



**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 REPUBLIC OF THE SUDAN

SUPPORT TO NEPAD–CAADP IMPLEMENTATION

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Volume V of V

BANKABLE INVESTMENT PROJECT PROFILE

Institutional Capacity Building

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SUDAN: Support to NEPAD–CAADP Implementation

Volume I: National Medium–Term Investment Programme (NMTIP)

Bankable Investment Project Profiles (BIPPs)

Volume II: Smallholder Water–Harvesting & Productivity Enhancement

Volume III: Integrated Traditional Farming & Pastoralism

Volume IV: Agricultural Marketing & Rural Infrastructure Development

Volume V: Institutional Capacity Building

NEPAD–CAADP BANKABLE INVESTMENT PROJECT PROFILE

Country: Sudan

Sector of Activities: Capacity Building.

Proposed Project Name: Institutional Capacity Building Project

Project Area: National

Duration of Project: 5 years

Estimated Cost: Foreign Exchange US\$20.88 million
Local Cost..... US\$29.12 million
Total US\$50.00 million

Suggested Financing:

<i>Source</i>	<i>US\$ million</i>	<i>% of total</i>
<i>Government</i>	15.6	31
<i>Financing institution(s)</i>	20.9	42
<i>Beneficiaries</i>	4.9	10
<i>Private sector</i>	8.6	17
<i>Total</i>	<i>50.0</i>	<i>100</i>

SUDAN:

NEPAD–CAADP Bankable Investment Project Profile

“Institutional Capacity Building Project”

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Abbreviations

ARRC	Animal Resources Research Corporation
ARTC	Agricultural Research and Technology Corporation
CAADP	Comprehensive Africa Agriculture Development Programme
CESS	Centre for Economic and Social Studies
DAI	Department for Agricultural Investment
DM&E	Department for Monitoring and Evaluation
DP	Department for Planning
DS	Department for Statistics
EWS	Early Warning System
FAO	Food and Agriculture Organization of the United Nations
FFS	Farmers’ Field Schools
FRES	Farming Research and Extension System
GAFRBCA	General Administration for Foreign Relations and Bilateral Cooperation in Agriculture
GAPAE	General Administration for Planning and Agricultural Economics
GDP	Gross Domestic Product
GoS	Government of Sudan
HAC	Humanitarian Aid Commission
IDPs	Internally displaced persons
IFAD	International Fund for Agricultural Development
MoAF	[Federal] Ministry of Agriculture and Forests
MoARF	[Federal] Ministry of Animal Resources and Fisheries
MoFNE	[Federal] Ministry of Finance and National Economy
MoIP	[Federal] Ministry for Investment and Privatization
MoIWR	[Federal] Ministry of Irrigation and Water Resources
MoST	[Federal] Ministry of Science and Technology
NEPAD	New Partnership for Africa’s Development
NMTIP	National Medium–Term Investment Programme
PRPS	Poverty Reduction Strategy Paper
SAP	Structural Adjustment Programme
SMAAWN	State Ministry of Agriculture, Animal Wealth and Natural Resources
UNDP	United Nation Development Program
UNHCR	United Nations High Commission for Refugees
WFP	World Food Program
WTO	World Trade Organization

I. PROJECT BACKGROUND

A. Project Origin

I.1. The NEPAD–CAADP NMTIP stakeholders’ workshop, held in Khartoum, October 2004 proposed this project in line to CAADP Pillar 4. The workshop identified institutional capacity building as one of the major bottlenecks to Sudan’s agricultural and rural sectors for sustainable development and recommended it as a priority area for project formulation and for seeking investment finance.

B. General Information

I.2. ***Geophysical Features.*** Sudan which covers an area of 2.5 million km², is endowed with diversified climatic regions, largely untapped natural resources of arable lands, forests and woodlands, range and pastures, water and animals, including game animals. The River Nile, other seasonal rivers and large-size resources of ground water, short rainfall season in the northern parts of the country to relatively long rainfall season in the southern parts of the country, potentially supply irrigation water to about one third of the estimated potential 84 million hectares of arable land under crop production in the Sudan. Sudan has six agro–ecological regions (Table 1, Appendix 2).

I.3. ***Population and Socio–economic Features.*** The country has an estimated population of 34 million (2003), with an annual growth rate of 2.6 percent based on the 1993 census. Some 60 percent of the population live in rural areas. The average annual per caput is estimated at US\$395 (World Bank 2003), indicating the extent of poverty in the country.

I.4. ***Agricultural Sector.*** Agriculture dominates the economy generating about 40 percent of the GDP and 90 percent of non–oil foreign exports earnings. It employs almost 60 percent of total manpower and provides most of the raw materials to the mainly agro–based industrial sector.

I.5. ***Agricultural Research Services.*** The *Agricultural Research and Technology Corporation* (ARTC), has the mandate of planning and undertaking applied research in crops and livestock production, natural resource base protection and conservation. It is responsible for breeding of improved and hybrid seeds of high yielding varieties, of drought tolerant crop varieties under rainfed conditions. The ARTC conducts research for soil treatment and conservation, deals with tillage and non–tillage operations, The ARTC has twenty four research programs identified and prioritized based on economic importance, relevance to export potential and food security, but the programmes are poorly funded. In this connection the farming system research and extension program is elicited for the CAADP.

I.6. ***Agricultural Extension Services.*** Effective agricultural extension services in the Sudan have been mainly confined to large irrigated schemes and to a number of IFAD, UNDP and FAO supported projects. The agricultural extension services had more than 100 *Farmers’ Field Schools* (FFS) and about 400 demonstration farms in the irrigated and rain fed sectors. However these facilities declined in number due to inadequate financial support for maintenance and operation.

I.7. ***Land Policy and Land Tenure Rights.*** Although the 1929 ordinance gives ownership to the private sector, it is confined to almost 1 percent of total land in agricultural land along the Nile and limited water courses The 1970 land act stipulates that the land in Sudan is owned by the government, which gives lease and usufruct rights to individuals for use of land resources. Thus, the current land use policy creates a disincentive to efficient utilization of agricultural and pastoral development in the

country. Ethnic conflict over crop–pastures hampers efficient and sustainable agricultural and pastoral development largely due to current land policy. Lack of land ownership limits access to credit for the vast majority of farmers, who cannot use land as collateral. The discouraging land laws, land use and tenancy laws and regulation, in addition to weak infrastructure, do not encourage private sector to invest in remote areas or in areas with unresolved land tenancy problems.

I.8. ***Agricultural Census and Statistical Data.*** Owing to inadequate financial capacity, the government did not conduct any agricultural census and depended on sporadic efforts by some of the state governments (Khartoum, Gezira). The federal *Ministry for Agriculture and Forestry* (MoAF) conducts its annual crop estimates with the support of FAO, based on rapid data collection approach.

I.9. ***Early Warning System and Food Emergency and Security Programmes.*** An *Early Warning System* (EWS) under HAC has been established with the support of WFP and FAO to assess the food situation in the country, particularly in the most food risky areas of North Darfur, North Kordofan, the Red Sea, parts of Kassala and Butana and the Southern Sudan States.

I.10. ***Promotion of the Private Sector Investment in Agriculture.*** The last amendments of the 1980 *Investment Promotion Act* was in 2003. The act encourages investment in backward economic areas. The rate of implementation of approved investment projects were about 28 percent in case of national investment applications, 17 percent in case of foreign investors’ applications, about 10 percent in case of joint companies applications, 1 percent in case of bilateral agreements investments in single or joint projects. The total implementation for the whole agricultural investments within the Investment Act program is about 16 percent of the total approved projects.

I.11. ***Planning and M&E of Agricultural and Rural Development Programmes/Projects.*** The government paid less attention to the strengthening of policy and planning organizations within federal and state ministries and agricultural corporations. Monitoring and evaluation of the ongoing projects and programs in agriculture and rural development are hardly available at the MoAF.

I.12. ***South Sudan Issues.*** Institutional development in the South is lagging behind due to the continued civil conflict and instability in government and cessation of development funding since 1987. The *Yambio Agricultural Training Institute*, supported by FAO in 1970s, was annexed to *Yambio Research Station*. Both of them are not functioning now. Similarly, Yei and Anzara sub stations to Yambio are not functioning and staff are located to Juba town with other Yambio staff with minor responsibilities. Agricultural extension services found in most cities or towns in South Sudan but are almost ineffective due to lack of mobility, extension audio–visual facilities and demonstration farms.

II. PROJECT AREA

II.1. The project would be nationwide, covering areas of agricultural and rural development where strong institutional capacity building is essential for sustainable development and food security. Therefore the potential project area covers Khartoum and state capitals of North and South Sudan. Suggested geographical locations are: (i) for research and extension services project: El Obeid and Kadugli in Kordofan, El Fasher and Nyala and Zalingi in Darfur, Yambio in the South, Um Benin in Blue Nile state, and Kassala in Kassala State, (ii) for land laws and land tenure reform project: MoAF and the *General Attorney* in Khartoum; (iii) for support of planning, statistics, investment promotion projects: MoAF, State Ministries for Agriculture in Northern states, River Nile State, Gezira State, Eastern State, Blue Nile State, White Nile State, Kordofan State, Darfur State, and the Southern states.

II.2. Direct stakeholders can be classified into the following three categories: (i) institutions of the ministries serving the agriculture and rural sector, including the livestock sub-sector as well as the other relevant public institutions and public corporations; (ii) the target groups in the agricultural and rural sectors; (iii) the private sector, domestic traders and farmer’s association and planners; and (iv) all of the groups who are food insecure in the rural and the urban areas. These are the small producers in the rural area involved in crop and animal production under rainfed farming systems.

III. PROJECT RATIONALE

III.1. The existing institutional capacity of the relevant agencies is weak and cannot cope with institutional services needed for the implementation of the new development policies and strategies in the country. The realization of the objectives of the “25-year Strategic Quarter Centennial Plan” (2003–2027), the *Five-Year Agricultural Development Plan* (2003–2007) and the PRPS (2004–2008) requires the strengthening of research and extension services, policy and planning, M&E, and investment promotion. Likewise, the present land tenure system and the land law do not maintain the fragile socio-economic relations in the traditional sector, nor provided incentives for economic utilization of the natural, human and capital resources in the country. Furthermore, the continued recurrent droughts and the associated food insecurity problems experienced in Sudan and particularly in the marginal areas of western and eastern Sudan necessitate the rehabilitation and strengthening of the EWS in Sudan to facilitate prompt adoption of appropriate mitigation measures on time.

IV. PROJECT OBJECTIVES

IV.1. The *overall objective* of the project is to contribute to increased farm income and poverty alleviation by strengthening the institutional capacity of the different governmental and non-governmental institutions in research and extension services, agricultural planning, monitoring (including early warning) and evaluation and investment promotion, reform of land laws, land tenure legislation and land use mapping.

IV.2. The *specific objectives* of the project would be:

- To improve crop productivity through appropriate adaptive agricultural research and extension services;
- To revise and reform land laws and land tenure systems to develop practical legal solutions to secure access to crop land, livestock routes, range and pastures including the provision of adequate and practical dispute resolution mechanisms;
- To provide baseline data and information on crop, animal and forestry resources in the Sudan;
- To revise and improve the Investment Promotion Act and qualify the investment licensing administrative machinery in Sudan;
- To strengthen the capacity of planning, policy, implementation, monitoring and evaluation of development endeavours in Sudan;
- To strengthen the EWS in Sudan to better facilitate prompt mitigation measures in handling of disasters in different parts of the country.

V. PROJECT DESCRIPTION

V.1. The project, to be implemented over a period of *five years*, would have the following components. Each of the components would include human resource development.

Component 1.a: Strengthening Agricultural Research Institutions

V.2. This component would focus on establishing a *Farming Research and Extension System* (FRES) taking into consideration social and economic sustainability aspects when introducing and transferring new technology into an area. The system would strengthen water harvesting research and improve protecting grazing areas by using fire lines.

V.3. The FRES would emphasize a bottom–up participatory approach, creating strong linkages between extension, public administration and policy makers. The component would start on a pilot level to demonstrate and train target groups and personnel to facilitate wide adoption of appropriate technology and improved farming systems. The component would support: (i) A ***breeding programme***, based on the collection of the indigenous germ plasmas and attempt to improve them by selecting for high yielding, resistant–cultivars adaptable to different ecological zones. (ii) A ***conservation and sustenance of natural resources base programme***, based on reducing soil degradation, maintaining livestock–pastures carrying capacity balance, and forest cover. This programme aims at designing research and extension programs that would help to recover the natural resource base with a concomitant retrieval of crop productivity augmented by using water harvesting techniques.

Component 1.b: Strengthening Social Research Institutions

V.4. A ***socio–economic research and studies programme*** is essential since the rural areas lack adequate marketing, storage, credit, transportation and communication facilities. The social services in rural areas are found in the form of few village schools and malfunctioning health centres. The introduction of socio–economic infra–structure in these rain–fed crop production areas would help the small producers to secure their food as they would be able to market surplus food and cash crops, livestock and animal products and buy their basic livelihood needs. Research and studies would include marketing, credit systems, conflict resolution, and local land tenure dispute settlement arrangements. These endeavours would be carried out by agricultural research stations, universities, planning and agricultural economics departments in the Ministries of Agriculture, Animal Resources and Natural Resources and by the *National Centre for Social and Economic Studies* of the *Ministry of Science and Technology* (MoST).

Component 2: Strengthening Agricultural Extension Services and Farmers’ Field Schools

V.5. This component would introduce an effective extension programme for marketing extension and improved marketing organisations. It would focus on the adoption of convenient methods of information transfer of problems and recommended solutions among the tri–partners, the extension agents (official and community), the research centres and the target producer groups. The component would develop demonstration farms and farmer field schools for effective adoption of new technology and improved management practices by target groups. The project would provide adequate facilities to carry out extension service responsibilities in addition to distribution of seeds of improved varieties for multiplication. Moreover, the project would include establishment of local training centres to educate

community members, contact farmers and local leaders on socio-economic and gender analysis and training. The component would introduce an effective extension program for marketing extension and improved community marketing organizations.

Component 3: Strengthening Statistical Services and Analyses Institutions

V.6. This component would rehabilitate and strengthen the institutional capacity of the *Department of Statistics* of the *General Administration for Planning and Agricultural Economics* of the MoAF and the *Department of Statistics* of the federal *Ministry of Animal Resources and Fisheries* (MoARF) and the affiliated department of the relevant state ministries in the Sudan. The project component would ensure staffing of the targeted departments with qualified personnel as a prerequisite and support them with the needed equipment and facilities that will help in carrying out data collection, analyses and publications of results. The component would provide the transportation and camping equipment for undertaking field trips all over the country during certain seasons to conduct field surveys. The project would supply computer facilities, fax machines, photocopiers, cameras, power point facilities, trucks and passenger vehicles, camping tents and utilities. The component would also provide training to the staff members and develop active networking systems. The project would meet the basic needs for publication in form of heavy duty printers for publishing and dissemination of official periodical reports.

Component 4: Undertaking Agricultural Census (Crops, Livestock and Natural Base)

V.7. This component would support the implementation of the already prepared project for an agricultural census in Sudan. The component would include the crop, animal and forest resources data collection. The project would provide the staff and facilities to carry out the collection, processing of data and information. The component would include training of the selected staff for conducting field surveys and feeding of the data to the computer and performing the data analyses. The component would provide office equipment in form of computers, printers, photocopying machines and telecommunication. The component would include the supply of logistics and transportation means for travelling teams in country for collection of data and information through wide spread and far reaching field surveys. Provision would be made for the publication of the final reports and data annexes.

Component 5: Review of Land Tenure Arrangements and Land Laws (including Land Use Mapping)

V.8. This component would focus on conducting a study on the revision of land laws and the land tenure system in the different parts of the Sudan. The study would identify the limiting factors constraining efficient land resource use and resolution of conflict between sedentary crop producers and grazing animal migrating owners. The need for land reform is seen inseparable from the search for a solution to the problems of significantly increasing crop yields significantly and establishing sustainable formal agricultural credit institutions. The legal aspect of land use and land ownership would be addressed by carrying out land use mapping, including the potential areas for return of IDPs, and women rights for registered land. This is important as the map will discern the different boundaries for crop, animal and other natural resource base use. The land use map would also facilitate the development of the investment map for Sudan, which is already prepared for some states.

Component 6: Strengthening Agricultural/Agro-based Business Investment Promotion Capacity

V.9. This project component would provide technical assistance for the revision of the *Investment Promotion Act* of 2003 for agriculture in order to identify weaknesses and suggest measures that would facilitate enhanced inflow of private sector investment in the different potential areas for agriculture in Sudan (see Table 1 below). The project would also conduct a study on reforming the organizational structure of the Department of Agricultural Investment of the *General Administration for Foreign Relations and Bilateral Cooperation* of MoAF and other relevant federal and state ministries involved in private sector investment program: application procedures, allocation of land, granting tax exemption and final approval the enterprise operation. The project component would complete the design of the already existing investment map based on legal land available for private sector use and according to type of investment activity. This map built on the land use map will guide planning of land allocation and choice of appropriate areas for investment.

Table 1: Opportunities to Guide Investors in Crop Production in the Different Regions of Sudan

Sector/Area	Main Suitable Crops	Secondary Crops	Others
Central and Eastern Sudan under rainfall	Sorghum, sesame	Sunflower, cotton, gum Arabic	Guar, safflower
Western Sudan under rainfall	Millet, sesame, groundnut, gum Arabic	Sorghum, rosette, melon seeds	Maize, guar
Northern Sudan under irrigation	Wheat, pulses, vegetables, spices	Citruses and mango	Forage crops, maize, sugar beet
Central Sudan under irrigation	Cotton, groundnut	Sorghum, wheat, sugar cane, forage crops	Sunflower, maize
Source: MoAF			

Component 7: Strengthening of Early Warning System

V.10. This component would focus on extending current information system activities to provide basic data and information on production and distribution of food crops, livestock, their market and trade information, and nutrition assessments. The project would design appropriate methods and techniques for producing more quantitative assessments particularly on the early warning side of food crop monitoring and forecasting.

V.11. Accordingly, this component would strengthen the early warning system of Sudan to meet immediate short term food security concerns and develop a good base for mid term food security development planning. The project component would develop a strong and comprehensive effective network system that ensures prompt and timely distribution of well informed and analyzed data to relevant users and decision makers. Thus, the project would help to develop mitigating measures against sudden food shortages, such as providing food aid in case of temporary food insecurity incidents. The project would provide the information in readily available and relevant format that would facilitate better decision making on food security and emergency operations.

Component 8: Strengthening of Monitoring and Evaluation (M&E) System at Federal and State Levels

V.12. This project component would strengthen the capabilities and responsibilities of MoAF by establishing a centre to deal with the major issues concerning the following aspects: (i) agricultural and rural development planning and policy analysis; (ii) agricultural and rural development monitoring

and evaluation process; and (iii) management information system on agricultural and rural development related activities and commodities.

V.13. The project would link up and coordinate with the respective Agriculture and Livestock Ministries at state level, including the relevant agricultural public institutions, sister *Ministry of Finance and National Economy*, *Ministry of Industry*, *Ministry of Foreign Trade* and the potential financing bodies of the *Central Bank of Sudan*, the *Agricultural Bank of Sudan*, *Animal Wealth Bank*, *Farmers Bank*, and the NGOs.

V.14. The component would include the identification of specific measures that fulfil M&E functions. The component would design and maintain detailed record of physical and financial performance, design measurable indicators to assess progress of projects, information for network dissemination and other users and provide periodic reports on projects performance and suggested logical options for reform requiring appropriate prompt decision making. The project would provide basic equipment and necessary facilities (computers, vehicles, and telecommunication) needed for the function of the Unit. Basic training material and equipment for training in policy analysis, planning, monitoring and evaluation.

VI. INDICATIVE COSTS

VI.1. The project cost are estimated at US\$50 million over a five-year implementation period. Table 1 below gives the indicative estimated costs by component and year.

Table 1: Project Cost Summary by Component and by Year						
Component	Cost in US\$ million					
	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Strengthening Agricultural and Social Research Institutions	4.90	5.70	2.50	1.70	1.70	16.50
Strengthening Extension Services and FFS	0.96	1.02	0.48	0.32	0.32	3.10
Strengthening Statistical Services and Analyses Institutions	0.81	0.95	0.40	0.27	0.27	2.70
Undertaking Agricultural Census	2.40	2.80	1.20	0.80	0.80	8.00
Undertaking Land Legislation and Land Use Mapping	1.10	1.30	0.55	0.37	0.38	3.70
Strengthening Agricultural/Agro-based Business Investment Promotion Capacity	1.10	1.30	0.55	0.37	0.38	3.70
Strengthening of Early warning system	1.25	1.47	0.62	0.42	0.42	4.18
Strengthening of Monitoring and Evaluation (M&E) System at Federal and State Levels	2.45	2.85	1.22	0.80	0.80	8.12
Total	14.97	17.39	7.52	5.05	5.07	50.00

VII. PROPOSED SOURCES OF FINANCING

VII.1. The project would be submitted for finance through grants and soft loans from international and regional organizations including *Islamic Development Bank*, *African Development Bank*, the EU, IFAD, UNDP, the *Arab Fund for Economic and Social Development*, and from bilateral sources of partner countries.

VIII. PROJECT BENEFITS

VIII.1. **Better informed stakeholders**, including: (i) government and non government agencies; (ii) international organizations and foreign donors; (iii) rural crop producers and livestock owners’ communities; and (iv) national and foreign private sector investors.

VIII.2. **Improved livelihoods of the rural population** through: (i) improved technology development and transfer; (ii) better land tenure system; and (iii) promotion of private sector investments in agriculture.

IX. IMPLEMENTATION ARRANGEMENTS

Table 2: Key Institutions for Project Implementation		
MAP Intervention Area	Lead Agency	Participating Partners
Agricultural Research	ATRC	MoAF, MoAW, MoIWR, SMAAWNR,
Social Research	MoAF	CESS, MoAW, SMAAWNR
Agricultural Extension	MoAF	MoAF, MoAW, MoIWR, SMAAWNR,
Human resources development	MoAF	MoAF, MoAW, MoIWR, SMAAWNR,
Agricultural statistics	MoAF	MoAF, MoAW, MoIWR, SMAAWNR,
Agricultural census	MoAF	MoAF, MoAW, MoIWR, SMAAWNR,
Land laws, land tenure and land use mapping	MoAF	MoAF, MoAW, MoIWR, SMAAWNR,
Agriculture/agro-based business Investment	MoAF	MoAF, MoAW, MoIWR, SMAAWNR,
Early warning	HAC	MoAF, MoAW, MoIWR, SMAAWNR,
Monitoring and Evaluation	MoAF	MoFNE, MoAW, MoIWR, SMAAWNR,
Community structures	MoAF	MoFNE, MoAW, MoIWR, SMAAWNR,

X. TECHNICAL ASSISTANCE REQUIREMENTS

X.1. There has been substantial technical support so far from FAO and IFAD. Still, there are clear gaps and needs for short- and long-term technical assistance to effectively set up a sustainable MIS. Technical Assistance would be needed in the following areas:

- Human resources development and other institutional capacity and structures building;
- Adaptive research approach;
- Technology transfer and community structure building;
- Land laws and land tenure;
- Monitoring and evaluation;
- Investment promotion laws and structures.

XI. ISSUES AND PROPOSED ACTIONS

XI.1. **Legal, Policy and Regulatory Framework.** Difficulty to implement federal policies and legislation over the state governments hampers the implementation of federal policies and programs.

XI.2. ***Financial Sustainability.*** Limited budgets to meet maintenance and operation costs of ongoing and proposed projects result in failure to meet objectives of agricultural economic reform programmes.

XI.3. ***Limited Capacity.*** Inadequate number of qualified personnel and professional staff of ministerial planning and services, research and regulatory services may delay implementation of projects and programs.

XI.4. ***Civil Instability.*** The present continued uprising in Western Sudan (Darfur region) and expected uprisings in Eastern Sudan (Kassala and the Red Sea Regions) and the preliminary settlement of disputes in the Southern region and South Kordofan region after signing of the peace pact may delay the implementation of projects and programmes.

XII. POSSIBLE RISKS

XII.1. ***Extended delays*** in attracting the foreign donors and the private sector to participate in financing and implementing the proposed project activities.

XII.2. The current ***civil strife*** in western Darfur region and the expected one in parts of eastern Sudan could undermine institutions activities in those parts of the country.

Appendix 1: Map of Sudan



Appendix 2: Tables

Table 1: Agro ecological Zones in the Sudan			
Agro-ecological Zone	Area ('000 km ²)	%	Appropriate crop
Desert (16°–22°N)	726.00	29	Sorghum, maize*, millet, wheat, barley*
Semi-desert (14°–16°N)	490.00	20	Sorghum, maize*, millet, wheat, barley*, rice.
Light savannah rain fed (10°–14°N)	68.40	27	Sorghum, millet, maize*, rice, wheat, barley*, oilseeds.
High savannah rain fed (4°–10°N)	348.70	14	Sorghum, millet, maize*
Swamps	246.00	9.7	Sorghum, millet, maize*
Highlands	7.75	0.3	*Mediterranean vegetables and fruits
Total	2,502.88	100.0	
Note: all areas north of 14°N need irrigation. * Potential crops or grown on limited scale.			
Source: MoAF, MoAW			

Table 2: Summary of Agricultural Research Programs				
No.	Research Program	Description	Benefits	Location
1	Sorghum research	Improve varieties, cultural practices and pest management	Raise productivity	Gedaref, Kordofan, Darfur, Southern region
2	Millet research	Improve varieties and cultural operations	Breeding high yielding resistant to millet head worm, water efficient use	North Kordofan, North Darfur
3	Wheat research	Improve varieties and cultural operations and physiological studies	Raise productivity and establish standards for selecting promising varieties	Darfur
4	Maize	Ditto	Ditto	South Kordofan, Southern region
5	Cotton	Ditto	Ditto	Irrigated and rain fed areas
6	Groundnut	Ditto	Ditto	Irrigated and rain fed areas
7	Sesame	Ditto	Ditto	Irrigated and rain fed areas
8	Sunflower	Ditto	Ditto	Irrigated and rain fed areas
9	Food legumes	Ditto	Ditto	Irrigated and rain fed areas
10	Horticultural crops	Ditto	Ditto	Irrigated and rain fed areas
11	Date palm	Ditto	Ditto	Irrigated areas
12	Food research	Food processing	Raise income and nutritional level	Irrigated and rain fed areas
13	Range and pastures	Ditto	Ditto	Irrigated and rain fed areas
14	Gum Arabic	Ditto	Ditto	Rain fed areas
15	Agricultural engineering	Identify suitable technology to surrounding environment	Improve productivity, reduce cost and increase income	Irrigated and rain fed areas
16	Socioeconomic research	Evaluate factors affecting technology development and transfer	Enhance adoption of improved technology and raise income	Irrigated and rain fed areas
17	Forestry research	Ditto	Ditto	Irrigated and rain fed areas
18	Desertification and dry lands	Ditto	Ditto	Irrigated and rain fed areas
19	Land and water	Ditto	Ditto	Irrigated and rain fed areas
20	Crop protection	Ditto	Ditto	Irrigated and rain fed areas
21	Plant genetic resources	Ditto	Ditto	Irrigated and rain fed areas
22	Tissue culture	Ditto	Ditto	Irrigated and rain fed areas
23	Seed maintenance and propagation	Ditto	Ditto	Irrigated and rain fed areas
24	Southern Sudan research programs	Ditto	Ditto	Irrigated and rain fed areas
Source: MoST, 2003.				

Table 3: The <i>Animal Resources Research Corporation</i> (ARRC) Programme	
Area/Theme	No. of projects
<i>Animal health</i>	
Vaccines production	6
Disease	12
Camel	2
<i>Subtotal</i>	<i>20</i>
<i>Animal production</i>	
Animal breeding	3
Animal feeds	5
Natural pasture improvement	2
Product and processing	2
<i>Subtotal</i>	<i>12</i>
<i>Wild life</i>	
Wildlife survey	3
National parks	5
Production investment	2
<i>Subtotal</i>	<i>10</i>
<i>Fisheries</i>	
Natural fisheries	6
Fish technology and processing	3
Aquaculture	2
<i>Subtotal</i>	<i>11</i>
<i>Capacity building</i>	<i>6</i>
Total	59
Source: MoST, 2003.	

Table 4: Input Needs for M&E	
Item	
Training Programs	
– Training and fellowships on agricultural and rural development planning and monitoring aspects;	
– Workshops and seminars.	
Equipment	
– Computer and telecommunication network for the Unit and the affiliated branches including scanners, UPS, printers, coloured photocopiers, faxing machines;	
– Vehicles for monitoring and evaluation;	
– Supplies and accessories.	
General Operating Expenses	
– Official travels;	
– Contractual services;	
– Operation and maintenance.	
Reports & Publications	
– Agric. Production and Marketing Information Bulletins;	
– Periodicals on Food Security situations;	
– Other publications & studies.	

Table 5: Proposed Components for Institutional Capacity Building

MoAF
Reactivation of the Technology Transfer and Agricultural Extension General Administration
Institutional support to the General administration for Foreign Relations and Bilateral Cooperation in Agriculture
MoARF
Animal statistics and information
Training
Source: Five-Year Plan (2003–2007), MoAF, MoARF..

Table 6: Proposed Budget for Institutional Capacity Building of the MoAF in Southern Sudan

Project	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Agricultural services and technology transfer	0.58	0.58	0.58	0.58	0.58	2.90
Institutional capacity building	0.12	0.12	0.12	0.12	0.12	0.60
Total (US\$ million)	0.70	0.70	0.70	0.70	0.70	3.50
Source: Five-Year Plan (2003–2007), MoAF.						

Appendix 3: List of the Most Relevant Laws

1. **Land Resettlement and Registration Act, 1925.** Includes rules and procedures for the gazetting of land for mainly urban settlement and resettlement, surveying of plots and demarcation, land (lease) registration, transfers of leasehold land, issuance of land certificates (including provisions for the destruction and loss of documentation), fraud and erroneous registration.
2. **Land Acquisition Act, 1930.** Procedures for the acquisition of land for public purposes (mainly for urban settlement); expropriation and compensation mechanisms.
3. **Unregistered Land Act, 1970.** Although this act has been repealed, it still reflects the present GoS philosophy concerning land:
 - all land that is not registered before the enactment of this law becomes the property of the government by default;
 - cuts heavily into rural communities’ land rights and challenges communal and tribal ownership;
 - provides the government with a tool to facilitate the acquisition of large tracts of land for agricultural schemes, at the expense of rural residents and especially pastoralists;
 - transfers all unregistered land to the government, assigning the power of transfer to any public or national enterprise, as well as to farmers on a leasehold basis;
 - a ten–article act devoid of practical guidelines on the modalities for its implementation.
4. **Civil Procedure Act, 1983.** Sets the legal scene for arbitration of conflicts but seriously lacks details on procedures.
5. **Civil Transaction Act, 1984 and its Amendment, 1990**
 - Repeals the 1970 *Unregistered Land Act*, but is more comprehensive, giving some guidelines and details for its practical implementation;
 - Identifies different forms of land and property rights such as: land held in undivided shares, family ownership, possession of unclaimed property, ownership of usufruct rights over land and property, grants of usufruct rights, easement rights, acquisition of ownership by accession (good faith and bad faith article 608), possession and succession;
 - States that registered usufruct rights are equal to registered ownership;
 - Considers the following issues, pertinent to securing land tenure:
 - transfer and inheritance of rights;
 - compensation requirements for land appropriated by the state;
 - granting of land leases to cooperative bodies (communities and IDPs);
 - conditions for obtaining usufruct rights;
 - possibility of registering easement rights (rights of way);
 - Legalizes elements of *shari’ah* (Islamic) law;
 - Legally confirms the role of the state as a landowner and a land manager;

- The Amendment excludes any consideration of a legal or other suit or procedure in respect of any subject to do with proprietorship of land owned by the state.

6. Urban Planning and Land Disposal Act, 1994:

- Lays out the procedures and institutional responsibilities for urban planning, including the delimitation of town and village boundaries, needs for gazetting;
- Needs to be implemented in conjunction with the 1930 Land Acquisition Act, but includes further details on:
 - Expropriation of land for public interest, including settlement;
 - Compensation modalities for expropriated land (25 percent rule of compensation in kind);
 - Disposal of government land through leases;
 - Procedures for acquiring land leases.

7. The Constitution, 1998. Article 23: free choice of movement and settlement.

Customary Laws:

Customary legislation is ethnic-specific, but may also show differences at lower sub-tribe levels. Dinka and Nuer customary legislation stands out as predominant and influential. Customs in Equatoria are more diversified, with an amalgam of different tribes being present.

Specific customs dealing with land and property issues and recommendations for their future use are discussed when appropriate under the case studies. The Dinka customary law, presenting the customs of the major population group in the south, seems to be particularly influential, warranting further attention.