculture's Contribution during 1990–2002

Year *(amounts in US$)*	1990	1995	1996	1997	1998	1999	2000	2001	2002
GDP	25,806	30,492	34,242	36,317	31,527	30,559	34,854	30,987	19,879
Growth %	18.2	12.3	6.1	(13.2)	(3.0)	14.1	(11.1)	(35.8)	
Per capita GDP	5,741	6,354	6,715	6,791	6,093	5,765	6,422	5,567	3,494
% Growth of per capita GDP	10.7	5.7	1.1	(10.3)	(5.4)	11.4	(13.3)	(36.6)	
ADP	1,369	2,382	2,739	2,500	2,789	3,010	3,480	3,210	
ADP/GDP	5.3	7.8	8.0	6.9	8.8	9.8	10.0	10.4	

Source: Central Bank of Libya 2004.

I.4. Like most oil producing countries, the Libyan economy has followed a fluctuating pattern depending on the oil prices in the global market. The negative growth rates of GDP of 11.1 percent and 35.8 percent in the years 2000 and 2001, respectively, were partly due to the devaluation of local currency against all major world currencies and its negative impact on the main sectors of the economy. The fluctuations in oil prices and the devaluation of the national currency since 2000 have resulted in a drop in per capita income of more than 36 percent in 2001.

I.5. The overall performance of the Libyan economy, especially in the last decade, has also been negatively affected by the embargo imposed by the United Nations and by other internal and external factors. This is reflected in, among other things, an unstable and in some years negative growth of GDP, a sharp drop in per capita income, an increase in unemployment, an inability of most sectors to compete in an open economy, a deterioration of infrastructure, etc.

I.6. National authorities are aware of the ramifications for their economy of such dependence on a single commodity and started in 1970 to undertake economic and social transformation measures aimed at reducing dependency on oil and diversifying sources of income. The agricultural and industrial sectors were the prime targets for these measures. In the 1970s and early 1990s, massive investments of more than 20 percent of the total national expenditure (more than LYD6 billion, approximately US$4.6 billion) were devoted to the development of the agricultural sector alone. This investment was intended to secure a high degree of food self–sufficiency for staples, achieve equitable levels of income distribution and guarantee adequate and affordable levels of food consumption to urban and rural populations. Various programmes were implemented in support of this investment, most important among which are the large–scale land reclamation and water resource development projects, the settlement establishment and productive projects, as well as the large animal production complexes.

I.7. Nevertheless, the agricultural sector could not, with its current configuration and performance levels, satisfy the rising demand for food nor contribute to overall economic development as desired. Libya is currently witnessing the emergence of a new development paradigm based on economic reforms. Authorities are convinced, far more than ever, of the need for invigorating their agricultural policies and programmes to conserve and efficiently utilize their natural resources and enhance agricultural productivity in conformity with the CAADP initiative under NEPAD. Reforms were also needed to improve the incentive structure in farming and to take advantage of the potential opportunities that could be offered as a result of the emergence of political and economic blocks and Libya's accession to the World Trade Organization (WTO). In this pursuit a clearer strategic vision for development of the agricultural sector and more investment would be needed.

B. Basic Features of the Agricultural and Rural Sector

I.8. ***Natural Resource Endowments.*** Total arable land in Libya is estimated at 3.6 million hectares, representing only 2 percent of total land area and located mostly along the Mediterranean coast. Rainfed agriculture in regions receiving more than 300 mm annually is estimated at only 220,000 ha, devoted mainly to cereals, forages and some fruit trees; areas receiving 200–250 mm of rain annually are estimated at 3.2 million ha. Irrigated agriculture is confined to vegetables and fruits, especially in the coastal area, and to cereal production in the desert. Data presented in Table 2 show a significant increase in irrigated area, from 175,000 ha in 1970 to about 350,000 ha in 2000, as a result of the execution of three national development plans. The data also show the loss in forest area of about 255,000 ha to urbanization.

Table 2: Land Resources

(figures in '000 ha)	1970	1975	1980	1985	1990	1995	2000	2001
Total area	175,954	175,954	175,954	175,954	175,954	175,954	175,954	175,954
Cultivated area	2,025	2,055	2,080	2,127	2,156	2,166	2,186	2,356
Arable land	1,725	1,740	1,753	1,787	1,830	1,760	1,861	2,030
Perennial crops	300	313	327	340	356	406	325	406
Pastures	11,000	12,000	13,000	13,000	13,000	13,000	13,000	13,000
Forests	533	560	600	650	655	400	400	400
Irrigated	175	200	225	234	249	350	350	350

Source: FAO Production Year Book. Different Issues.

I.9. The country is subdivided on the basis of geographical and natural factors into four main agricultural zones encompassing: (i) the coastal zone, characterized by the Mediterranean climate and rainfall ranging between 150–400 mm/year; (ii) the mountain zone, including al–Cabal al–Khaddar in

the eastern part of the country and al–Cabal al–Garb in the West, characterized by relatively higher rainfall 300–450 mm/year, shallow soils and cooler winter temperature; (iii) the wadis and oases, characterized by low or no rain, dry climate and availability of water resources in the upper aquifers; and (iv) the desert. The coastal zone is the most important agricultural zone in the country with nearly 70 percent of agricultural activities located there, followed by the mountains and then the oases. In addition to farming, Libya is favoured by a long coast on the Mediterranean Sea and by rich fish resources, which are not fully exploited.

I.10. Libya is located in the arid and semi–arid zone, so that water resources are very limited and considered by many to be the most limiting factor to agricultural development. The country's water resources include: (i) aquifers, which constitute about 90 percent of water resources and are mostly (about 80 percent) used for agriculture; (ii) surface water from rain, some of which is harvested, with the total capacity of all dams estimated to be 120 million cubic meters (Mm^3) annually; (iii) desalinated water, estimated at 100 Mm^3/year; and (iv) recycled water, estimated at 110 Mm^3/year. Yearly demand for water, on the other hand, in 2000 was estimated at 2,164 Mm^3 (81 percent) for agricultural use, 435 Mm^3 (16 percent) for municipal use and 60 Mm^3 (3 percent) for use by industry.

I.11. The major water development scheme — "The Great Manmade River" — is designed to transport more than 6 Mm^3 daily from southern aquifers to the northern area where the fertile soils and most of the population are located. The plans are for agriculture to use more than 70 percent of the transported water to achieve self–sufficiency in most food items.

I.12. ***Population.*** The Libyan population is estimated at about 6 million people (both Libyans and non–Libyans), with the local population growing at an annual rate of 3.1 percent. This very high population growth rate is creating a scenario characterized by, among other things, a substantial modification in the age profile of the population and an equally substantial increase in its total labour force. The active population (work force) was estimated in 2000 at about 1.5 million people, of which 75 percent are males. About 14.5 percent works in agriculture, declining by almost 50 percent from the figures quoted for the early 1970s, as shown in Table 3, as a result of the fast development in other economic sectors, notably the service sector. This, however, doesn't mean that agriculture is not important for employment since it can provide jobs for certain types of labour that may not be employed in other sectors.

Table 3: Total and Agricultural Population and Labour Force, 1970–1995

(figures in thousands)	1970	1975	1980	1985	1990	1995	2000	2001
Population	1,986	2,430	2,973	3,605	4,495	5,009	5,124	5,299
Rural population	574	570	540	521	539	600	759	782
Active population	519	628	755	904	1,124	1,151	2,231	2,232
Agricultural ac. pop.	150	147	137	131	157	216	423	424
% of total	*28.9*	*23.5*	*18.2*	*14.5*	*14.0*	*18.8*	*19.0*	*19.2*

Sources: FAO Production Year Book, different issues; Secretary of Planning, Full Mobilization Plan 1991–2000.Tripoli–Libya, 1990.

I.13. ***Production, Productivity and Farm Size.*** The production of irrigated crops, notably vegetables and fruits, has followed a rising trend, as indicated in Table 4, and adequately satisfies local demand. In contrast, the variable production of wheat and barely does not satisfy more than 25 percent of local needs. These crops are cultivated on farms of highly diverse sizes and structure and varying levels of efficiency.

Table 4: Production of major Agricultural Crops, 1995–2002								
(figures in '000 tons)	1995	1996	1997	1998	1999	2000	2001	2002
Wheat	23	28.2	27.2	46.7	68.5	64	48.5	54.3
Barley	17	124	118.7	217.3	305.5	264	230	263
Vegetables	1,183	1,100	1,250	1,340	1,500	1,650	1,650	1,226
Fruits	600	600	630	635	641	650	650	660
Source: National Corporation for Information and Documentation: Statistical Book 1998. Tripoli, Libya.								

I.14. The distribution of farms is sharply skewed towards small farms (< 20 ha), totalling more than 150,000 farms in 1995 and constituting about 90 percent of the total number, as shown in Table 5. Historically, most farms in Libya were small in size (except for those operated by Italian settlers) because of limited labour and other resources. The farming business was primitive, utilizing animals and primitive tools; the objective of the farm was to sustain and provide a livelihood for the family, since agriculture was the only source for employment and living. The number of small farms dramatically increased over the last 25 years at the expense of medium and large farms, which were subdivided in compliance with the Islamic Law on Inheritance and subdivision of holdings among the heirs. However, the number of farms in the 1–5 ha range decreased by 14 percent, from 6,790 in 1974 to 5,830 in 1995, as a result of expanded urbanization; and the number of those in the 5–20 ha range increased from 37.5 percent in 1974 to 56.2 percent in 1995. According to existing laws and regulations, land cannot be rented, however, arrangements are sometimes made by farmers unable to work for their farms to be operated and managed by a public authority for a share of the revenue.

Table 5: Distribution of Farms by Size						
Year	Farm size	1–5 ha	5–20 ha	20–100 ha	> 100 ha	Total
1990	Area ('000 ha)	100	867	650	539	2,156
	% of total	5	40	30	25	100
	No. of farms ('000)	50	88	19	2	159
	% of total	31	56	12	1	100
1995	Area ('000 ha)	118	1,060	589	589	2,356
	% of total	5	45	25	25	100
	No. of farms ('000)	58.3	95	15	1.7	170
	% of total	34	56.2	8.8	1	100
Source: FAO Production Year Book, different issues.						

I.15. The number of medium size farms (20–100 ha) decreased slightly during the 1990's to about 15 000 farms (nearly 9 percent of total farms in 1995) because of social and economic factors. Most of these farms are privately owned and operated by hired labour. The number of large farms remained almost the same during the 1990's, as most of the large holdings are state projects developed during the 1970s and 1980s. Most of these farms are established and operated by the State and utilize modern technology, such as the cereal projects in Sabha and in the Alkufra/Sarir area. The number of large farms increased from 1,100 in 1974 to 1,700 farms in 1995.

I.16. ***Agricultural and Food Trade.*** Libya imports more than 50 percent of its agricultural needs due to its limited natural resources and expanding demand as a result of its rapidly growing population. Dominant among the imports are wheat, sugar, vegetable oil, meat, dried milk, tea, coffee, and cocoa and processed dairy products. It also imports animal feed and feed industry inputs, cotton, and fruit concentrates. Over the last five years, Libya imported US$4 billion of food and agricultural products annually. This accounts for more than 21 percent of total imports and amounts to US$762 per capita annually, as shown in Table 6. Agricultural exports are negligible, despite official efforts to enhancement them, and are limited to exports of potatoes, onions, dates and fish to neighbouring countries.

Table 6: Agricultural Trade, 1990–2000				
Year	Export	Import	Agricultural import	Agri–import/ total import
1990	3,744.9	1,510.9	311.7	20.6
1995	3,222.1	1,728.5	389.9	22.5
1996	3,578.7	1,914.8	340.5	17.8
1997	3,791.0	2,138.6	466.5	21.8
1998	2,468.0	2,203.8	542.8	24.6
1999	3,374.0	1,928.6	341.1	17.7
2000	6,248.0	1,911.4	455.9	23.8
Amounts in million LYD. Source: National Corporation for Information and Documentation, Statistical Book 1998. Tripoli, Libya.				

I.17. Despite its strategic location, which permits production of both Mediterranean and desert agricultural crops, Libya has difficulty competing in the global market. It will require significant efforts to enhance efficiency and benefit from its climatic diversity to produce crops such as citruses, date palms, olives, and table grapes and melons (under natural conditions in the southern region). Some vegetables like potatoes, peppers and squash can be grown to advantage due to soil conditions and freedom from soil born diseases. Libyan agriculture can enjoy the still undisturbed environment and provide opportunities for good farmers to specialize in organic farming.

I.18. ***Supporting Services and Infrastructure.*** Libya has witnessed wide–scale development of good infrastructure in terms of electricity, roads, dams, reservoirs, and communication networks. The different geographical locations are well connected by roads, and the agricultural roads connecting farms and schemes are paved standard roads totalling about 26,000 km. Maintaining the road network is a major challenge facing the Libyan authorities.

I.19. Heavy investment has also been made in water transport through the Great Man–made River, primarily to boost irrigated agriculture. The river supplied more than 200,000 ha with the most efficient and reliable irrigation systems transporting more than 6 Mm^3/day. Lack of finance has limited private farms adopting efficient localized irrigation methods to no more than 10 percent. Irrigation systems provided in the public projects, such as the Kufra and Sarir projects, are central pivot introduced in the early seventies and are operating at a high efficiency (70–90 percent).

I.20. Agricultural marketing in Libya has suffered from mismanagement that hampered efficient utilization of the existing excellent roads and communication networks. The efficiency of the system could be considered low by all standards, as reflected in high post–harvest losses and bottlenecks in distributing farm products. Packaging, grading, handling, information and storage are of low standard, and government intervention through support and subsidies gave the wrong signals to farmers and consumers and resulted in misuse of agricultural resources. This, in addition to insecurity and the risks due to rapid changes in laws and directives, has reduced the chances of opening foreign markets for Libyan products.

I.21. A *National Agricultural Marketing Company* (NAMC) was established in the late 1970s and specialized in marketing (import and export) all agricultural products utilizing its modern transport facilities. The private sector was banned from all marketing functions up until the late 1980s when farmers and private distributors were given the right to market their products in private local markets.

I.22. The marketing of agricultural inputs was originally limited to two large public companies: (i) the *National Company for Light Supplies* (NCLS), responsible for marketing inputs like fertilizers, pesticides, seeds, and alike; and (ii) the *National Company for Heavy Equipment* (NCHE), responsible for marketing agricultural machinery and equipment such as tractors, harvesters, ploughs, pumps

irrigation equipment and the like. In the last four years, however, the two public companies were dissolved and the private sector was encouraged to play a greater role in marketing agricultural inputs. However, quality testing and control over private sector activities should be enforced to ensure good trading performance.

I.23. ***Agro–industry.*** The importance of developing agro–industry has been emphasized in all agricultural development plans in order to increase the value of agricultural products and agriculture's contribution to GDP, reduce production waste, stabilize supply through the extension of marketing agricultural products over a longer period of time and provide employment opportunities. Large investments were made in establishing food–processing factories, such as fruit and vegetable canning, beverages, baby food, milk factories, wheat mills, etc. However, the performance of the sector was poor due to, among other things, over dependency on imported raw materials resulting in low utilization of existing capacities and higher unit costs. Furthermore, the inability to compete with similar products due to low quality and higher costs, inefficient management and little contribution to marketing local production also hindered performance. Lately, however, the existing food factories were sold to the workers and the private sector and laws and directives were adjusted to encourage private sector participation in agro–industry.

I.24. With respect to production of agricultural inputs, Libya imports most of its agricultural inputs, except tractors and trailers, urea and some seeds and animal feeds. Tractors are manufactured in a joint venture with Massey Ferguson at a local capacity of 3,000 units per year. Mounted trailers are also produced locally for the domestic market. The *National Chemical Company* produces urea for domestic consumption and for export. Seeds for cereals, some fodders and vegetables are produced by private farmers and by the *National Centre for Improved Seeds*. Most hybrid seeds are imported, however, although efforts are being made to produce hybrid seeds through cooperation with FAO and other Arab countries. Domestic processing capacities for animal feed produce about 900 thousand tons annually, but the dependence on imports of raw materials negatively impacts its performance.

I.25. ***Public Agricultural Services.*** The government provides the following services to farmers at the central or the province (*Shabya*) level:

- Agricultural extension services are provided all the way from the local community level to the *Shabya* level. However, their proper planning and revitalization are of paramount importance in order to advance the sector's modernization and productivity.

- Veterinary services are offered to farmers at the central level through the *Technical Centre for Veterinary Services and Animal Improvement* (TCVSAI), which is responsible for quarantine and control of animal diseases, and for importing animal drugs and vaccines. At the local level, TCVSAI offers services in veterinary clinics at nominal charges. Libya is considered free from most animal diseases and good efforts are being made to keep it that way.

- Publicly funded agricultural research through the *Agricultural Research Centre* (ARC) is involved in developing and adapting technologies needed in various fields, including agronomy, horticulture, farm machinery, apiculture, soil fertility, agricultural economics, animal production, environment, etc for the modernization of the sector.

I.26. Financial services are provided through the Agricultural Bank and its branches, which are scattered throughout the country. The bank provides short, medium and long–term credit to farmers and to public projects. Short–term loans are provided for financing seasonal needs, such as the purchase of seeds, fertilizers, and pesticides. Medium–term loans are to purchase farm machinery,

irrigation equipment, farm animals and the like; while long–term loans are given for major investments in construction, well drilling, etc. The capital resources for the bank fall short of farmers needs. Other sources for financial services to the sector are the commercial banks, popular banks, and the farmers' banks (recently established). Generally speaking, financial services are good, but more effort in facilitating the farmer's benefit from these financial institutions remains to be realized.

I.27. ***Agricultural Support.*** Input and output price subsidies have been enjoyed by Libyan farmers, particularly during the 1970s and up to the mid 1980s. The policy aims at increasing farmers' income and stabilizing the farming community in face of the rapidly growing oil and service sectors. Input price subsidies were extended for seeds, fertilizers, animal feed, spare parts and farm machinery, as well as to well drilling and irrigation equipment (up to 50 percent of purchase prices). The output subsidies included support prices for wheat, barley, dates, olive oil, milk, etc. However, at present farmers enjoy only some public services, while direct price support is limited to wheat and olive oil.

I.28. Farmers also benefit from the semi–governmental agricultural cooperatives/associations, whose functions (governed by Law No. 375/1975) are to provide (i) general services by the general agricultural cooperatives and (ii) specialized services by specialized cooperatives, including sheep producers, poultry producers, honeybee keepers, etc. The functions of the cooperatives are diversified, ranging from input supplies to loan guarantees. Before the new developments in the economy, the cooperatives were the sole suppliers for almost all the farmers' needs. Now many of their functions are performed by the private sector.

C. Performance of the Agricultural Sector

I.29. Since the early 1970s, food security and strengthening the agricultural sector as a possible source of income and replacement for oil revenues were assigned top priority in Libya. For these reasons massive investments were injected into the sector. Nevertheless, the performance of the sector has been frustrated and its contribution to GDP and import substitution has remained modest. A number of factors, as discussed below in Chapter II, contributed to this. The low performance ran almost across all sub–sectors.

I.30. Within the plant production sector, performance in cereal production was poor and both production and productivity declined in the last ten years primarily due to the poor management of the irrigated public schemes; the lack of interest by the private sector in irrigated cereals due to relatively lower returns; the low level of technology with little or no improved seeds, fertilization, agricultural practices etc.; and inadequate agricultural policies to encourage local production. The private sector managed to keep vegetable and fruit productivity relatively stable despite problems related to insects and disease infestation and overexploitation of water resources.

I.31. Within the livestock sector, the production of sheep and goats, which are the main livestock animals in Libya (estimated at 6 million heads), depends on the availability of grazing pastures. This in turn depends on the amount and distribution of rainfall. Imported feed (usually barley) is the major obstacle to the development of sheep and goats since all studies indicate that their existing numbers far exceed the carrying capacity of natural pasture. Overall evaluation points to the limitations imposed by the availability of feed. Further, efforts have to be made to improve the productivity and the quality of existing local breeds in terms of meat and wool. It is worth noting that sheep and goat statistics, as shown in Table 7, indicate a decreasing trend in recent years due in part to drought spells experienced during this period.

Table 7: Heads of Livestock by Major Types, 1985–2002						
	1985	1990	1995	2000	2001	2002
Camels	170,000	140,000	101,000	71,000	72,000	72,000
Cattle	200,000	250,000	145,000	210,000	220,000	220,000
Goats	900,000	1,100,000	1,250,000	1,263,000	1,265,000	1,265,000
Sheep	5,500,000	5,200,000	5,100,000	4,124,000	4,125,000	4,130,000
Source: National Authority for Information & Documentation, Statistical Book 2004.						

I.32. Dairy and beef cattle are in small numbers, less than 220,000 heads. Due to environmental and management factors, the performance of the imported Friesian breed was less than expected in the public sector dairy projects. In the last few years almost all public projects have been transferred to the private sector and better performances are expected. In the late 1990s Libya imported a beef breed from Morocco on an experimental basis, but the availability of feed and the high cost of production remain limiting factors. Camels also showed a decreasing trend, from 170,000 in 1985 to about 72,000 in 2002, due mainly to their slaughter as a source of meat since meat imports decreased significantly during the period.

I.33. With regard to poultry production, the private sector dominates both the broiler and egg production sides of the business (more than 70 percent of poultry business). The performance of the sector is affected by weak planning and instability in production caused by seasonal variations in prices, as well as over dependency on imported feed, equipment and spares. Limitations in breeding, poor management and high costs of production have also contributed to the inability of the sector to compete with imports. Plans are currently under consideration to increase the sector's contribution to food security by establishing a national centre to produce breeding stock for broilers and eggs in collaboration with specialized European firms.

I.34. The poor performance of the fishing sector was due to the low investment in infrastructure and capacity building compared with the agricultural sector (less than 10 percent); the lack of scientific inputs in planning and execution (especially during the implementation of the development plans from 1975 to 1985); and the lack of control over the country's economic zones, which created opportunities for IUU fishing from foreign vessels. This was exacerbated by the inability to establish complementary industries, vessel building and maintenance, export port facilities, etc. The lack of financial institutions specialized in financing fishery schemes and the generally poor investment environment hindered Libya's ability to attract foreign investments to the sector.

I.35. Since the early 1970s food security and poverty alleviation have been assigned top priority in all the stages of agricultural development efforts. Unfortunately, the performance of Libyan agriculture in achieving food security has been less than satisfactory. Self–sufficiency ratios in wheat, meat and milk were 10 percent, 62 percent and 45 percent, respectively, during the last 10 years, and the gap between local supply and demand is widening, indicating a deteriorating food security situation. The food budget rose from US$300m in 1970 to US$1.2 billion in 2000. Oil revenue remains the sole source for balancing food supply and demand, pointing to the failure of all plans to increase food supply to achieve food security. Although per capita income exceeds US$6,500 annually, there are problems with large families and low–income groups. The government tried to set up plans to provide access to subsidized food and support to their incomes. Poverty, as defined as people living below one dollar a day, does not exist in Libya.

I.36. The performance of the import agricultural trade has been impacted by various negative barriers, including its dominance by an inefficient public sector; its limitation primarily to European Union countries (more than 70 percent of trade), with very little trade with Arab and African countries; its dependence on the availability of oil revenues at the time of the transaction; and its failure to take

into consideration the effect of imports on the country water resource balance. On the export side, few export activities were performed given the potential and the comparative advantage in fruits, vegetables, and fish. The poor performance is due to inadequate export infrastructures in terms of handling packaging, grading, standards and quality control, etc. The sector also suffers from limited efforts in capacity building of human resources and poor trade policy, with few incentives to encourage export activities.

D. Strategy and Programmes for Agricultural Development and Food Security

(i) Strategic Planning Framework

I.37. Strategic planning in Libya is performed at three main levels: (i) the General Planning Council[7] reviews plans at the national level prepared by the appropriate authorities and approves them for submission to the People's Congresses, (ii) the Secretariat of Planning prepares and studies the plans of all sectors at the national level and oversees their proper implementation and (iii) similar bodies exist at the *Shabya* level for preparing local plans to be implemented with local resources.

I.38. The current general trend in Libya is to depart from central planning and give more responsibilities to local authorities in planning and execution. Since the 1981–1985 transformation plan, the country has not had any formal plan and adopted instead year–to–year planning according to the availability of oil revenues. The only major investments in the field of agriculture are the implementation of the Great Manmade River.

I.39. Although these planning institutions may seem to be able to perform their functions in theory, in practice they lack the resources and are unable to set clear objectives, policies and tools to ensure efficient planning.

I.40. The Government's objectives and strategy for the agriculture sector were stated in three consecutive agricultural development plans (1973–1975, 1976–1980 and 1981–1985.

I.41. ***Libya's Agricultural Development Objectives.*** All agricultural development plans state that their aim is to achieve the following objectives:

- Food security by producing the maximum attainable production from the strategic wheat, meat, and dairy products
- Conservation of natural resources by different measures, such as soil reclamation, water harvesting and soil conservation
- Increased contribution of agriculture to GDP by promoting production and value–added activities
- Employment generation in the rural sector
- Balanced regional development via the establishment of settlement projects
- Provision of raw materials to the industrial sector
- Maintenance of good infrastructure for the sector (roads, electricity and water supply)
- Increased foreign exchange earnings for the sector by increasing exports.

[7] The General Planning Council consists of the General People's Committee (Cabinet of Ministers), heads of universities, research centres, secretaries of planning at the municipal level (*Shabya* level), and the governors of *Shabyat*.

I.42. Starting from these general objectives, comprehensive detailed plans were made for each sector over 5–year periods.

I.43. In addition to the development effort at the local and regional levels, five major agricultural projects were established at the national level, including the Green Mountain project, the Gefara Plain project, the Central Region project, the Kufra and Sarir project and the Fezan Region project.

I.44. Similar development took place in the animal production sector, represented by the establishment of dairy cattle and poultry complexes, sheep and camel projects. The number of dairy cows reached 40,000, sheep and goats 6.4m heads and camels 115,000 heads.

I.45. ***Food Security and Poverty Alleviation Objectives.*** Food security in Libya is a national priority. Although the term is used to mean self– sufficiency in major food crops, recently the planning authorities realized that this would impose a heavy burden on the country's fragile natural resources and might lead to their exploitation beyond sustainable levels. The national (unwritten) strategy is three–fold:

- Maximize the production potential of natural resources within their level of sustainability and within economic feasibility objectives (mainly by vertical integration with minimum expansions in irrigated land)
- Employ the country's comparative advantage in exporting crops and value–added commodities to increase foreign earnings that may be used to buy food for local demand
- Transfer some crops, such as wheat and forage crops, to water–abundant countries through bilateral long–term investment arrangements.

I.46. These strategic objectives are implemented both at the regional and at the central level. The Great Man–Made River is expected to help in achieving food security within this framework.

I.47. ***Trade Objectives.*** Most recently the national objectives for internal trade included the following:

- Satisfy wants with optimal means and minimum costs
- Promote optimal use of economic resources in processing, import, export and marketing
- Ensure a stable and continuous supply of goods under best conditions and minimum costs
- Maintain control over trade activities to ensure stable prices and regional availability of goods.

I.48. Given these objectives, internal trade is operated by the following entities: industrial companies, import–export specialized public companies, distribution channels: popular markets and consumers' associations. In the last few years, the country has witnessed a relaxation of many of the restrictions related to trade and distribution, with more responsibilities given to the private sector.

(ii) Country Priorities

I.49. ***Sustainable Food Security at the National and Household Levels.*** The priorities for food security at the national level consist of:

- Managing agricultural resources to maximize production of strategic commodities, such as wheat, meat and dairy products, to achieve the highest level of food security, while maintaining the sustainable use of resources
- Managing foreign trade to maximize benefit from the country's comparative advantages and substitute for food deficits.

I.50. At the household level the priorities include the following:

- Achieving more efficient and equitable distribution of the national wealth for the purpose of providing food for all households in all regions at all times
- Reducing food wastes and eradicating poverty imposed by unfair distribution of income.

I.51. ***Management of Natural Resources.*** Water resources are the limiting factor in agricultural development and life in general in Libya. Water management objectives are to optimize use for domestic consumption, as well as for agriculture and industry. The competition between agriculture and other users is a recognized fact and the related economic, social and technical factors should be identified to facilitate optimal distribution of the resource in both short and long–term planning.

I.52. The other critical resource is agricultural land, which is threatened by:

- Urbanization caused by both population growth and the influx of people in cities from rural areas, with the resulting transfer of agricultural land surrounding the cities into residential dwellings
- Soil degradation especially in high and fragile land
- Soil salinization due to lack of irrigation water and poor management.

I.53. For these and other reasons soil conservation has become a priority in the sector. Furthermore, rangeland management and fishery resources management are considered key to agricultural development and food security in all national and local plans.

I.54. ***Enhancing National Technical and Institutional Capabilities.*** Considerable efforts have been exerted to enhance the technical capabilities in the agricultural sector. These include:

- *Agricultural education:* There are more than 15 intermediate (pre–university) technical agricultural institutions scattered all over the country to train assistant engineers in the different agricultural fields (horticulture, agronomy, soil, water, animal production, farm machinery, etc.). In addition, five agricultural colleges prepare agricultural engineers in all agricultural disciplines. The output of this specialized education is to enhance the technical capabilities in the agricultural sector.
- *Agricultural Research:* The establishment of the agricultural research centre in the mid–seventies was aimed at providing the agricultural sector with the technical assistance needed in agricultural development, leading the way in research and development, utilizing all available researchers and experts and pumping new scientific and technical blood into the sector.

I.55. Theoretically speaking, the output of the activities of these institutions can provide the sector with the needed technical assistance for development, however, the lack of proper planning and limited resources have negatively affected their efficiency and reduced their contribution to development efforts.

I.56. With respect to institutional capabilities, the lack of stable and effective agricultural institutions at all levels has been frequently cited as the most important factor that has led to the inefficiency of the agricultural sector in the last 15 years. Planning, implementation, and follow–up responsibilities are not well defined. Furthermore, the lack of clear definition between centralizing and decentralizing responsibilities resulted in the absence of capable institutions. There is still no clear thinking as to what model of institution the country wants to employ. The result of this situation has been instability and loss of responsibilities. Libya clearly needs to define and establish proper, effective and stable institutions in the agricultural sector to move foreword.

I.57. ***Improving Marketing and Agro–processing Facilities.*** Agricultural marketing and agro–processing in Libya has evolved over time. In the early stages, the marketing and processing of agricultural commodities were controlled by the public sector, with the NAMC responsible for marketing agricultural outputs throughout the country and the Almamura Company responsible for operating agricultural processing. The advantage of this situation was that the government invested public money in providing capital for infrastructure and gave protection and monopoly status for improving services at lower costs through subsidies and protection. The disadvantages were the huge bureaucracies created and the inability to sustain the level of services due to inefficiency and high cost of providing the services. The public sector clearly failed to manage the marketing and processing of agricultural outputs and created massive problems.

(iii) Major Donors' Strategies

I.58. The major donors and international financing institutions, e.g. the World Bank (WB), the International Fund for Agricultural Development (IFAD), the African Development Bank (ADB), do not have programmes in Libya as yet. Therefore, there is no WB Country Assistance Strategy (CAS) or Poverty Reduction Strategy Paper (PRSP), no IFAD Country Strategic Opportunities Paper (COSOP) nor ADB Country Strategy Paper (CSP) to review for reference in strategic planning in the agriculture and rural sector. Having said this, it is important to note that the Islamic Development Bank (IDB) extended a credit line to Libya of US$100m through the Libyan Development Bank (DB). This credit helped finance activities in the marine sector, including the MBRC fish assessment campaign in 1995 and the establishment of two tuna factories. Other activities financed through the IDB include the construction of port facilities in Sirt and the financing of two fishing vessels for the Libyan Spanish company. To date, however, the IDB has not formulated an overall strategy for development of the agriculture sector.

(iv) Project Pipeline.

I.59. After formulating the 1981–1985 development plan, Libya stopped the using this planning framework with fixed budgets and timeframes and instead adopted an annual budget planning process. This was partly due to the highly fluctuating oil market. Since 1984 the major public investment has been execution of the GMMR project, where the costs were estimated to have reached US$20 billion. The following table (Table 8) shows the main public investment activities in the agriculture sector planned by the Department for Agricultural and Range Development (equivalent to Ministry of Agriculture).

Table 8: Main Public Investment Activities In the Agricultural Sector			
Executing Authority/Project	Allocated budget 2005 (LYD)	Executing Authority/Project	Allocated budget 2005 (LYD)
Authority for Date Palm Development.	140,000,000	Technical Centre for Animal Health	11,500,000
1. Research Unit for Olives & Dates	*1,274,000*	Centre for Plant Protection & Quarantine.	14,550,000
2. Oasis Farms Project	*13,022,000*	Centre for Hybrid Broilers & Hens	21,600,000
3. Alkufra entrance Project	*6,107,000*	Centre for Improved Seed Production	11,500,000
4. Assahabi Project	*9,283,000*	Cloud Seeding & Agricultural Aviation	10,000,000
5. Teshna/Alhyra Project	*13,778,892*	Animal Breeds Improvement & Development	12,385,000
6. Afia/ Algaff Project	*10,532,530*	Fum Elgha Agricultural Project	7,000,000
7. Water drainage Project	*24,428,031*	Alwaig Agricultural Project	7,000,000
8. Alloud Agricultural Project	*18,451,220*	Wadi Bai Agricultural Project	13,800,000
9. Fezan Project	*12,376,100*	Wadi Albelad Agricultural Project	10,000,000
10. Alassa agricultural Project	*9,132,000*	Green Mountain Vegetable Cover Project	13,550,000
11. Ghadamis Project	*4,350,339*	Southern Green Mountain Project	25,000,000
12. Shalguda Project	*2,902,250*	Animal Production Rehabilitation.	10,300,000
13. Sirt Project	*1,836,000*	Natural Reservations	11,990,000
14. Zalla Project	*2,876,000*	Wadi Alkuf Safari	14,030,000
15. Wadi Albab Project	*3,474,000*	Regional Development	7,000,000
16. Reserve.	*6,175,838*	Rangeland & Pasture Development	30,000,000
National Authority for Combating Desertification	3,700,000	Irrigated Wheat Project	80,000,000
Agricultural & Animal Research Centre	10,850,000	Others	10,000,000
		Total	4,757,555,000

I.60. A close examination of the above budget figures points to the following:

- Increases in the production of olive oil, dates, and wheat for food security is at the top of Libyan agricultural priorities where more than 46 percent of the budget is devoted;
- Activities related to environmental protection and natural resources development ranked second with planned budget of about 19 percent of the total budgeted;
- Measures to improve animal production, increase trade, expand seed production and advance research take lower priorities with a share in the allocated budget of 7 percent, 6 percent, 6 percent and 5 percent, respectively;
- Although planned activities coincide well with CAADP objectives, Libya needs to focus more closely on preparing the agricultural sector to integrate into the global economy, concentrating on extension, agricultural research and improving market infrastructure;
- One final note is that Libya needs to prepare a comprehensive study outlining the linkages between all the planned activities and their relationship to the economy as a whole and to regional development.

II. MAJOR CONSTRAINTS AND OPPORTUNITIES

II.1. The Libyan agricultural sector is at a crossroads and faces great developmental challenges, both internally and within the international environment.

II.2. ***Macro–economic Constraints and Opportunities.*** In 1997 Libya passed an important law (Law No. 5/1997) to encourage attracting foreign direct investments (FDI) in different economic sectors with more incentives given to investment in the agricultural sector. Of importance from the Libyan prospective is not only the financing *per se* but the technology and know–how that may be brought with it and its importance in modernizing the agricultural sector. Following the lifting of the UN sanctions on Libya, interested European investors started negotiating agricultural projects based on the Great Man–Made River project. However, important obstacles remain to be overcome for the country to fully benefit from its natural, economic and human resources. These obstacles include:

- Institutional instability: rapid administrative changes have made it difficult to plan or follow up on plans
- Legislative conflicts with international norms, especially those related to ownership and property rights
- Lack of investment in the agricultural sector, especially in extension, agricultural education and research
- Dominance of the public sector in most economic sectors: finance, insurance, industry, trade, transport, etc., resulting in the very poor performances of the economy as a whole
- Government efforts to open up for the private sector have been slow and encounter major obstacles, especially at legislative and administrative levels.

II.3. ***Agricultural Development Constraints and Opportunities.*** The main challenge facing agricultural development is setting realistic goals for development within the sustainable use of resources. Ambitious goals like achieving self–sufficiency in all major food commodities will not be realistic given the harsh environment and the fragile natural resource base. Plans to transfer proper technology, including plans to develop human resources, can be a major step in achieving the development goals and objectives in the long run. Cooperation with finance and development partners, such as the Islamic Development Bank, FAO, UNDP and others, in providing technical support during the development process in capacity building and research could ease the challenges. Specific in this regard opportunities include:

- Rehabilitation of the agricultural sector, which requires major investments in infrastructure, capacity building (education, training, extension and research)
- Transformation of the sector from subsistence, traditional agriculture to commercial farming
- Development of the institutions needed for optimal operation of the sector, for decision–making, policy formulation, financing, follow–up and monitoring, etc.
- Encouragement of the private sector to assume most of the functions now performed by public authorities and schemes
- Gradually opening the sector to the international market and encouraging competition

- Strengthening and/or establishing quality control and other health standards and enforcing their implementation
- Monitoring the use of natural resources and establishing sustainable levels for their use.

II.4. ***Constraints to Food Security.*** Achieving food security is faced with the following constraints and opportunities:

- Proper planning for what can be produced locally and what can be imported. These plans have to take into consideration the comparative advantages of the agricultural sector, natural and human resource limitations (especially water resources) and the level of technology development
- Using pricing and other incentives as tools for adopting technologies suitable for achieving higher productivity and more efficient use of resources
- Exploring opportunities for producing food commodities in countries with abundant agricultural resources (e.g. some other African countries).

II.5. For poverty alleviation, the major constraints/opportunities are: achieving more equitable distribution of income, reforming the tax system to generate enough funds to help lower income groups, increasing small farmers' access to affordable credit and finance, improving small farmers' access to marketing opportunities, reforming laws and regulations to give large families access to agricultural resources, and enhancing capacity building within the deprived groups of society.

II.6. ***Plant Production Constraints and Opportunities.*** International competition in vegetable and fruit production would require eradicating certain insects and diseases (such as fruit flies, peach flies, apple worms, etc.), increasing productivity and reducing the costs of production. Comparative advantages should also be utilized to produce vegetables and out–of–season fruits for export, thus increasing agriculture's contribution to GDP.

II.7. Cereals and fodder production face so many constraints that calls were sometimes made to limit any expansion in their production in favour of imports. The opportunities for expanded production of wheat and other cereals include: increasing productivity through use of improved seeds (hybrids), fertilization and sound cultural practices for marginal returns to water to exceed their corresponding costs; improving management to decrease costs of production to the level of the competition; and exploring alternatives for producing cereal and forage crops abroad.

II.8. ***Livestock Sector Constraints and Opportunities.*** The major constraints facing the sector can be summarized as follows: limiting the numbers to levels supportable by sustainable use of natural pastures, improving the quality and productivity of local breeds through better management and cross–breeding programs, lowering costs of production to meet the competition in open markets, and improving animal health standards and control of cross–boundary animal pests and diseases.

II.9. ***Poultry Production Constraints and Opportunities.*** The main challenges facing this sector include: improved management to overcome problems related to quality, productivity and costs of production; adoption of policies favouring private innovations in production and technology transfer; and provision of financing to permit on–time purchase of feed from abroad.

II.10. ***Fisheries Constraints and Opportunities.*** The sector is facing the challenges of securing investments in infrastructure, capacity building and research in fishery resources; exploring opportunities to open foreign markets for high quality fish; adopting policies that encourage foreign

investments; enforcing control over the country's economic zone; and curbing illegal, unregulated and unreported fishing.

II.11. ***Agro–processing Industry Constraints and Opportunities.*** The challenges faced by the sector comprise: adoption of policies that would enhance vertical integration of production, marketing and agro–processing functions; rehabilitation of the sector via major investment in up–to–date technology to replace existing old technology; reform of capacity–building institutions; introduction of quality control standards and enforcement of their implementation; facilitating financing of raw material transactions and innovations in the sector, and downsizing public sector control.

II.12. ***Constraints and Opportunities in Agricultural Trade.*** The main challenges facing agricultural trade relate to: exploiting the country's comparative advantages in agriculture, fisheries, and other fields to increase exports; decreasing the role of oil in achieving the balance of trade; adopting trade policies that take into consideration the status of natural resources, especially water in deciding imports and exports; and diversifying trading partners with emphasis on mutual benefits from markets.

III. INVESTMENT PROGRAMS OUTLINE

A. Investment Priorities

III.1. During the last thirty years Libya has spent considerable effort and money on the agricultural sector to achieve food security and contribute more to GDP. The result of these previous efforts was the availability of relatively good infrastructure in terms of roads, electricity, housing, etc. The priorities for the sector in the next five to ten years can be summarized as follows:

- Develop, maintain and efficiently utilize agricultural resources, particularly water and land, to achieve the sector goals and objectives
- Encourage vertical growth to achieve or improve food security from local production in strategic food commodities, like wheat.
- Utilize the country's comparative advantages in the production of exportable crops that could enhance the sector's contribution to foreign earnings.

III.2. Prepare the sector through institution building, capacity building, agricultural research and extension for its integration into the world economy after joining the WTO.

III.3. The priority areas proposed below address the main issues facing the Libyan agricultural sector and provide the basis for the preliminary identification of programs and projects within the framework of the NEPAD–CAADP initiatives.

Priority 1: *Sustainable development and management of land and water resources (corresponding to CAADP pillar 1)*

III.4. Water and fertile land are the most limiting factors to Libyan agriculture. Programmes to develop these two important resources were formulated during implementation of previous agricultural development plans (1972–1986). During the last thirty years water and land resources have been excessively used beyond sustainable levels to meet higher production targets and achieve higher farmer incomes. This resulted in severe environmental as well as social and economic problems.

Libyan authorities embarked on massive investment projects to solve some of these problems in the coastal zone; the Great Man–Made River project was implemented as one of these. To complement those efforts the following programmes and projects are proposed for consideration:

III.5. ***Irrigation.*** This includes supplementary irrigation of rainfed cereal and fodder crops during critical periods of less rain to increase production and productivity and help in realizing food security. It also includes programmes for water harvesting in areas where rainfall exceeds 200 mm/year by establishing check dams and building and maintaining catchments reservoirs and irrigating systems especially in the mountain areas (Jabal al–Gharbi and Jabal al–Akhdar). The proposed programmes to be executed over the next five years (2005–2009) are as follows in Table 9.

Table 9: Proposed Irrigation Programme Investments

Activities	Qty.	Costs ('000 US$)					
		Total	2005	2006	2007	2008	2009
Check dams	No. 2,000	40,000	8,000	8,000	8,000	8,000	8,000
Reservoirs	No. 3,000	60,000	12,000	12,000	12,000	12,000	12,000
Irrigation networks	400 km	8,000	1,600	1,600	1,600	1,600	1,600
Total		108,000	21,600	21,600	21,600	21,600	21,600

III.6. ***Soil Conservation and Land Improvement.*** Conserving and improving soil productivity calls for preventing land degradation and combating desertification. These programmes include terrace building and tree plantations in targeted areas. The proposed plans to achieve specific targets over the next five years include those shown in Table 10:

Table 10: Proposed Soil Conservation/Land Improvement Investments

Activities	Qty.	Costs ('000 US$)					
		Total	2005	2006	2007	2008	2009
Terraces	600 km	12,000	2,400	2,400	2,400	2,400	2,400
Tree planting	No. 5,000,000	15,000	3,000	3,000	3,000	3,000	3,000
Total		30,000	5,400	5,400	5,400	5,400	5,400

III.7. ***Conservation of Natural Vegetative Cover.*** Libya enjoys a relatively large area with natural vegetative cover, estimated at 3 million hectares, with annual rainfall averaging less than 150 mm. The proposed programme aims at improving productivity and increasing the carrying capacity of pastures to increase meat and other animal products. Proposed activities of this program include fencing, reseeding and providing drinking points and veterinary services for animals. The proposed plan with specific targets is as follows:

Table 11: Proposed Conservation Investments

Activities	Qty.	Costs ('000 US$)					
		Total	2005	2006	2007	2008	2009
Fencing	1,000 km	20,000	4,000	4,000	4,000	4,000	4,000
Reseeding	2,000,000 ha	80,000	16,000	16,000	16,000	16,000	16,000
Drinking points	No. 200	20,000	4,000	4,000	4,000	4,000	4,000
Vet. units	No. 100	20,000	4,000	4,000	4,000	4,000	4,000
Total		140,000	28,000	28,000	28,000	28,000	28,000

<u>Priority 2:</u> Improvement of rural infrastructure and trade–related capacities for market access (corresponding to CAADP pillar 2)

III.8. Agricultural marketing in Libya is lagging behind in spite of the effort exerted during execution of the development plans in the early 1970s and late 1980s. The marketing system is inefficient and requires massive investments for its vitalization, especially if the sector is to benefit from Libya's unique geographical location with regard to Europe and other Middle East countries. The proposed plan in this area, summarized in Table 12, is based on the following:

III.9. ***Establishment of product preparation centres*** in the eastern and western regions. These centres will include adequate facilities for grading, packaging and cold storage to help prepare agricultural products for marketing abroad. The centres can be run and managed by the private sector or by farmers' associations. Total costs are estimated at US$25m.

III.10. ***Food quality and safety standards*** to benefit from the opportunity to export to international markets. The proposed plan is based on the completion of facilities, laboratories and human resource training in the field. Total cost is estimated at US$60m.

III.11. ***Improvement in quarantine efficiency*** in order to protect the country's agricultural and animal resources from insects, diseases and other harmful materials. Improvement in the quarantine system is critically needed. The plan calls for infrastructure development and capacity building for staff working in the field. Estimated cost is US$60m.

III.12. ***Transportation services*** to increase the possibilities for access to local and international markets and to increase marketing efficiency. The proposed plan calls for the establishment of certain transportation companies to perform refrigerated transportation and others to be concentrated in the agricultural production regions. These companies will be operated by the private sector and the estimated cost is US$30m.

III.13. ***Market information*** about supply and demand and prices for local and export markets are crucial for farmers' planning and for increasing market efficiency. In Libya this function needs to be created and developed. The plan proposes the establishment of a specialized department or office within the Agricultural Authority. The estimated costs are US$5m.

Table 12: Rural Infrastructure and Trade–related Investments

Activities	Cost (US$ million)
Product preparation centres	25
Food quality and safety standards	60
Quarantine efficiency	60
Transportation services	30
Market information	5
Total	180

<u>Priority 3:</u> Promotion of agro–processing (corresponding to CAADP pillars 2 & 4)

III.14. All agricultural development plans since the early seventies have emphasized the importance of developing the agro–processing industry to increase the value of agricultural products and hence increase the agricultural contribution to GDP, reduce agricultural production waste and help in spacing and marketing agricultural products over a longer period of time (stabilize supply), and provide

employment opportunities. Large investments were made in establishing food–processing factories, such as fruit and vegetable canning, beverages, baby food, milk factories, wheat mills, etc. Evaluation of the sector showed poor performance for many reasons, including over–dependence on imported raw material resulting in low utilization of existing capacities and higher unit costs, inability to compete with similar products due to low quality and higher costs, inefficient management and little contribution to marketing local production.

III.15. Recently the agricultural authorities have decided to sell to the workers and the private sector all the existing food–processing factories. Existing laws and directives encourage private sector participation in agro–industry. It remains to be seen how the private sector will perform in managing the agro–industry sector.

III.16. The proposed plan assumes a need to develop small food–processing units like flour mills, vegetable and fruit canning, meat packaging, milk and dairy products. These units will be operated by a small number of owners. The estimated costs are US$80m.

***Priority 4:* Increasing food supply and reducing hunger (corresponding to CAADP pillar 3)**

III.17. The proposed programme for this priority, summarized in Table 13, includes the following:

III.18. ***Production and commercialization of high–yield seeds and planting materials.*** Low productivity of most agricultural crops is a major problem attributed in part to the use of seed with low potential. The use of highly productive seeds adapted to the local environment is one of the sector priorities. The proposed plan aims at promoting the seed industry and encouraging the development of a private seed industry with the help of scientific institutions. Strengthening the *National Centre for Seed Production* and the *Agricultural Research Centre* with the help 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 programme, although the society as a whole will benefit from better resource management and increased productivity. The estimated cost for the programme is US$20m.

III.19. ***Eradication of insects and diseases threatening agricultural production.*** Insects and diseases like the Mediterranean fruit fly, peach fruit fly, stem borer (*hafar assagh*) and others are causing annual losses to the Libyan agricultural sector estimated at more than US$40m. Unless the country is able to eradicate or bring under control these diseases and insects, it has no chance for access to the world market. The proposed plan calls for a national programme for integrated pest management (IPM) under the supervision of the *National Centre for Plant Protection* (NCPP). The estimated cost of the program is US$40m.

III.20. ***Increase in olive trees and olive oil production.*** Olive trees are native to almost all Mediterranean countries and highly adaptive to the environment. It is considered a national priority to expand olive tree planting in areas with annual rainfall of 300 mm or more. The proposed plan calls for planting one million trees annually for the next five years. The estimated cost is US$100m. After the completion of the programme, vegetable oil imports will be substantially reduced.

III.21. ***Increase in date palm production and productivity.*** Like olive trees, date palm trees are very adaptive to almost all regions and farmers are experienced in their production. As a national priority, Libya is considering a plan to plant annually a million trees of high–quality varieties for the next five years. When completed, the country will be able to export dates in the world market to

increase the sector's foreign currency earnings. Farmers and the economy as a whole will benefit from the plan. The estimated costs are US$100m.

Table 13: Food Supply and Fight against Hunger Investments		
Activities	Qty.	Cost (US$ million)
High yield seed production		20
Insect and disease control		40
Olive oil production	5 million trees over 5 years	100
Date palm production	5 million trees over 5 years	100
Total		260

III.22. ***Wheat project rehabilitation and expansion programs.*** Since the early 1970s Libya has tried to improve its self–sufficiency in wheat. For this purpose, public projects were established in the desert over an area of about 42,000 ha. In the last 10–12 years, these projects deteriorated for many reasons and their area diminished to less than 25,000 ha. To improve wheat production and build strategic reserves of wheat to at least 50 percent of wheat demand (500,000 tons), the proposed plan calls for a three–stage program (see Table 14):

- Rehabilitation of existing projects to bring them back to their original surface area. This will involve investments in capital assets, such as well maintenance, pumps, pivot irrigation units, farm machinery, etc. The area targeted for rehabilitation is about 17,000 ha. The estimated costs are about US$150m.

- Expansion in existing schemes when soil and other technical factors permit. The plan calls for the cultivation of more area to improve economic efficiency by utilizing existing infrastructure and other resources. The estimated area for expansion is 20,000 ha, with estimated costs of US$200m.

- Expansion into new locations where suitable soil and water resources permit. Gabal Awinat and Alkufra in the South East, and Murzug basin in the Fezan Southern area are proposed. The estimated area for new projects is about 60,000 ha, with a cost of US$600m.

Table 14: Proposed Wheat Program Investments		
Activities	Qty. (ha)	Cost (US$ million)
Rehabilitation of existing projects	17,000	150
Expansion in existing schemes	20,000	200
Expansion into new locations	60,000	600
Total	97,000	950

III.23. ***Improving fishery production.*** Libya has started to pay attention to its fishery sector recently, recognizing its potentials to contributing significantly to food security. The national plan calls for expenditure of US$100m annually to rehabilitate existing infrastructure and to build a chain of harbours along the coast to facilitate fishing activities in new domains, given the fact that Libya is using only limited quantities of its fish resources according to recent studies. Fishery resources are managed by a separate authority according to the last administrative arrangements made in the General People's Committee.

III.24. The proposed plan, as shown in Table 15, consists of two parts:

- *Rehabilitation of the* Marine Biology Research Centre *(MBRC):* Establishing a scientific basis and leadership for fishery resources to lead the development efforts in the sector requires updating technology and renewing laboratories and massive capacity building for researchers and staff to be able to handle their responsibilities efficiently. The estimated cost is about US$5m annually for 5 years.

- *Infrastructure building and rehabilitation program:* To provide services to fishermen and their fishing fleets, the national plan calls for the establishment of five new harbours on the Libyan coast. These harbours should be fully constructed with all modern facilities, including fish preparations for marketing, data collection and monitoring etc. The estimated costs are US$200m over 5 years.

Table 15: Improving Fishery Production

Activities	Qty,	Cost (US$ million)
Rehabilitation of MBRC	l.s.	25
Infrastructure building and rehabilitation program	5 harbours	200
Total		225

Priority 5: Strengthening agricultural research and extension (corresponding to CAADP pillar 4)

III.25. ***Agricultural research.*** The *Agricultural Research Centre* (ARC) was established in the mid–1970s to provide the agricultural sector with the technical assistance needed for agricultural development. It is intended to lead the way in research and development, utilizing all available researchers and experts, and to continue to pump new scientific blood into the sector. Theoretically speaking, the activities of this centre should provide the sector with the needed technical assistance for development, however, the lack of proper planning and the weak linkages with agricultural officials and private authorities have significantly reduced the benefits from the ARC.

III.26. To increase the ARC's contribution to agricultural development, the proposed plan focuses on three dimensions: (i) rehabilitation of existing research infrastructure and resources, which will include upgrading laboratories (soil, water, entomology, pathology, plant, seed, animal physiology etc.); (ii) capacity building, which will include massive training and education programmes for future qualified researchers in local and international institutions; and (iii) creating links to extension departments and the private and the public authorities working in agriculture. The estimated cost for the plan is US$60m over 5 years.

III.27. ***Agricultural extension.*** In 1974 Libya hosted the meeting of the Arab Deans of Agricultural Colleges, in which they discussed the extreme importance of extension services to the agricultural development efforts of all Arab states. Since then, concerted efforts have been made to improve extension services but with little success. The proposed plan recognizes the importance of improving the role of extension in sustainable agricultural development and proposes action on two fronts: (i) improving the skills of the agricultural extension agents by massive training programmes at the *Shabya* and national levels and (ii) providing the extension offices with necessary resources for communications, transportation and all equipment and materials needed to facilitate their jobs. The plan also calls for linking extension offices with experimental stations of the ARC. The estimated budget for five years, as shown in Table 16, is US$40m.

Table 16: Agricultural Research and Extension Investments	
Activities	Cost (US$ million)
Agricultural research	60
Agricultural extension	40
Total	100

B. Selection Criteria for Bankable Projects

III.28. The criteria for identifying investments in agriculture and related activities, as stated in Law No. 5/1997, include:

- ***Conformity with natural resources utilization policies.*** The national policy for utilizing natural resources (water policy, rangeland policies, etc.) should be observed by all investors since natural resources are considered by the Libyan legislature as public property and its uses are decided by public authorities, such as the water authority, the agriculture and range development authority, the fishery resources authority, etc. Violation of the guidelines made by these authorities will have significant impact on the investment project. Laws no.2/1997, 3/1982, 7/1982, 1/1983, 5/1985, and decrees no. 791/1982, 970/1982, 680/1987, 267/ 1983, 80/1991, 47/1993 are the basis for sound exploitations of natural resources in agriculture.

- ***Environmental Sustainability.*** In recognition of the importance of environmental sustainability, which has been emphasized particularly in the last 10 years, Libya requires all investors to study the environmental impacts of their projects in complement to the economic feasibility studies for their investments. The exploitation of agricultural resources is allowed only in the framework of a sustainable environment. *The environment law no.7/1982,10/2000* sets the conditions to be observed by investors from the environmental point of view.

- ***Economic feasibility.*** The economic soundness of all projects is very important for the continuous operation under diversified conditions, especially within the nationally announced policy of reducing subsidies to the lowest level for all economic activities. Economic feasibility studies for investment projects are encouraged to take into consideration not only national factors but also the impacts regional and global factors may have on their investments.

- ***Provide jobs opportunities.*** The Law No. 5/1997 for the encouragement of foreign investment gives priority to projects that employ more workers. The issue of generating employment opportunities for the population moved to the forefront of Libyan national policy since the economy has experienced an unemployment level of more than 15 percent.

- ***Increase foreign currency earnings through export or import substitution.*** Up to now, the agricultural sector has depended completely on the revenues generated in the oil sector for all its needs and supplies, such as machinery, fertilizers, seeds, pesticides, etc. Libyan policy now encourages investment projects that would export some of their products to generate foreign revenues and those whose products would substitute for imports to save foreign currency.

- ***Integration in the existing economic sectors.*** The proposed investment project should integrate well within existing economic sectors for the purpose of improving efficiency in

the use of national resources. For instance, an agricultural project that can produce a commodity which may be used as inputs for industry would result in improvements of both sectors.

- ***Utilization of local inputs.*** Improvements in economic growth can be achieved by creating complementary relationships within economic activities. Investments that use local inputs will feel more secure and will face fewer risks than those that depend on imports of inputs controlled mainly by external factors.

- ***Regionally balanced for social equity.*** Achieving regionally balanced agricultural development falls within the national policy mainly for social reasons. Preventing rural populations from migrating to the cities requires investments that will provide services and job opportunities in the rural communities in different regions.

C. Preliminary Identification of Projects for Development

III.29. Based on the above criteria, the following project proposals should be developed into "bankable projects" with technical assistance from FAO.

- Food Security Projects
  - Wheat production scheme.
  - Olive and date projects.
  - Seed production.
- Product preparation centres.
- Irrigation networks, including GMMR projects.
- Infrastructure building and rehabilitation programme for the fisheries sector.

D. Identification of Projects for Preparation

III.30. Based on the investment priorities identified in Section III above, the NMTIP formulated four major investment project proposals with technical assistance provided by FAO: (i) food security projects (seed, wheat, olive and date production), (ii) product preparation centres, (iii) irrigation networks (including Great Man–Made River projects) and (iv) infrastructure building and rehabilitation for the fisheries sector. Bankable Investment Project Profiles (BIPPs) for these project proposals are contained in Volumes II through V of this NMTIP. A brief summary of each follows:

- ***Food Security Projects*** – ***Objective***: to improve national food security by increasing production of seeds, wheat, olives and dates. ***Components***: (i) increased wheat production based on rehabilitation and expansion of cropped areas, (ii) increased olive production and processing, (iii) increased date palm production, preparation and storage, and (iv) increased seed production for cereals, vegetables and forage crops. ***Estimated cost***: US$1,031m. ***Benefits***: improved food security based on increased production of seeds for cereals, vegetables and forage crops, as well as additional production of wheat, olives and dates. ***Beneficiaries***: farmers and rural farm communities, as well as the population of Libya as a whole. These projects support Priority 4 of the NMTIP identified above and correspond to CAADP Pillar 3.

- ***Warehouses for Grading, Packing and Storing Agricultural Products Project*** – ***Objective***: to increase access to domestic and foreign markets for Libyan agricultural products. ***Components***: (i) establishment of two product preparation centres for grading, packing and storing agricultural products, (ii) provision of transportation services to increase access to local and international markets, and (iii) provision of market information on demand, supply and prices in local and export markets. ***Estimated cost***: US$25m. ***Benefits***: reduced post–harvest losses in agriculture, improved access to domestic and international markets, and increased farm incomes. ***Beneficiaries***: farmers and rural farm communities. This project supports Priorities 2 and 3 of the NMTIP identified above and corresponds to CAADP Pillars 2 and 4.

- ***Great Man–Made River Distribution Facilities Project*** – ***Objective***: to improve the productivity of the agricultural lands around Tripoli by supplying water from the Man–Made River. ***Components***: (i) construction of irrigation infrastructure (pipeline, irrigation reservoirs, pumping stations) and (ii) design and management of the water distribution network (reservoir to farm gate). ***Estimated cost***: US$325m. ***Benefits***: increased productivity of the irrigated lands, increased food production and farm incomes. ***Beneficiaries***: farmers and farm communities, as well as the population as a whole. This project supports Priority 1 of the NMTIP identified above and corresponds to CAADP Pillar 1.

- ***Fisheries Sector Development Project*** – ***Objective***: to establish a national capability in sustainable utilization and management of marine resources. ***Components***: (i) rehabilitation of marine infrastructure and construction of wholesale markets, (ii) technical assistance and in–service training for the Marine Biology Research Centre, (iii) fisheries market and product development, (iv) institutional strengthening in fisheries management, and (v) training of Libyan fishermen. ***Estimated cost***: US$162m. ***Benefits***: improved management of fisheries resources, increased employment and income, increased food production. ***Beneficiaries***: fishermen and fishing communities, fisheries management institutions, as well as the population as a whole. This project supports Priority 4 of the NMTIP identified above and corresponds to CAADP Pillar 3.

IV. FINANCING GAP

IV.1. Libya has adopted a policy of utilizing oil revenues to finance its development plans. According to that policy, the national budget is divided into two parts: (i) the administration budget and (ii) the development budget. The former covers the annual expenses of running the government administration, salaries for public employees, education, health, security, etc. The latter covers the total costs of the projects approved for national development purposes. This self–financing policy has its positive and negative aspects. The positive aspects include the fact that Libya, unlike many other African countries, has no problem with foreign debt and its high service costs. The negative aspects are related to the fluctuations in world oil prices and their impact on oil revenues. The highly unstable oil prices during the period of the 1981–1985 development plan resulted in delays in completion of a substantial portion of the plan, thus causing some projects to begin operating with incomplete infrastructure.

IV.2. Libya's total budgetary expenditures and the share of these expenditures devoted to water and agriculture in recent years for which the data are available (1998–2003) are shown in Table 17. On average during this period, Libya spent about LYD151m, which constitutes about 8 percent of total budgetary expenditures. This percentage is below the 10 percent committed to by the African

governments in Maputo. However, Libya is planning to invest US$250m annually for execution of the NMTIP projects, this amount limited by external and internal financial obligations.

Table 17: Total Public Expenditure and Share for Agriculture and Water

Years	Total expenditure	Agriculture	Water	Total Ag. + Water
1998	1,073.1			126.2
			% of total	*11.76*
1999	895			82.1
			% of total	*9.17*
2000	1,765			172.4
			% of total	*9.76*
2001	1,900	84.9	28	112.9
			% of total	*5.94*
2002	4,365			288.5
			% of total	*6.62*
2003	2,554			123.5
			% of total	*4.64*

Amounts in million LYD.
Source: Secretariat of Planning, 2004.

IV.3. The proposed plan doesn't include implementation of the remaining portions of the Great Man–Made River project, which when completed will transport more than 6 Mm^3 of fresh water for agriculture and other uses to the coastal area of Libya. The annual budget for the project is estimated at US$300m.

IV.4. Assuming all the above responsibility, the Libyan investment in the sector will be about US$894m annually, which amounts to about 4 percent of GDP. This means that the national outlay for agriculture will be below the 10 percent of national budget agreed to in Maputo. Therefore, Libya will have to consider increasing the national budget for agriculture in the long run if it intends to live up to the Maputo commitment.

IV.5. Reviewing the portfolio of projects in the proposed NMTIP, there appear to be three basic categories of projects proposed: (i) infrastructure investments, (ii) natural resources conservation and management investments and (iii) bankable investment operations. For financing purposes, it is assumed that the government will finance the first two categories via direct financing from the national budget. Capital resources for the third category will be sought using the incentives given in the law for foreign investment (Law No. 5, 1997), which gives priority for investments in certain sectors, including agriculture.

IV.6. The wheat production schemes, which amount to about US$950m (51 percent of the total budget), may fall in the third category as bankable projects to be financed by interested investors.

V. MONITORING AND EVALUATION

V.1. The implementation of any agricultural plan in Libya falls under two levels of institutions: the *Shabya* level, and the central level. There are two institutions at the *Shabya* level are the Secretary for Agriculture and Animal Wealth and the Secretary for Marine Wealth. Similarly, at the central level, the three national authorities are the Department for Agricultural and Range Development, the National Authority for Fishery Investments and the Authority for Aquacultural Farms.

V.2. Within each of these bodies, there are departments for planning and follow–up responsible for monitoring and reporting on the execution of plans and the achievement of the goals and objectives. These departments can assume the monitoring and follow–up functions within the targeted sectors. However, substantial efforts will be needed to strengthen them through capacity building programmes and provision of other needed resources for their proper functioning. Historically, monitoring and follow–up have been among the weakest functions in implementation of previous agricultural development plans from the early 1970s up to the present.

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