

THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
ENVIRONMENTAL PROTECTION AUTHORITY

THE 3rd NATIONAL REPORT ON THE IMPLEMENTATION OF
THE UNCCD/NAP IN ETHIOPIA

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ACRONYMS

AAE	Action Aid Ethiopia
ADLI	Agricultural Development Led Industrialization
ASARECA	Association for Strengthening Agricultural Research in Eastern & Central Africa
ATEVT	Agricultural, Technical, Vocational and Educational Training
BOANR	Bureau of Agriculture and Natural Resources
CBOs	Community Based Organizations
CCAs	Crop Conservation Associations
CGB	Community Gene Banks
CCF2/ESDM	Country Cooperation Framework II/Environment and Sustainable Dry lands Management
COP	Conference of Parties
CSRP	Civil Service Reform Program
CVI	Chronic Vulnerability Index
DCG	Dry land Coordination Group
DPCC	Disaster Prevention & Preparedness Commission
EAPGREN	EASTERN Africa Plant Genetic Resources Network
EARO	Ethiopian Agricultural Research Organization
EEMCY	Ethiopian Evangelical Church Mekane Yesus
EENGO	Ethiopian Environmental NGO
EIA	Environmental Impact Assessment
EMA	Ethiopian Mapping Authority
ENCCD	Ethiopian NGOs/CBOs Network for the Convention Combating Desertification
ENSAP	Eastern Nile Subsidiary Action Program
EPA	Environmental Protection Authority
EPC	Environmental Protection Council
ERTTP	Ethiopian Rural Travel and Transport sub-Program
ESDM	Environment and Sustainable Dry land Management
ESTC	Ethiopian Science & Technology Commission
ETC	Ethiopian Telecommunication Corporation
EWCO	Ethiopian Wildlife Conservation Organization
FAO	Food & Agricultural Organization
FFE	Forum For Environment
FIA	Federal Investment Authority
FSCB	Food Security Coordination Bureau
FSCPDP	Food Security Coordination Programme and Disaster Prevention Office of Amhara National Regional State
FTC	Farmer Training Centre
GEF	Global Environmental Facility
GM	Global Mechanism
IBC	Institute of Biodiversity Conservation
ICARDA	International Centre for agricultural Research in Dry Area
ICRISAT	International Crop Research Institute for Semi-Arid Tropics

IDA	International development Assistance
IFAD	International Fund for Agricultural Development
IGAD	Inter-Governmental Action for Development
IITA	International Institute for Tropical Agriculture
ILCA	International Livestock Center for Africa
ILRI	International Livestock Research Institute
ISD	Institute for Sustainable Development
ISWC	Indigenous Soil and Water Conservation
MERET	Managing Environmental Resources to Enable Transitions
MoE	Ministry of Education
MoFA	Ministry of Federal Affairs
MoID	Ministry of Infrastructure Development
MoWR	Ministry of Water Resources
MWRC	Melka Worer Research Center
NAP	National Action Program
NBI	Nile Basin Initiative
NCA	Norwegian Church Aid
NCB	National Coordinating Body
NDF	National Desertification Fund
NELSAP	Nile Equatorial Lakes Subsidiary Action Program
NGOs	Non-Governmental Organizations
NMSA	National Metrological Services Agency
NORAGRIC	Norwegian agricultural Aid
NTEAP	Nile Trans-boundary Environment Action Program
ORDA	Organization for Rehabilitation & Development in Amhara
PCDP	Pastoral Community Development Project
PDF	Project Development Fund
PGE	Pine for Green Ethiopia
POP	Persistent Organic Pollutant
RADPS	Rural and Agricultural Development Policy and Strategy
RAPs	Regional Action Plans
REST	Relief and Environment Society of Tigray
RSDP	Road Sector Development Programme
SAP	Subsidiary Action Program
SDPRP	Sustainable Development Poverty Reduction Program
SNNPRS	Southern Nations & Nationalities Peoples Regional State
SRAP	Sub-Regional Action Plan
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Convention on Climate Change
UNHCR	United Nations High Commission for Refugee
UNSO	United Nations-Sahel Organization
USD	United States Dollar
VAM	Vulnerability Analysis & Mapping

WB	World Bank
WFP	World Food Programme
WSDP	Water Sector Development Program
WVI	World Vision Ethiopia

1. Executive Summary

Focal Institution

Name of focal point	Environmental Protection Authority
Address including E-mail address	P. O. Box 12760 Tel. 251-1-464569 Fax 251-1-464882 E-mail: esid@telecom.net.et Addis Ababa, Ethiopia
Country-specific websites relating to desertification	http://www.epa.gov.et

Status of NAP

NAP activities	Status
Date of validation	Not validated
NAP review (s)	Not reviewed
NAP has been integrated into SDPRP	Not yet, the process to integrate NAP into SDPRP has started.
NAP has been integrated into the National Development Strategy	Currently under way
NAP implementation has started with or without the conclusions of partnership agreements	Yes
Expected NAP validation	2005
Final draft of a NAP exists	Yes
Formulation of a draft NAP is under way	Completed
Basic guidelines for a NAP have been established	No

Member of SRAP/RAP

Name of Sub Regional and/or Regional Cooperation Framework	Involvement specifically in topics such as water harvesting techniques, soil erosion etc.
IGAD	Trans-boundary Natural Resource management like water development, pasture management, etc.

Composition of the NCB

Name of institution	Government (✓)	NGO (✓)	The person represented Male/Female
1. Environmental Protection Authority	✓		M
2. Ministry of Agriculture & Rural Development	✓		M
3. Ministry of Water Resources	✓		M
4. Ministry of Education	✓		F
5. Ministry of Foreign Affairs	✓		M
6. Ministry of Trade and Industry	✓		M
7. National Metrological Service Agency	✓		F
8. Disaster Prevention and Preparedness Commission	✓		M
9. Ethiopian Science and Technology Commission	✓		M
10. Alemaya University	✓		M
11. Addis Ababa University	✓		M
12. Mekelle University	✓		M
13. Ethiopian Agricultural Research Organization	✓		M
14. Prime Minister's Office	✓		M
15. Women's Affairs Office	✓		F
16. Refugees and Returnees Commission	✓		M
17. ENCCD		✓	M
18. FFE		✓	ND
19. SLUF		✓	ND
20. CRDA.		✓	ND

Total number of NGOs accredited to the process

Has an NGO National Coordinating Committee on desertification been established; if yes, how many NGOs or Civil Society Organizations participate in it?	Yes, 76 NGOs/CBOs have been participating
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Total number of acts and laws passed relating to the UNCCD are more than hundred.

Five most relevant laws and/or regulations are:

S/N	Title of the Laws	Date of adoption
1	Environmental Policy of Ethiopia and Conservation Strategy of Ethiopia	1997
2	Rural and Agricultural Development Policies and Strategies of Ethiopia	2002
3	Proclamation for the Establishment of Environmental Organs	2002
4	Environmental Impact Assessment Proclamation	2002
5	Pollution Control Proclamation	2002

The Consultative Process

Number of partnership agreements that have been concluded and/or are being initiated within the framework of the UNCCD

S/N	Official Title of Partnership	Donor (s), International Organization(s), and/or Agencies of the UN	Date Of Expected Conclusion
1	CCF2- ESDM	UNDP	2006
2	Preparatory Process for Partnership Framework Towards Resource Mobilization for Implementation of Combating Desertification and Mitigate the Effects of Drought.	GM	2005
3	Mille Sustainable Dry Lands Project	UNDP	2008

List of Consultative Meetings on UNCCD Implementation

S/N	Name of Consultative Meetings	Date/Year	Donor Countries Involved	International Organizations or Agencies of the UN System Involved
1	Workshop on the Synergistic Implementation of the three Rio Conventions	April 29- May1 st , 2004	-	UNDP

Name of country, which has taken over the role of *Chef de file*: ***The Norwegian Government has recently accepted to serve as Chef de file for Ethiopia.***

**Eleven Projects currently under implementation within the framework of
NAP/SRAP/RAP/ and directly or indirect related to the UNCCD**

No.	Name of projects	Time frame	Partners involved	Leading Institution	Overall budget and source
1	Small-Scale Irrigation and Agricultural Development Project	1999-2005	<ul style="list-style-type: none"> • MoWR, IFAD, France, Ireland • Amhara, Oromiya and Tigray National Regional States and SNNP Regional State 	MoWR	<ul style="list-style-type: none"> • 1.32 million USD (Ireland govt.) • 14.25 million USD (France Govt.) • 31.46 million USD (IFAD)
2	Food Security and Agricultural Development Program	2004-06	<ul style="list-style-type: none"> • UNDP • Federal Government institutions • Tigray, Amhara, Oromiya and SNNP Regional states 	FSCB	<ul style="list-style-type: none"> • 5 million USD
3	2000 Food Security Program	2000-2004	<ul style="list-style-type: none"> • EU • Amhara and Tigray Regional States 	FSCB	<ul style="list-style-type: none"> • 40 million EURO
4	Managing Environmental Resources to Enable Transitions to More Sustainable Livelihoods /MERET/	2003-06	<ul style="list-style-type: none"> • WFP • Dire Dawa Provisional Administration, Amhara, Tigray, Oromiya, Somali National Regional States and SNNP Regional state 	WFP	<ul style="list-style-type: none"> • 43.1 million USD/WFP/ • 7.95 million USD /Govt./
5	Environment and Sustainable Dry lands Management Program of CCF2	2003-06	<ul style="list-style-type: none"> • UNDP • EPA • All Regional States and City Administration 	EPA	<ul style="list-style-type: none"> • 4.5 million USD
6	Pastoral Communities Development Project	2003-08	<ul style="list-style-type: none"> • WB • IFAD • Ministry of Federal Affairs • Somali, Afar, Oromiya National Regional State and SNNP regional state 	MoFA	<ul style="list-style-type: none"> • 60 million USD

No.	Name of projects	Time frame	Partners involved	Leading Institution	Overall budget and source
7	Energy Access Project	2004-07	<ul style="list-style-type: none"> • WB • MOARD • All regional states and Dire- Dawa Provisional Administration 	MOARD	<ul style="list-style-type: none"> • 16.36 million USD (World Bank) • 2.64 million USD/Govt./
8	Rural Households End-Use Efficiency and Improvement of Energy Access Project	2003-07	<ul style="list-style-type: none"> • WB • EREDPC 	EREDPC	<ul style="list-style-type: none"> • 3 million USD
9	FARM Africa/SOS Sahel Participatory Sustainable Forest Management	2002-06	<ul style="list-style-type: none"> • FARM Africa/ SOS Sahel • EU • DFID • DSW 	FARM Africa/ SOS Sahel	<ul style="list-style-type: none"> • 3 million EURO
10	Mareka-Gena and Alaje woreda Food Security Program	2001-04	<ul style="list-style-type: none"> • Action Aid Ethiopia • European Union 	Action AID	<ul style="list-style-type: none"> • 1.5 million EURO
11	Greening	1998-04	<ul style="list-style-type: none"> • FSCPDPO 	ORDA	<ul style="list-style-type: none"> • 5 million USD

For more information see Annex III

2. Participatory Process for the Preparation and Implementation of National Action Plan (NAP)

Significant strides have been made to implement the UNCCD. The finalization of the NAP through wider stakeholder participation including NGOs and CBOs, government institutions and concerned civil societies is one of the major achievements that paved the way for the UNCCD/NAP implementation in Ethiopia.

To realize and promote the objectives of NAP, various measures have been undertaken, including public awareness, mainstreaming of gender in the NAP, establishment of NGOs/ CBOs Network for Combating Desertification and Mitigating the Effects of Drought, and formulation of the RAPs. A Road Map for NAP implementation has also been. At the federal level, some government institutions have already started to establish Environment Unit that deal with, environmental issues, including NAP.

The regional states and the city administrations have been contributing to the process by providing resources for the establishment and functioning of their respective environmental protection institutions. These institutions are engaged in promoting awareness and spearheading environment policy and RAP implementations. Various NGOs have also been playing a key role in the implementation of NAP. They are active in the implementation of grass root projects and the provision of capacity building supports at national, regional and local levels.

A national workshop on “Synergistic implementation of the UNCCD, UNCBD, and UNFCCC was conducted in Addis Ababa between April 29 and May 1, 2004. The workshop concluded, among others, that the synergistic implementation of the three conventions would harmonize the implementation process and utilize scarce resources efficiently. In addition, the workshop recommended that EPA, together with IBC and NMSA, should assume a leading role to realize the synergy at local levels.

In order to further enhance the participatory process in the implementation of NAP at all levels, EPA, as a leading institution for the convention, has been relentlessly seeking contributions among the wider scope of stakeholders. However, in spite of such efforts and achievements recorded so far, there still exist some drawbacks with regard to the overall implementation of the NAP priority areas. These are: lack of networking or information exchange, insufficient financial support, inadequate donor involvement, and difficulty in mainstreaming NAP into the on-going national programmes and strategies, etc. To ameliorate these constraints, there is a need for targeted awareness raising for donors and government decision makers, finalization of Road Map, network establishment among the key partners of NAP implementers, and the establishment and operation of National Desertification Fund (NDF).

3. Consultative Process and Partnership Agreements

The establishment of an organized structure is necessary as a primary step to co-ordinate the overall activities of NAP formulation and implementation. At a national level, a steering committee composed of key government institutions, NGOs, research organizations, academia and donor communities have already been established. The donor communities are represented by UNDP. A programme management team that deals with day-to-day activities of the convention is also established within the EPA. Moreover, Partnership agreement for the implementation of integrated community based pilot projects, Convening Donors Forum, and NAP mainstreaming into SDPRSP is reached between the Ethiopian Government and the Global Mechanism.

3.1. The Consultative Processes

Land degradation and poverty are interactive phenomena leading into a spiral of environmental and human calamity. The multi-stakeholder nature of poverty reduction and combating land degradation calls for the need of coordinated efforts among the various partners. With this understanding a significant move has been made both on the part of the government and the private sector. A constructive dialogue concerning the way forward to bring rapid pro-poor and sustainable economic growth in which the importance of the private sector's role is fully understood is on progress. The establishment of the public-private consultative forum constituting high-level government officials and representatives of the private sector is a major step forward to this end.

The Ethiopian Government also recognizes NGOs/CBOs as important development partners. NGOs/CBOs are playing a considerable role in several environmental rehabilitation and livelihood improvement activities in the country. Thus their experiences and resources should be brought in and coordinated with the NAP. In this regard, EPA has already established an NGO/CBO platform for the formulation and implementation of the NAP. Furthermore, the Dry land Coordination Group (DCG) of Ethiopia in collaboration with the Ethiopian Environmental Protection and the Ministry of Foreign Affairs of Norway, with the financial support from NORAD, has been engaged in building the capacity of the country to implement the UNCCD/NAP and address dry lands development issues. So far, several awareness-raising activities and many technical studies in the implementation of UNCCD/NAP have been undertaken. Assessment of civil society participation, preparation of indicators for promoting and monitoring civil societies participation, and the organization of five training of trainers workshops in UNCCD/ NAP implementation which aimed at building the capacity of various concerned NGOs/CBOs and governmental organizations are also some of the outputs of the initiative.

In the context of establishing the nexus between policies and development programmes on the one hand, and poverty on the other, issues of food security and agricultural programmes have been well reflected, and areas requiring actions are projected in the SDPRP. Consequently, it is therefore acknowledged that food security programmes are subsets of poverty reduction programme. In recognition of this and to strengthen the partnership between government and development partners, a series of consultative processes to address the challenges of food

insecurity in Ethiopia had taken place. These forums concluded the need for renewed commitments for a “New Coalition for Food Security in Ethiopia” which is aiming at achieving a major turn of the food insecurity challenges within a time-frame of three to five years.

3.2. Partnership Agreements with Development Partners

Devolution of power to districts and local level, among others, is expected to facilitate the involvement of the development partners in the national economic development, poverty reduction and environmental rehabilitation processes.

On the other hand, the RAPs, which are part and parcel of the NAP, are expected to be finalized by all regional states (three regions have already finalized). RAP is expected to elaborate programme management and implementation arrangements including identification of the roles of development actors in the NAP implementation process at their respective regions.

One of the development partners, the UNDP, has already been providing support to the implementation of the UNCCD/ NAP in Ethiopia. Currently, the UNDP through its Country Cooperation Framework II (CCF-2) for 2003-2006 has allocated 4.5 million USD for the Environment and Sustainable Dry land Management Programme. One of the major outputs of this programme is the implementation of the NAP. In addition, there are various on going bilateral and multilateral partnership agreements that directly or indirectly contribute to NAP implementations (see annex III).

4 Strategies and Priorities Established Within the Framework of Sustainable Development Plans and Policies

4.1. The Constitution of the Federal Democratic Republic of Ethiopia

The supreme law of the land, the Constitution of The Federal Democratic Republic of Ethiopia, (Proclamation No.1/1995) contains provisions, which recognize the importance of the environment protection and the need for its proper management. These provisions are a major springboard for subsequent legislations in the environmental management, as well as for mainstreaming environmental sustainability in the political, social and economic development sectors. Further steps such as good governance, devolution of power to district level, and issue of participation and sharing of revenues among the different levels of government have been adequately tackled in legislations. There is now a favorable atmosphere for assisting and empowering grass-root communities to initiate local environmental management including combating desertification and mitigating the effects of drought.

4.2. Regional Governments Establishment Proclamation (RGEP)

The Proclamation No. 41/1993, enacted on January 20, 1993, recognizes the right of nations, nationalities and peoples to self-determination and to determine their own affairs by themselves as affirmed by the Transition Period Charter of Ethiopia and later by the Constitution.

The Executive Organs of the regional governments constitute several line bureaus parallel to that of the Executive Organs of the Federal Government. This kind of regional political organizational structure underpins major transformation in undertaking environmental and development issues at district and grass root levels.

4.3. The Environmental Policy of Ethiopia

The Environmental Policy of Ethiopia [EPE], which was approved on April 1997, constitutes eleven-sectoral and eleven cross-sectoral policy elements. Its overall policy goal is “to improve and enhance the health and quality of life of all Ethiopians, and to promote sustainable social and economic development through the sound management and use of natural, human-made and cultural resources and the environment as a whole, so as to meet the needs of the present generation without compromising the ability of future generations to meet their own needs”.

EPE emphasize the need for arresting land degradation. The policy's section on Soil Husbandry and Sustainable Agriculture, Forest Wood Land and Tree Resource, Genetic Species and Ecosystem Biodiversity, Water Resource, Energy and Mineral Resource address the issue of combating desertification.

4.4 The Conservation Strategy of Ethiopia

The Conservation Strategy of Ethiopia (CSE) provides an adequate umbrella strategic framework, detailing principles, guidelines and strategies for the effective management of the environment. It also elaborates state of resource bases of the country, as well as the institutional arrangement and action plans for the realization of the strategy.

5. Implementation of Framework Policies, Strategies and Laws

5.1 Policies and Strategies

5.1.1 Agricultural and Rural Development Policies and Strategies

Agricultural and Rural Development Policies and Strategies [RADPS] was adopted by government in March 2002. In the context of combating desertification and mitigating the effects of drought, the most relevant principles of this Policy and Strategy are: improving farming skills; improving the supply, replication and dissemination of technologies; ensuring access to land and tenure security; resolving problems of drought prone regions; improving the agricultural marketing systems; promoting rural finance; developing the rural energy sector and rural telecom development (For further information see Annex II.)

5.1.2 The National Capacity Building Programme (NCBP)

The National Capacity Building Programme (NCBP) was adopted by the government on December 1998. The programme aims at building: the necessary capacity to realize the Agricultural Development-led Industrialization Strategy at all levels; the capacity for an

accelerated and private sector-led agric-based industrialization in the country by creating among others, conducive policy and institutional environment, and minimizing adverse impact of market failure; and the institutional capacity of the public, private and civil societies in discharging their respective roles in the democratization process.

5.1.3 Sustainable Development and Poverty Reduction Strategy Programme (SDPRP)

The Sustainable Development and Poverty Reduction Strategy Programme [SDPRP], issued on July 2002, outlines the fundamental development objectives of the government of Ethiopia to build a free-market economic system that will enable the economy to develop rapidly, and the country to extricate itself from poverty and dependence on food aid, where the poor people are the main beneficiaries of the economic growth.

The programme recognizes the importance of environmental protection as a prerequisite for sustainable development and treats it as crosscutting issue. Accordingly, it points out three priority areas for action: strengthening and expanding on-going efforts to address land degradation, deforestation, overgrazing, soil erosion, loss of soil fertility and the disruption of the hydrological cycle, by giving special attention to highly degraded, drought prone and food insecure areas; strengthening regulatory and institutional capacity; and strengthening the measures currently under implementation to preserve, develop, manage and sustainably use biodiversity resources.

5.1.4 Food Security Strategy (FSS)

The Food Security Strategy (FSS), adopted in March 2002, is basically derived from the country's rural development policy. It aims at increasing domestic food production; ensuring access to food for food deficit households; and strengthening emergency response capabilities. It is recognized that soil, water, and vegetation are the main asset base of both the farming community and economy of the country, without which the achievement of food security is unlikely. Water and natural resource conservation based agricultural development is considered as a centerpiece of the strategy. It has also given due attention to the problems of environmental degradation, population pressure, and land shortage particularly in moisture deficit highland areas of the country. Accordingly, water harvesting, proper land utilization and environmental rehabilitation are identified as the top priority areas of intervention. These help to combat drought and famine, which are induced by negative environmental manifestations such as desertification and land degradation. The strategy apparently considers the importance of conservation, rehabilitation and restoration of natural resources as an entry point to change the existing embarrassing livelihood situation of rural household economy.

5.1.5 Ethiopian Water Sector Strategy (EWSS)

The Ministry of Water Resources (EWSS) is pursuing a sector reform agenda in the water sector. The reform aims at creating secure basis for sustainable development and management of the country's water resources. One important element of this agenda is the formulation of EWSS issued in 2001. The main objective of the water strategy is to translate the National Water Resources Management Policy into action. Towards this, issues of water resources development,

transboundary water, finance and economics, research and development, stakeholders' participation, gender mainstreaming, disasters and public safety, environmental and health standards, technology and engineering, hydropower development strategy, water supply and sanitation, and irrigation development strategic directions have been adapted.

5.1.6 Environmental Impact Assessment (EIA) Proclamation

Proclamation No.299/2002, enacted in 2002, empowered the EPA to prepare procedure, regulations, guidelines and standards to effectively implement and enforce EIA proclamation. Environmental guidelines are among the tools for facilitating the inclusion of environmental issues and principles of sustainable development into development proposals. To guide mainstreaming of the principles of sustainability into sectoral projects, sectoral environmental impact assessment guidelines such as gridlines on agriculture, transport, industry, tannery and settlements have been prepared.

In addition to these, a general guideline for facilitating EIA in all sectors has been prepared. The fundamental purpose of this guideline is to ensure that proponents, the government and all other interested and affected parties have the opportunity to participate meaningfully in the EIA process. Since the guideline explicitly states the responsibilities of each party, it helps to eliminate problems that may arise from lack of understanding of the process, from acting beyond one's mandates and responsibilities as well as from negligence.

5.1.7 Environmental Organs Establishment Proclamation

Environmental Organs Establishment Proclamation, Proclamation No. 295/2002 was enacted in 2002. This proclamation repealed Proclamation for the Establishment of the EPA, Proclamation No. 9/95. According to this proclamation, EPA is accountable to the Prime Minister. It has also established the Environmental Protection Council (EPC). EPC oversees EPA's activities, as well as the activities of sectoral agencies and environmental units with respect to environmental management. It also ensures coordination among sectoral ministries and agencies on environmental matters. The proclamation stipulates the mandatory need for the establishment of environmental organs by regions. Mandates of the regional environmental organs are to enable regions to coordinate environmental activities, avoid duplication of efforts and improve the dissemination of environmental information. This proclamation also mandates the EPA to undertake studies and research, to develop action plans etc, in the area of combating desertification.

5.2. Institutional Measures

Government and other institutions, which have got significant contributions to combat desertification and mitigate the effects of drought, are briefly discussed here under.

5.2.1 Environmental Protection Authority

Environmental Organs Establishment Proclamation, Proclamation No. 295/2002 was enacted in 2002. This proclamation repealed Proclamation for the Establishment of the EPA, Proclamation

No. 9/95. According to this proclamation EPA is accountable to the Prime Minister. This proclamation has also established the Environmental Protection Council (EPC). EPC oversees EPA's activities, as well as the activities of sectoral agencies and environmental units with respect to environmental management. It also ensures coordination among sectoral ministries and agencies on environmental matters. This proclamation also mandates the EPA to undertake studies and research, to develop action plans etc, in the area of combating desertification.

5.2.2 Ministry of Agriculture and Rural Development (MOARD)

Proclamation No. 300/2004 issued on 13th January 2004 amended the proclamation for the reorganization of the Executive Organs of the Federal Democratic Republic of Ethiopia, Proclamation No. 256/2002. Thus, the MOARD replaced the former Ministry of Agriculture and Ministry of Rural Development. The powers and duties vested in the new ministry includes, among others, conservation and utilization of forest and wildlife resources, food security programme, water harvesting and small-scale irrigation, monitoring events affecting agricultural development and early warning system, enhancing market led agricultural development, issue guidelines and procedures for agricultural input evaluation and release, ensuring the distribution of high quality agricultural inputs to users, and establishing and directing training centers of agriculture and rural technology.

The New Ministry strives to solve chronic problems associated with: deforestation, land degradation, lack of land use planning, decline in crop & animal production, dependency on biomass fuels, and lack of alternatives livelihoods, etc.

5.2.3 Ministry of Capacity Building (MOCB)

The Proclamation for the reorganization of the Executive Organs of the Federal Democratic Republic of Ethiopia, Proclamation No. 256/2002 established Ministry of Capacity Building. Under the National Capacity Building Programme, there are currently 14 sub-programmes. Out of these sub-programmes: District Level capacity building; establishment of Agricultural, Technical, Vocational & Educational Training (ATVET); the Cooperative Development Programme; the Information Communication Technology (ICT) service through the establishment of government information network and community based information system and services; and Civil Society and NGO capacity development programmes are directly relevant to combating desertification and mitigating the effects of drought.

5.2.4 Ministry of Federal Affairs (MOFA)

Ministry of Federal Affairs [MOFA] assists the regional states through trainings in policy issues to regional leaders as well as the public at large. It also strives to enhance their capacity and maintain peace and promote development, conflict management, social and environmental awareness, among others.

The Regional Affairs divisions of MOFA focus mainly in supporting regions, which are relatively underdeveloped and recently emerging. These include the pastoral regions of Somali and Afar and the semi -sedentary regions of Gambella and Benishangul-Gumuz. These enhance

the capacity of the regional states to be prepared and respond to drought and also contribute to vulnerability reduction and creating sustainable settled livelihood for the people of the region.

5.2.5. Ministry of Infrastructure Development (MOID)

The Ministry of Infrastructure Development [MOID] is mandated for all issues of infrastructure development, which includes: road development, postal service, telecommunication services, generation and distribution of electric power.

The first phase of Road Sector Development Programme (RSDP 1997-2002) was aimed at creating adequate capacity of the road sub-sector to facilitate and hasten the economic recovery process, and restores the essential road networks to an acceptable condition. Accordingly, the total classified road network has increased by about 30 percent over the last 5 years. Much of the increase has been in regional road networks, which eventually benefited the country's dry land areas. The programme has also resulted in the improved access to all-weather road expressed in percentage of farming population residing more than half a day walk has reduced from 80 to 70 percent within a period of 1996 - 2002.

The RSDP II is the successor of RSDP I. The focus of RSDP II (2002-2007) is to build on the momentum attained by RSDP I in achieving the road condition targets and provide a reliable road infrastructure to the rural population. RSDP II has introduced a new dimension, with regard to travel and transport at village level. This is carried out through the Ethiopian Rural Travel and Transport Sub-Program (ERTTP). The total cost of the RSDP II is estimated to be about Birr 13.8 billion or USD\$1.6 billion.

5.2.6. Ministry of Water Resources (MOWR)

To provide better and efficient services, currently, the Ministry of Water Resources [MOWR] has undergone restructuring. The units created in this new structural setup includes, among others: unit focusing on environmental issues of water resource development projects, research and development coordination department, and Water Fund. Water Fund is established to implement water resource development programme under the principle of cost recovery.

The Ethiopian Water Sector Development Programme (WSDP) has a time horizon of 15 years (2002-2016). It consists of programmes and projects grouped into the sub-sectors of irrigation, hydropower, water supply and sanitation, and water resources institutional capacity building aspects. The Programme is envisaged to contribute to improvement of the livelihood of the population in general, and dry land population in particular. It also improves water availability for dry lands development.

5.2.7. Ministry of Education (MOE)

In collaboration with the relevant environment related institution, the Ministry is responsible for promotion environmental education and awareness that focuses mainly on formal education. Higher education institutions undertake some educational and research initiatives in environment management including the combating desertification and mitigating the effects of drought.

5.2.8. Disaster Prevention and Preparedness Commission (DPPC)

The Disaster Prevention and Preparedness Commission [DPPC] by virtue of its operational strategies and implementation modalities in general, have a direct role in a matter of drought. Especially the Early Warning System of the DPPC has been identifying acute problem areas regarding drought induced food shortage as well as it has been providing early warning information to the public and international humanitarian organizations.

5.2.9. Ethiopian Investment Commission (EIC)

The Ethiopian Investment Commission [EIC] established by Proclamation No. 373/2003, serves as a nucleus for matters of investment and promote, coordinate and enhance activities thereon; initiate policy and implementation measures needed to create a conducive investment climate for investors and follow up their implementation; issue investment permits; monitors the implementation of investment projects for which it has issued permits; ensures that the terms of the investment permits are complied with; and approves and registers technology transfer agreements related to investments.

5.2.10. Food Security Coordination Bureau (FSCB)

The Food Security Coordination Bureau [FSCB] in collaboration with development partners has developed strategies to ensure the food security of chronically food insecure population and to significantly improve and sustain the overall food security situation of ten million people within three to five years period. Environmental management interventions such as moisture retention water harvesting, soil and water conservation, hillside terracing, and afforestation are the major focus of the programme along with other intervention.

5.2.11. Ethiopian Agricultural Research Organization (EARO)

Ethiopian Agricultural Research Organization [EARO] has a directorate dedicated to the research in dry land related theme. The directorate is known as Dry Land Agricultural Research Directorate. It is established to carry out multifaceted and community based Dry Land Agricultural research programmes. The research subjects of the directorate include: crop, livestock (Pastoral and Agro Pastoral Research Programme), soil and water, and dry land forestry. This approach is envisaged to ensure integration among production systems, natural resource management and socioeconomic considerations.

5.2.12. Institute of Biodiversity Conservation (IBC)

The former Institute of Biodiversity Conservation and Research [IBCR] has been re-established as Institute of Biodiversity Conservation (IBC) by Proclamation No. 381/2004. The Institute is engaged in undertaking *ex situ*, and *in situ* conservation of biodiversity. The materials acquired by the gene bank in IBC through collection, repatriation and donation over the years (circa 62851 accessions of some 105 species) are being conserved using appropriate *ex situ*, conservation practices. IBC in collaboration with regional states and other stakeholders is preserving recalcitrant species in field gene banks and botanical garden at different parts of the country.

5.2.13. Higher Learning Institutions (HLI)

Higher Learning Institutions [HLI] are engaged in activities relevant to combating desertification. The Addis Ababa University is running Post-graduate study in Environmental science, research programmes in Biology Department such as the Herbarium; The Mekelle University has an Undergraduate study in Environment and Natural Resource programme and is running projects on dry land agriculture and conservation, and the Debu, Alemaya, Arbaminch and Jimma Universities address combating desertification through their regular education and research programmes.

5.2.14. National Meteorological Services Agency (NMSA)

National Meteorological Services Agency [NMSA] is preparing and disseminating Agro Meteorological Advisory Bulletins at real time basis, which can assist planners, decision makers and farmers at large. The agency disseminates agro meteorological reports on ten daily, monthly and seasonal in which all the necessary current information relevant to agriculture is compiled. NMSA also issues agro-meteorological bulletins through World Agro Meteorological Information Service Web site. Moreover, NMSA prepares and disseminates monthly, seasonal and annual Climate Bulletins and seasonal and annual Hydro-Meteorological Bulletins.

5.2.15. Regional Environmental Agencies (REA)

Under Proclamation No. 295/2002, all regional states are expected to establish their own environmental organs. Following this, six regions and two city administrations have established their respective environmental organs and two regional states are in the process. Regional environmental organs are vested in, among others, the responsibility to coordinate environmental matters including the issue of combating desertification in their respective region.

5.2.16. Ethiopian Rural Energy Development and Promotion Centre (EREDPC)

The Ethiopian Rural Energy Development and Promotion Center (EREDPC) is accountable to the MOARD. It is mandated for adoption, research, to develop and disseminate efficient and appropriate energy technologies and facilitates, as well as to develop renewable energy development projects in rural areas. The center can have an important role in designing and implementing projects that directly contribute to combating desertification and mitigating the effects of drought. Moreover, the center can have an important role in identification of appropriate alternative energy sources and technologies. Its activities are envisaged to reduce the pressure on natural biomass resources, and eventually contributing to combat desertification.

5.2.17. NGOs/CBOs

There are more than 650 registered NGOs/CBOs in Ethiopia. These NGOs and CBOs are engaged in various fields including environmental protection and natural resource management. Recently they have established a network, called Ethiopian NGOs/CBOs Coordination Committee for Combating Desertification (ENCCD).

The ENCCD is a network that promotes UNCCD/NAP implementation in the country. Some of the major activities accomplished by ENCCD are: maintain network among its members and other organizations working in the field; share various information and experiences related to UNCCD/NAP implementation; provide information and feedback on different studies conducted in association to ENCCD performance and UNCCD/ NAP implementation; Participate in training and awareness raise activities to popularize UNCCD/NAP; Participate in several meetings representing NGO/ CBOs nationally and internationally

5.3. On-going Programs and Initiatives

5.3.1. Food Security Program (FSP)

The over all objective of the program is to attain food security for the chronically food insecure five million people and sustain overall food security of ten million additional food insecure people within five years.

The severity of the crises faced by the population calls a renewed commitment by all partners to join hands with the government. After, a series of consultation processes between the government and development partners, a major turning point has been reached. The consultation workshop held form 11-12 June 2004 concluded to look for lasting solutions to the problem of chronic food insecurity in the country and promised a firm commitment for the new initiative known as “Coalition for Food Security in Ethiopia.”

The food security programme is financially supported through safety net programme of the donor community. This is expected to have an impact in household asset building, which in turn contributes to reducing pressure on natural resources. Similarly, the regional governments have initiated comparable efforts of resource mobilization for the implementation of the food security programme.

The food security program comprises of environmental rehabilitation schemes such as area closures; water harvesting, small-scale irrigation and other labour intensive public works.

5.3.2 Voluntary Resettlement Programme (VRP)

Ethiopia faces both chronic and transitory food insecurity problems. The main factors contributing to food insecurity are: land degradation, drought, high population pressure, low-input subsistence agriculture, small farm size and landlessness. Million of farmers have faced serious food security problems within the past three to four decades because of reduced or complete failure of agricultural production as a result of the aforementioned constraints.

The objective of the programme is to resettle up to 440,000 chronically food insecure households from area which are environmentally degraded, moisture deficit and with relatively high population pressure to productive areas of the country thereby enable them attain food security by the end of the year 2006. So far over 123,000 households have been voluntarily resettled.

Protection of forests, wildlife, and proper utilization of other national resources are among major components of the programme. Extensive awareness raising activities are carried out before the

resettlement. Moreover, subsequent training has been provided to the re-settlers on how to utilize the existing resources in a sustainable and environmentally friendly manner. A number of nursery sites have been established. Community woodlots establishment is also on progress.

The VRP has resulted in reduction of pressure on natural resource at the origin of the resettles and consequently allowing the natural regeneration in these areas. The revival of the direct and indirect ecosystems benefits is witnessed.

Establishment of community infrastructure such as; health centers, health posts, vet posts, water points, food warehouses, and availability transportation, food rations, drugs, equipment, utensils, and waiting shelter as well as facilitation of settlement of households such as construction of shelter, provision of oxen and seed, awareness on the HIV/AIDS, gender and epidemic diseases, preparation of agricultural land for production, and capacity building at all levels is envisaged to ensure the success of the resettlement programme.

5.3.3. Nile Basin Initiative (NBI)

The main objective of the programme is to provide strategic environmental framework for the management of the trans-boundary waters and environmental challenges in the Nile River Basin. Specifically, the programme will: (i) improve the understanding of the relationship of water resources development and environment, (ii) provide forum to discuss development paths for the Nile with a wide range of stakeholders, (iii) enhance basin-wide cooperation and environmental awareness, and (iv) enhance environmental management capacities of the basin-wide institutions and the NBI.

The Nile Trans-boundary Environmental Action Programme (NTEAP) is one of the eight programmes under the NBI shared vision programme. The NTEAP has six components: (i) institutional strengthening to facilitate regional cooperation (ii) community-level land, forest and water conservation (iii) environmental education & awareness (iv) wetlands and biodiversity conservation (v) water quality monitoring and (vi) monitoring & evaluation.

The NTEAP has a life span of 5 years and is owned and implemented by the NBI countries through the financial and technical assistance of UNDP and the World Bank. The programme was commenced in October 2003. Major activities so far accomplished include, establishment of programme management unit, recruitment of staff and preparation of 2004 action plan.

6. Financial Allocation, Financial Assistance and Technical Cooperation in the Implementation of UNCCD /NAP

6.1 Cooperation/ donor assistance

In Ethiopia, assistance in the sphere of environmental protection and management in general and NAP in particular is low. Assistance to discharge sustainable development programmes and projects and NAP implementation is limited to few donor agencies, namely, UNDP, World Bank, and IDA. Recently, 9 GEF and 1 GM funded projects, which are related to NAP, are under implementation. See Annex III for list of projects funded by GEF & GM.

The National Desertification Fund (NDF) draft document has been prepared and reviewed, with the participation of a wider section of stakeholders to mobilize national and international funds for the implementation of projects within the framework of NAP. The establishment of NDF and its proper functioning is hoped to materialize the flow of funds to local actors.

Though data on the exact amount of resources employed is currently unavailable, many local and international NGOs have been engaged in activities of combating desertification and mitigate the effects of drought in the country by allocating substantial amount of funds. But, there is no much success on the partners' side in bringing together efforts in a coordinated manner for NAP implementation. However, recently the donor community (UNDP, IDA, World Bank, SIDA, GM, etc.) has been showing interest in assisting the process.

One such important donor cooperation for the implementation of NAP is the Country Cooperation Frame Work 2 (CCF2), Environment & Sustainable Dry Land Management Programme (UNDP/ Govt.) that is currently running in 69 drought prone districts of the country from 2003-2007 with a total budget of ETB 38.7 million (4.5 million USD).

Other projects running for the same purpose are, the Participatory Process for Partnership Framework towards Resource Mobilization and the Mille Dry lands Sustainable Management Project that was signed between the Ethiopian government and the UNDP.

6.2 Financial Allocation from National Budget

To avert land degradation, agricultural development and associated problems, the government of Ethiopia allocates budget. For instance, from 1990/00 to 2000/01, out of the total annual budget of 4.4 billion ETB (510millionUSD), 136.50 million ETB (15 million USD) was used for activities related to agriculture and natural resources conservation. Currently, rural communities provide enormous amounts of labour and material inputs for water harvesting, soil and water conservation as well as afforestation.

6.3 The Need for Financial Assistance and Technical Cooperation

The effort to get access for external assistance in the form of finance and technical inputs by local actors has remained minimal. Nationally, few attempts have been done to lure developed country parties to come forward and provide assistance. As a consequence, mobilizing sufficient fund for NAP implementation has not produced remarkable results. This drawback largely affected the provisions of networking stakeholders' capacities for NAP implementation and mainstreaming of NAP into other National development programmes.

Hence, overall assistance from developed country parties; bilateral organizations, the private sector and other development partners are needed. The availability of these provisions would facilitate among others; networking establishment among stakeholders, mainstreaming of NAP into other national programs, awareness creation on the implementation of NAP to donors and government decision makers at all levels, establishment of the National Desertification Fund, formulating community project proposals and finalization of the Road Map.

7. Measures Taken or Planned Within the Framework of the National Action Plan

7.1 Improving the Economic Environment

The severity of poverty felt by millions of the population calls for a new commitment by all and joining hands with the government to address the problem in an emergency mode inline with actions stipulated in the SDPRP.

It is therefore acknowledged that food security strategies are the sub-set of poverty reduction intervention and integral part of the fulfillment of its objectives. There has been increasing recognition and series of consultative processes to strengthen partnership between the government and development partners towards the challenges of food insecurity. Accordingly, the Coalition for Food Security in Ethiopia with a view to achieve a major turn around of the food insecurity challenges within a time frame of 3-5 years has been formulated. The Coalition idea reflects a new partnership among government, development partners, civil society, private sector, and with maximum social mobilization of the people themselves.

In line with the country's pastoral development policy, the government gives priority to the consolidation of agro-pastoralism. The focus of the short & medium terms of the policy will be on improving the living standard of pastoralists through improved traditional livestock breeding practices and livestock marketing, improving the provision of water, pasture, veterinary services and the introduction of modern techniques such as artificial insemination and commercial fattening. Improved mobile and static service provisions, which include among others animal and human health services and basic education programme will be given due consideration. Infrastructure facilities in these areas focus on rural roads, electric power supply and telecommunication.

The government devises development strategy for semi- sedentary areas of the country that are situated in the western and southwestern lowlands covering 6.3% of the total land mass. These areas are endowed with enormous natural resources (forests, annual and perennial rivers, virgin land suitable for agriculture and irrigation development). The strategy is based on the rural development policy and the concrete realities of these areas. The programmes in the strategy include among others, settlement of the scattered population in cluster form for the creation of possible conditions to deliver social services, facilitation of capacity building, and development of basic infrastructure.

7.2 Implementation of projects that directly contribute to NAP

Different programmes and projects, which directly contribute in combating desertification and mitigating the effects of drought, have been formulated and implemented based on the policies and strategies of the country. Programmes currently implemented include among others: UNDP supported CCF2, Environment & Sustainable Dry lands management programme, Participatory Process for Partnership Framework towards Resource Mobilization, supported by GM, Mille Dry lands Sustainable Management Project, etc. See Annex III for detail.

7.3 The Conservation of Natural Resources

With the participation of all concerned stakeholders, various activities have been carried out throughout the country in combating desertification and mitigate the effects of drought. The major activities are:

- Moisture conservation and utilization, which include water harvesting, small-scale irrigation etc,
- Physical and biological soil conservation measures and agro-forestry practices;
- Area closure and afforestation;
- Rehabilitation of degraded patches of remnant forest areas through enrichment planting and enclosure by local communities;
- Upgrading of two control hunting areas to national parks and the establishment of one new national park;
- Based on the investment policy of the country, five eco-tourism based investments have been established by local and private investors;
- Woody Bio-mass Inventory and Strategic Planning Project which was designed to develop national and regional planning and monitoring capabilities, including inventory of natural resources and to provide recommended land management options has been completed;
- The introduction and dissemination of fuel saving stoves and utilization of renewable energy sources (solar, wind etc).



7.4 Improving Institutional Arrangements

Cognizant of the urgent need to address the wide array of capacity constraints that hinder the performance of public institutions in Ethiopia, the government has embarked on a comprehensive Civil Service Reform Programme (CSRP) since 2003. Indicative of Ethiopia's "first generation" capacity building efforts, the CSRP aims at building a fair, transparent, efficient, effective and ethical service primarily by focusing on strengthening core technocratic systems within the public sector.

Key challenges for the government in this "full implementation phase" of CSRP will be to ensure a regional and district-level focus, maintain strong coordination across line ministries and government institutions, provide clear incentives for behavioral change among civil servants, and establish benchmarks against which to measure impact. These reforms will make a qualitative change in governance, transparency and accountability within the public sector.

7.5 Improving Public Knowledge on Issues Pertaining to Desertification and Monitoring the Effects of Drought

7.5.1 Improving the Knowledge of the Public on Desertification and Mitigation of the Effects of Drought

Awareness and education plays a critical role for the development and appropriate use of environmental resources in general and combating desertification in particular. Strengthening environmental education and raising the awareness of the society is one of the strategies required for combating desertification and mitigating the effects of drought. In line with this, the following major activities have been undertaken at all levels: incorporation of environmental science in the school curriculum; the establishment of environmental clubs; awareness creation through the media, publications and audiovisual materials; formation of environmental forums, and the celebration of public events such as World Desertification Day, Tree Day & the World Environment Day.

7.5.2 The Implementation of Early Warning System and the Strengthening of Drought Mitigation Capacity

The Disaster Prevention and Preparedness Commission (DPPC), via its strategies and implementation modalities in general and that of the Early Warning System in particular, identifies acute problem areas and gives early warning information to the public and international humanitarian organizations to mitigate the effects of drought.

At federal level, the government has built up a Crisis Management Committee whose members are drawn from different relevant sectors and chaired by DPPC with the responsibility to monitor and evaluate the effects of drought. The committee submits a periodical report to the National Committee led by the Deputy Prime Minister of the country for immediate action and resource mobilization.

Moreover, base line information over a long period of time that aid in designing policies and strategies has been provided to the government, donors, NGOs and international aid agencies. This include among others, Vulnerability Development Index (VDI) and Vulnerability Analysis and Mapping (VAM) which is funded by WFP.

7.5.3 Improving the Role of Science and Technology

The National Science and Technology Policy addresses a number of science and technology issues that promote sustainable development and proper management of the environment in the country. The government has also taken measures to create conducive environment to scientists and technologists. Incentive mechanisms for scientists and technologists have also been put in place and scientists are more encouraged to come up with different project proposals. The collection and characterisation of the country's flora and fauna, collection of the principal vegetation types, dynamic change and land use and ecological restoration of the central plateau of the country are some of the on-going projects relevant to combating desertification and mitigating the effects of drought.

7.5.4 Improving Agricultural Research

The current policy of Ethiopia gives special attention to agricultural research and development and market-oriented economy. The development of crops and cropping systems, including grain legumes that can assist in conserving and enhancing the natural resources base are also the focus of this policy.

The Dry Land Agricultural Research Directorate established within EARO, focuses on issues of dry land agriculture that includes crop, livestock (Pastoral and agro-pastoral research programme), soil and water conservation, forestry and others in a holistic approach by conducting basic and applied research. This approach contributes to the development of technologies that help improve the farming system, coordination of national dry land research activities under dry land agricultural research directorate, the generation of appropriate training, and communication methodologies for accelerating transfer of technologies as well as collaborating with relevant national and international agencies.

The country has also established joint research activities with International Center for Agricultural Research in Dry Area (ICARDA), International Crop Research Institute for Semi Arid Tropics (ICRISAT), International Livestock Research Institute (ILRI), and International Institute for Tropical Agriculture (IITA), among others. The areas of co-operation include evaluation of genetic material, collaborative research, experience sharing, information exchange, etc.

Among the major steps taken in the research capacity of the dry lands of Ethiopia is the opening of new research centres in the previously inaccessible regions of the country. In order to cover these dry land agro-ecologies of pastoral and agro-pastoral production systems, EARO is establishing six new research centres. In these regions, there has been food and feed insecurity, variability of vegetation cover, drought, and disease outbreak and land degradation. These

research centres are located in major dry land agro-ecological zones of the pastoral and agro-pastoral production systems.

Moreover, Pastoral Community Development Project (PCDP) funded by the World Bank with particular interest in pastoral community development and research is closely collaborating with Dry Land Agriculture Research. In addition, the dry land research programmes are planned and executed in collaboration with the higher learning institutes such as Mekelle University. These collaborations enable to increase the contribution of research results on the constraints identified in the strategy and development of research capacity.

Currently, there are several research activities being conducted in the pastoral and agro-pastoral areas under both rain-fed and irrigated conditions by focusing on, among others, different food crops, forage crops, livestock, natural resource management (rangeland management) and forestry. The research activities can generally be classified under three categories: (a) sustainable management and utilization of existing woodland and tree resources, (b) tree planting in an agro-forestry scheme, especially using drought-tolerant multipurpose trees which are designed to increase tree cover in the dry lands, and (c) forage species development using drought tolerant species. These activities have significant contribution in combating desertification and mitigating the effects of drought.

7.5.5. Enhancing the Role of Indigenous Knowledge on Combating Desertification and Mitigating the Effects of Drought

Ethiopia, together with the African Union (AU), has developed a model law for regulating access to biological resources and for enforcing the protection of the rights of the local communities to their traditional knowledge, technologies, innovations and practices and their biological resources in line with Article 8. j of the CBD. This model law was adopted by the AU summit that took place in Ouagadougou in June 1998. In these regard, Ethiopia's draft law based on the African Model Law is being finalized prior to submission to the parliament.

The objective of the draft law is to ensure that the genetic resources of the country are conserved, developed, and sustainably utilized; the knowledge, innovations, practices, and technologies of local communities on the conservation and use of genetic resources are respected; and the benefits derived from the use of genetic resources, and community knowledge, innovations, practices and technologies are fairly and equitably shared by local communities.

The Ethno-biology Department of the IBC has been studying the role of women in the development, maintenance and sustainable utilization of biological resources with emphasis on food crops and cosmetic plants. Some measures have been taken to support the Ethiopian National Traditional Medicine Preparation and Therapy Association in recording medical knowledge, innovations and practices of healers in local communities.

In addition, various research activities have been carried out including on the use of biological resources, particularly plants by the various ethnic societies of the country, by the Institute of Ethiopian Studies and the Sociology/Anthropology Department of Addis Ababa University.

7.6 Enhancing the involvement of women in natural resource management and combating desertification

In rural areas of Ethiopia, where the majority of the population live, natural resource is the most important base for life. Although natural resource degradation affects every segment of the society, women, girls and children are the most vulnerable ones in regard to limitation of access to resources. Poor women usually do not own land or money; they depend on other natural resources, especially on forest products such as fuel wood, medicinal plants, animal feed both for consumption and source of income.

The country's Constitution has guaranteed women equal rights to men in every opportunity. Several articles of the Constitution give emphasis to women right. In addition to this, the government issued policies that commit itself to the advancement of women. These policies state that in order to attain overall economic and political development, opportunities for women in decisions making process must be guaranteed. As prerequisite for sustainable development, the Environment Policy of Ethiopia states "as key actors in natural resource management, women shall be treated equally with men & women to be totally involved in policy, programs & project decision making and implementation."

Accordingly, the involvement of women in conservation programmes of the rural areas has grown significantly with their share reaching between 50-70 % of the total labour force. Along side these, development agencies across the country have been running projects that benefit women through food for work programmes, employment generation schemes and by promoting access of women to key resources; such as the forests, land and water. The full involvement of women in natural resource management has resulted to better natural resources management and in increasing household incomes.

7.7 Improving Environmental Information System

Information is very crucial for decision making on environmental issues and for dissemination of current environmental information to the public at large. In view of the pivotal role that information plays, the Environmental Policy has incorporated it as one of the cross-sectoral policy issues.

At present, however, it is difficult to say that there is an efficient and consistent environmental information system in the country. As a result, one could say that the environmental controlling and monitoring of desertification is not supported by adequate information, which is also reflected in the preparation of the country profile.

Much effort is being made at present in the collection and storage of environmental data. A meta-database on environmental and natural resources is being developed under the auspices of the Ministry of Water Resources to create one central national database in order to ensure consistency of data. In addition, EPA has also taken some initiatives in the field by setting up an environmental information system.

8. Best Practices to Combat Desertification

There are various best practices to combat land degradation/ desertification and mitigate the effects of drought. The selected ones are described here under.

8.1 Indigenous Practices

8.1.1 In-Situ Conservation of Crop Varieties

Ethiopia's experience in the *in-situ* maintenance of crop genetic diversity is characterized by a decentralized system with broad-based participation of farmers and other groups, particularly the agricultural extension workers, the local administration and some NGOs. The community based on-farm biodiversity conservation of major food crops that has been implemented in collaboration with different stakeholders is a good example of popular participation in conservation activities.

Through a novel approach of establishing Community Gene Banks (CGBs) with local communities, over 400 samples of various farmers' varieties of major food crops are being conserved as well as multiplied and distributed to smallholder farmers who need them. At present, there are 12 CGBs located in 6 different agro-ecological zones of the country.

Crop Conservation Associations (CCAs) have also been established and there are 3312 registered members, of which 520 are women. All these farmers' conservators have been trained in different aspects of genetic resources management. It is expected that the CCAs will grow to form a major network of smallholder farmers in order to formally exchange genetic materials and information. All the necessary organizational set-ups within the CCAs are in place to adequately discharge their responsibilities and duties. In this process, the local farming communities and their farmers' varieties are linked with the existing more formal genetic resources initiative of IBC.

At the different CGB sites, the attempts made and the activities pursued have reduced the rate of genetic erosion and restored the local seeds or landraces in regions where they were wiped out by severe drought or otherwise, consumed by farmers during the famine years or replaced by new, exotic or improved (high input) varieties. The other aspect was the enhancement of the yields and other desirable characteristics of landraces, and their utilization for food, to ensure sustainable, more secure and reliable food supply.

IBC scientists and farmers have already identified a few elite seeds (e.g. white and purple seeded durum wheat) with the potential for use in food industry (especially for pasta and pastries), which at present largely depends on imported food grain. Farmers are multiplying the seeds for local/urban consumption. To support a sustained, more elaborate landrace enhancement activity, some 175 durum wheat farmers' varieties were evaluated/characterized. Through this process additional entries were identified for the durum wheat landrace on-farm selection activities. Similarly, 66 sorghum farmers' varieties and other pulse accessions that are locally adapted types with potential for high yield and other desirable characteristics were identified and distributed to the conservator farmers.

8.1.2 Konso's Indigenous Terrace building

The Konso district is found in the Southern Nations/ Nationalities People's Region (SNNPR). The District has an area of 2,354.3 km² inhabited by 212,235 population. Out of the total area of the district, about 80% is terraced. The farmers of Konso are well known for their own home grown/special terrace building, which is one of the best locally available techniques for soil and water conservation. In addition, the Konso's are well known for their crop diversification to minimize risk, mixed cropping and multi-story crop and tree production in traditional intensification. Unlike the tradition such as in the northern parts of Ethiopia, weaves, smiths, potters etc., are not outcasts but having equal status in the society. Merit is given to hard work, productivity and natural resource conservation.

As a result, the Konso's people have controlled land degradation even in hilly and mountainous areas. Each terrace has been in place for more than 50 years. All Konso people participate in terrace building. Konso's terracing and agro forestry practices have significant contribution to combat desertification and mitigate the effects of drought and needs to be replicated in other parts of the country.

8.1.3 Gedio's Agro-forestry system

Gedio zone, found in the SNNPRS, has a total area of 1347 km² inhabited by 773,514 populations. In Gedio, nearly all people live virtually in a home garden land use system. In this system slopes as steep as 80 degree are under production. Out of the total zonal population, about 86%, living in the rural area is involved in agro-forestry development activities, which is one of the best measures to combat desertification and mitigate the effects of drought in the zone. Plots are covered with multi-story vegetation and crops like *Cordia africana*, *Coffee arabica*, Enset *ventricosum* and several root crops. Mainly, biological measures are being practiced in the area. As a result, soil and water resources are well conserved, home garden agro-forestry and biodiversity have been enhanced; and most area of the zone is covered by evergreen vegetation.

Gedio "agroforests" contain an organized mix of mosaics of crops (starting from annual herbs through medium-aged *ensete* (10years) and coffee (30 years) to long living multi-purpose trees (over a century old). This disposition allows farmers to derive maximum benefits on a sustainable basis, as different components at different phases of development provide continuous harvests. High biomass production is ensured because of the capacity of the land use system. Perturbing forces are thus well buffered too. This also explains the high carrying capacity of these systems (582.3 persons per km², CSA, 2004) in an undulating and rugged terrain.

While Gedio agroforests are most ancient, they cannot be said to be primitive, i.e., archaic or unfit for the present age, as their capacity of production is comparable to most high input conventional modern agricultural systems. There is a lesson to be learned from these "agro forests" that maximum yield can be obtained also from complex systems. Therefore, *ensete*-based Gedio systems today as compared to contemporaries of modern day agriculture and forestry have retained the qualities of the original ecosystem by conserving their capacity for high biomass production. Unlike agro forestry systems proper that only cast a bridge between specialized agriculture and specialized forestry, Gedio "agro forests" fully integrate aspects of forestry and agriculture. The Gedio systems can therefore be thought of as indirect progenitors of modern-day agriculture and forestry.

The Gedio manage agro-ecosystem complexity, and through it agro-ecosystem properties such as biodiversity, productivity, sustainability, and so take care of themselves. The success of this strategy is for instance manifested in the high diversity of life forms giving these ecosystems the appearance of forests due largely to “place-making” by woody perennials and diverse herbaceous “weedy” ground flora.

Ensete proved to be the highest-yielding Ethiopian food crop. *Ensete* yields over 5.6 tons ha⁻¹ year⁻¹ under Gedio agroforests. *Ensete* can be planted as fodder in good times and for human consumption during both drought and good seasons. *Ensete* can also conserve and/or restore soils in erosion-prone highland areas. Soil conservation then goes with *ensete* consumption in good and bad times. Thus, *Ensete* should get due emphasis as it is the cheapest remedy to the recurrent drought & food problems in Ethiopia.



Gedeo Agro-forestry System.

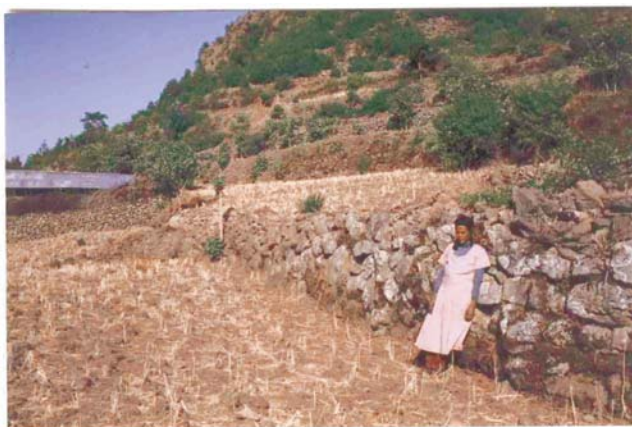
8.1.4 Woman Farmer Innovator in Land Husbandry: The Case of W/ro Ayelech Fikre

W/ro Ayelech Fikre is an illiterate woman and 66 years old widowed farmer living in *Ankober woreda*, North Shewa Zone of the Amhara National State. The total area of her farmland is about 1 ha. She has been applying various structural indigenous soil and water conservation (ISWC) measures such as stone bunds, cut-off drains and traditional ditches by her own initiatives. She has recognized that these structural ISWC measures alone are not enough to get better crop yields. As a result, she has been applying various types of soil fertility management practices including application of composted manure, intercropping, crop rotation and planting of *Croton macrostachyus* in a line immediately below each stone bund. Moreover, to address the problem of water shortage, she has used various water harvesting techniques and successfully obtained more crop yield.

Apart from the different indigenous land husbandry techniques applied directly on her farmland to conserve soil and water, Ayelech has also treated the steep land above her farmland by

constructing hillside terraces and planting *gesho* (*Rhamnus perinoides*), also known as 'hops', which is used for local beer brewing and for which there is a high demand on the local market. In addition, she allows other indigenous tree species, such as juniper (*Juniperus procera*) and African olive (*Olea africana*) to regenerate naturally on this slope. She prunes the juniper branches so that the trees will attain quickly the desired height and diameter to be sold as timber. She taught herself about the effect of pruning by leaving some trees unpruned and comparing their growth with that of the pruned trees. She uses the pruning for fuel.

In general, w/ro Ayelech has integrated various indigenous land husbandry practices by her own initiative and knowledge. For her work of indigenous natural resources conservation practices, she received a prize from the Food and Agriculture Organization (FAO) of the United Nations and the then Ethiopian Ministry of Agriculture on World Food Day in October 1998. It is now widely recognized (by various visitors including farmers, experts and higher officials) that she has integrated various indigenous techniques of land husbandry, applied by different farmers, in a unique way on her own farm so as to make optimal use of the resources available to her and make them more productive.



Ayelech with her terraced farm.



Conservation based Agriculture, *Ankober*

8.2 Improved and Adopted Practices

8.2.1 “Lakech” and “Mirt” Stoves

Ethiopia is highly dependent on biomass energy that includes fuel wood, charcoal, agricultural residues, animal dung that account more than 90% of the total domestic energy demand. The high biomass energy consumption, along with inefficient utilization, has created, among others, deforestation, biodiversity loss and land degradation. In general, the fuel wood demand of the country is far exceeding the sustainable supply, for instance, leading to a total of fuel wood deficit of 47 million m³ by the year 2000. The diminishing natural forest resources are much affected by the expansion of agricultural land in general and inefficient utilization of biomass fuels in particular.

To address these problems, various efforts have been made. Among these efforts, the most important and significant one is the development and dissemination of the improved charcoal stove known as “*Lakech*” and the biomass “*Enjera*” stove known as “*Mirt*”. *Lakech* and *Mirt*

provide a saving of 25% and 47 % over traditional stove and open fire stove respectively. This indicates that these stoves are useful to reduce the pressure on the biomass energy sources. To date, about 2,000,000 *Lakech* and 328,000 *Mirt* stoves have been distributed throughout the country.

Therefore, large-scale distribution of improved stoves will help to reduce pressure on the biomass resources, including forests, increase land productivity by reducing crop residue and dung usage for fuel wood, and improve family health. The intervention benefits women and children in particular, minimizing their high workloads to collect and supply fuel wood, and their exposure to flame hazard, high smoke emission and harmful pollutants. It is assumed that if the whole rural and urban households (estimated to be about 14.44 million) in Ethiopia shift to the improved *Lakech* and *Mirt* stoves, a saving of about 7,778,800 tones of fuel wood which requires clear cutting of 137,192.24 of forest will be achieved in an annual basis. This implies that sufficient distribution of these improved stoves will have significant contribution to save the biomass resources of the country in general and forest resource in particular and to combat land degradation and mitigate the effects of drought.



“Gounzie” (closed Enjera Stove) efficiency about 47% during test. (EREDPC)



“Lakech” Charcoal Saving Stove (EREDPC)



“Mirt” Enjera Closed Stove efficiency b/n 25-35% during operation (EREDPC)



“Laketch” Charcoal Saving Stove” in operation (EREDPC)

8.2.2 Tigray Experience

Tigray is one of the National States located in the northern part of Ethiopia. In Tigray region, crop yields are very low due to the prevalent land degradation and the associated environmental problems for so many years. To increase soil fertility and crop yields, external agricultural inputs have been introduced for years now. As an alternative to external agricultural inputs, the Institute of Sustainable Development (Local NGO) in collaboration with Bureau of Agricultural and Natural Resources of the Tigray region (BoANR) has been implementing a pilot project on sustainable agriculture, particularly emphasizing on promoting the 'package' of making compost, trench building and planting multi-purpose trees.

This approach is to help local communities develop a sustainable system of high agricultural and renewable natural resources production through the application of ecological principles so as to achieve self-reliance and depend largely on locally generated agricultural inputs. As a strategy, the programme enables communities to collectively embark on implementing sustainable development packages after thorough evaluation and prioritization by community members themselves. A given community therefore, devises its own by-laws that govern all its members in order to administer, enhance and utilize common resources. Currently, the pilot project has expanded from four (the original core sites established in 1996/97) to 15 sites. The results obtained from the pilot sites indicated that, in most cases, crop yields by using compost are comparable to the yield obtained using chemical fertilizer. Based on the results of the pilot project, BOANR has been promoting the activities into over 90 communities within 25 districts of the region.

The dissemination of such activities in marginalized and degraded areas is highly relevant for combating desertification through mitigating the effects of drought by preventing free-range grazing to increase forage productivity and encourage natural regeneration. In the pilot and other intervention areas of the Tigray region, cultivated land is protected through stabilizing terraces by planting multipurpose trees, grasses and legumes, and constructing trench bunds to capture both water and soil. These activities have resulted in quick overall land rehabilitation and marked increases in productivity per unit area.

Farmers living adjacent to the project sites witnessed positive changes in the livelihoods of the communities resulting from the implementation of the project. This has prompted to these witnessing farmers and development workers to adapt the system in this respective domain and beyond.



Tigray –Adinefas: land rehabilitated due to integrated intervention

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ANNEXES

Annex I UNCCD Country Profile-

Ethiopia

This UNCCD Country Profile has been provided by: Environmental Protection Authority in collaboration with:

- ▼ National Meteorological Services Agency
- ▼ Ministry of Agriculture & Rural Development
- ▼ Ethiopian Rural Energy Development & Promotion Center
- ▼ Ministry of Water resources
- ▼ Ministry of Education
- ▼ Ethiopian Mapping Authority
- ▼ Central Statistical Authority
- ▼ National Office of Population

Name of Focal Point: Environmental Protection Authority

Date: October 7, 2004

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Biophysical Indicators Relating To Desertification and Drought

1. Climate

1.1. Index Of Aridity [see Map 3]

**1.2. Normal Rainfall: mean annual rainfall ranges form 100 mm to 2700mm
Rainfall standard deviation**

1.2 Mean Monthly Rainfall for Some Meteorological Stations

Region	Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
A.A ¹	Addis Bole	16.26	37.61	69.21	88.00	78.51	118.37	239.67	236.16	139.27	33.73	6.19	4.89	1067.88
A.A	Addis Obs	16.82	36.00	68.23	88.77	76.00	123.48	259.35	277.97	174.10	41.08	8.32	10.21	1180.33
Afar	Asayita	3.83	9.21	19.51	17.51	9.91	3.33	34.10	36.30	12.77	6.30	3.54	0.61	156.91
Afar	Dubti	4.11	17.03	24.71	20.93	13.54	2.58	43.38	48.04	16.20	8.25	2.37	4.81	205.97
Afar	Elidar	5.46	4.78	16.94	13.14	12.98	2.59	21.37	33.83	23.96	13.10	3.66	1.44	153.27
Afar	Eliwuha	16.54	30.19	54.26	62.42	35.74	11.00	105.18	135.61	47.08	14.15	6.51	12.12	530.80
Afar	Gewane	10.98	37.44	65.33	41.61	36.05	11.43	89.20	100.26	33.99	16.08	6.11	6.58	455.07
Amhara	Bahir Dar	2.58	1.77	8.01	23.99	84.74	192.36	422.53	381.84	193.19	96.32	20.99	3.68	1431.99
Amhara	Chagni	4.89	7.04	14.79	30.06	146.34	263.59	342.81	354.15	284.57	185.25	27.98	12.89	1674.35
Amhara	Debark	1.09	4.63	17.92	44.24	82.92	146.76	331.41	294.06	113.36	108.49	21.93	9.55	1176.35
Amhara	D. Berhan	11.47	18.58	43.57	39.81	34.89	47.37	264.33	261.58	76.16	23.91	6.76	3.38	831.81
Amhara	D. Markos	15.61	17.64	46.70	68.06	94.91	161.29	297.25	305.41	212.30	81.53	23.73	17.36	1341.80
Amhara	Debre Tabor	7.98	6.77	33.01	39.47	92.02	182.63	448.71	435.13	186.08	86.57	32.97	11.88	1563.21
Amhara	Finote selam	5.89	7.67	36.00	55.13	97.79	168.16	279.89	222.87	126.36	79.48	28.03	12.40	1119.67
Amhara	Gondar	4.14	4.84	17.51	39.76	88.79	172.61	323.71	299.28	116.06	71.54	24.35	10.94	1173.52
Amhara	Kobo	15.57	18.48	37.97	56.84	56.56	16.05	139.04	184.43	65.85	49.01	11.41	18.16	669.36
Amhara	Kombolcha	27.83	37.36	75.64	94.92	58.81	32.24	265.09	256.31	121.20	36.41	19.78	18.88	1044.48
Amhara	Lalibela	7.20	12.58	50.16	53.15	34.60	42.60	244.98	231.93	43.35	16.59	13.27	6.18	756.61
Amhara	Mehal Meda	18.96	28.38	71.87	50.77	35.91	38.44	295.08	259.64	69.88	29.17	5.33	6.79	910.24
Amhara	Sekota	2.97	4.41	30.98	28.74	17.99	38.49	233.37	216.61	32.08	6.05	4.72	5.31	621.70
Amhara	S. Gebeya	9.80	24.37	47.04	62.29	48.75	62.57	271.52	297.09	93.06	28.85	7.34	3.39	956.08
Amhara	Sirinka	47.13	60.92	97.66	102.92	70.40	29.29	210.22	247.30	90.61	59.15	26.79	35.48	1077.87
Amhara	Wegel Tena	15.53	23.00	60.60	58.42	40.85	26.29	233.14	231.19	62.14	8.21	12.61	7.28	779.26
Dire	Dire Dawa	21.73	32.59	71.09	102.84	46.78	22.84	92.58	126.63	68.17	25.52	15.58	9.60	635.95
Gambela	Gambella	1.64	2.82	27.60	52.64	160.39	145.40	201.90	198.10	168.58	104.28	35.35	15.15	1113.86
Harari	Harar	8.05	11.80	65.16	136.79	114.74	68.15	93.71	118.26	87.18	42.38	11.54	9.40	767.16
Oromiya	Abomsa	34.46	52.04	104.90	91.84	71.43	56.50	161.63	161.47	113.74	76.69	21.04	15.47	961.22

1.2 (continued)

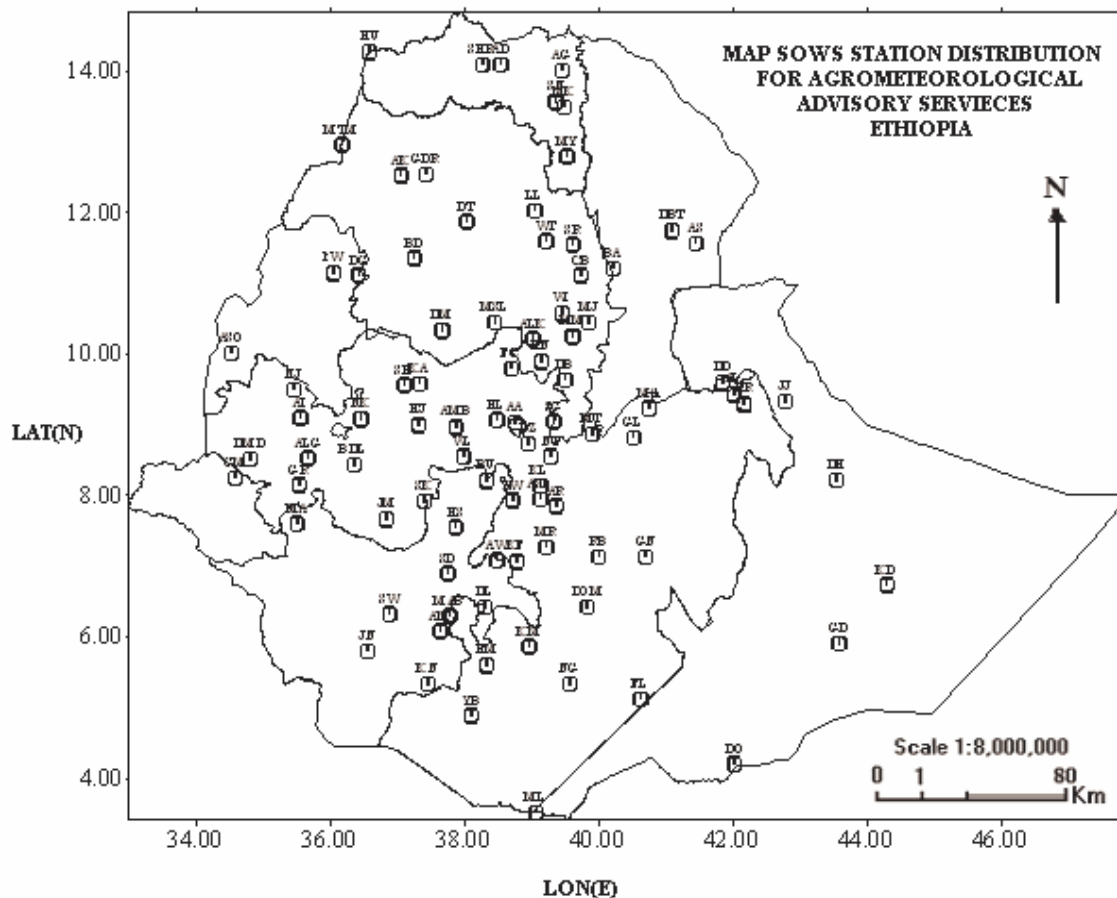
Region	Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Oromiya	Alemaya	8.06	24.06	69.72	93.46	103.94	57.75	101.00	155.13	112.69	45.12	19.12	10.00	800.04
Oromiya	Alge	17.64	17.95	56.98	77.88	211.64	291.96	306.04	329.51	298.79	154.26	37.14	14.28	1814.05
Oromiya	Arjo	14.86	23.75	88.49	118.07	249.30	309.73	314.04	342.81	249.27	108.75	51.75	44.28	1915.11
Oromiya	Arsi robe	47.29	52.88	106.05	143.57	119.88	98.04	183.95	214.91	116.75	68.43	22.09	17.57	1191.41
Oromiya	Assassa	14.94	35.72	43.60	70.04	37.30	71.92	141.09	143.91	53.73	27.78	5.86	8.09	653.98
Oromiya	Assela	18.41	44.33	94.87	110.08	110.90	128.52	192.53	223.16	169.16	61.89	22.99	13.51	1190.35
Oromiya	Debre zeit	9.78	25.30	45.85	57.73	51.62	92.75	219.13	218.97	104.03	21.50	5.07	3.33	855.05
Oromiya	Dello Mena	24.06	34.58	94.34	199.45	190.02	27.47	13.62	27.21	75.98	214.56	52.50	23.87	977.65
Oromiya	Dembi Dolo	8.63	14.10	58.28	107.76	197.59	191.22	165.67	167.09	151.58	110.76	36.49	19.40	1228.57
Oromiya	Fitche	21.26	33.05	62.20	64.53	55.83	84.29	326.08	337.50	121.33	28.57	8.46	9.04	1152.15
Oromiya	Gelemso	17.85	34.50	75.04	155.75	127.42	85.49	136.36	172.00	125.48	90.88	34.52	13.66	1068.96
Oromiya	Ginir	19.84	24.28	90.00	239.33	211.31	31.69	21.98	36.83	102.55	190.65	59.99	20.84	1049.28
Oromiya	Gore	40.92	37.48	96.11	127.01	240.18	315.93	329.29	330.72	318.18	194.25	93.91	42.49	2166.48
Oromiya	Jimma	34.41	47.05	90.68	138.86	170.86	215.89	208.83	212.75	182.96	101.49	58.65	34.92	1497.35
Oromiya	Kachise	17.02	27.30	80.57	83.59	128.33	249.08	420.69	410.33	250.19	106.30	31.93	27.89	1833.23
Oromiya	K. Mengist	19.21	21.43	93.77	219.43	220.13	62.55	28.79	31.03	89.84	183.50	69.42	19.19	1058.31
Oromiya	Koffele	36.24	57.10	125.28	153.83	114.52	110.95	142.62	161.22	154.11	98.09	44.30	27.18	1225.43
Oromiya	Kulumsa	20.64	44.23	86.83	78.05	91.40	89.79	124.21	134.72	103.13	38.17	12.90	9.60	833.67
Oromiya	Kumbi	28.24	39.61	74.63	86.32	142.59	215.84	281.22	218.45	119.88	58.77	10.66	12.13	1288.33
Oromiya	Limu Genet	25.20	36.59	85.92	132.67	214.13	260.49	294.04	277.58	253.38	188.25	40.61	30.90	1839.76
Oromiya	Meiso	20.25	39.86	77.74	104.03	58.56	48.09	129.53	166.21	78.75	52.43	20.57	566.79	1362.81
Oromiya	Metehara	8.37	30.55	49.35	46.84	35.41	24.05	119.98	124.99	46.33	21.73	3.91	5.55	517.07
Oromiya	Mojo	11.88	26.07	45.83	52.16	50.48	93.12	227.26	222.78	115.08	26.90	9.48	1.95	882.99
Oromiya	Moyale	16.70	21.76	47.23	157.96	82.24	16.59	6.65	8.89	15.09	87.55	70.66	27.12	558.43
Oromiya	Nazreth	11.08	27.19	47.96	49.76	56.72	65.60	218.44	214.18	102.02	31.78	7.77	5.97	838.46
Oromiya	Nedjo	8.15	5.22	38.60	66.56	186.72	303.62	317.47	312.22	288.78	125.18	23.43	5.07	1681.02
Oromiya	Negele	8.95	21.60	59.75	194.48	147.18	12.02	6.86	5.47	40.14	161.93	48.51	12.70	719.59
Oromiya	Nekemte	10.04	15.67	57.81	85.39	237.84	388.00	401.92	376.63	273.50	149.53	52.58	20.37	2069.29
Oromiya	Sekoru	29.52	37.15	73.37	105.68	161.33	225.15	213.56	223.10	168.68	72.10	15.59	21.84	1347.06

1.2 (continued)

Region	Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Oromiya	Shambu	21.13	27.22	56.95	90.47	194.33	244.82	366.50	375.98	254.21	81.86	23.95	15.42	1752.86
Oromiya	Welliso	17.95	29.91	54.40	75.10	93.55	178.02	262.19	278.72	144.65	39.41	6.47	7.29	1187.64
Oromiya	Wonji	8.39	30.59	46.22	52.81	52.90	65.68	194.27	198.68	93.38	28.62	10.17	4.95	786.65
Oromiya	Yabello	25.30	36.60	77.13	138.85	101.50	21.74	13.63	13.60	32.89	88.58	50.29	22.90	623.02
Oromiya	Zeway	15.80	34.51	53.24	70.25	76.86	84.66	146.08	118.89	91.41	35.76	1.99	3.15	732.62
SNNP ²	Arba minch	31.27	31.89	56.19	146.86	153.23	61.39	47.85	44.07	78.88	119.83	61.77	39.13	872.38
SNNP	Awasa	46.66	59.03	76.89	103.64	123.31	101.28	123.30	125.72	119.62	84.33	40.91	29.74	1034.44
SNNP	Dila	33.84	45.38	105.34	195.86	190.91	106.12	111.10	100.30	168.35	153.75	66.55	36.87	1314.36
SNNP	Filtu	2.75	8.31	45.04	126.85	93.53	5.85	0.71	0.62	14.28	105.37	41.15	12.10	456.53
SNNP	H. Mariam	13.14	25.00	74.00	179.97	187.64	63.69	39.54	40.95	52.57	125.04	57.51	16.26	875.32
SNNP	H. Selam	56.07	60.42	80.03	150.21	155.00	122.22	118.99	137.68	140.89	151.68	56.29	34.37	1263.86
SNNP	Hossaina	28.73	51.53	96.76	139.00	131.04	124.09	153.73	184.39	151.96	79.80	17.42	22.68	1181.15
SNNP	Jinka	51.70	47.11	112.22	171.03	158.02	93.98	103.40	78.93	100.93	136.69	104.22	72.31	1230.56
SNNP	Konso	28.47	39.84	85.51	173.71	98.60	40.48	21.86	25.13	49.01	88.19	48.28	52.78	751.85
SNNP	Masha	64.91	52.90	131.82	158.20	278.66	304.14	304.73	329.87	270.17	202.83	128.90	90.69	2317.82
SNNP	Sawla	48.31	35.82	136.79	212.01	167.85	101.82	100.90	104.44	114.81	169.92	72.87	54.39	1319.92
SNNP	Wolkite	23.54	37.32	76.62	98.19	116.81	188.46	282.56	245.73	144.61	55.52	14.07	10.80	1294.22
Somali	Degehabor	2.19	6.95	15.93	87.04	91.33	9.74	6.55	8.79	36.34	57.79	11.92	2.30	336.88
Somali	Dolo Odo	0.59	0.55	15.09	100.23	60.53	0.64	1.73	0.48	1.32	32.35	15.59	12.89	242.01
Somali	Gode	0.31	4.76	16.22	73.76	53.38	0.58	0.73	0.09	4.23	59.37	29.20	5.40	248.03
Somali	Jijiga	10.63	25.09	47.30	107.02	103.05	50.93	74.38	120.55	100.13	49.52	18.75	8.76	716.13
Somali	Kebri Dehar	1.57	4.78	15.62	101.70	62.14	1.78	0.20	0.28	13.12	93.33	38.82	4.30	337.64
Tigray	Adigrat	10.35	9.97	49.04	72.25	56.34	32.03	157.77	150.97	16.61	27.75	22.98	13.02	619.08
Tigray	Axum	5.58	2.42	17.83	30.16	38.74	63.01	218.32	211.74	56.28	30.03	15.95	2.08	692.15
Tigray	Humera	0.19	0.00	0.88	4.90	23.84	93.65	170.97	204.58	761.32	15.71	0.17	0.00	1276.22
Tigray	Maichew	16.08	25.14	55.54	72.48	73.01	31.38	159.98	198.91	78.61	49.61	25.12	19.86	805.71
Tigray	Mekele	3.57	6.49	24.30	34.49	30.15	29.06	198.00	201.61	25.27	5.95	6.00	0.61	565.52

N.B This data shall not be reproduced or transferred to another body without the approval of NMSA

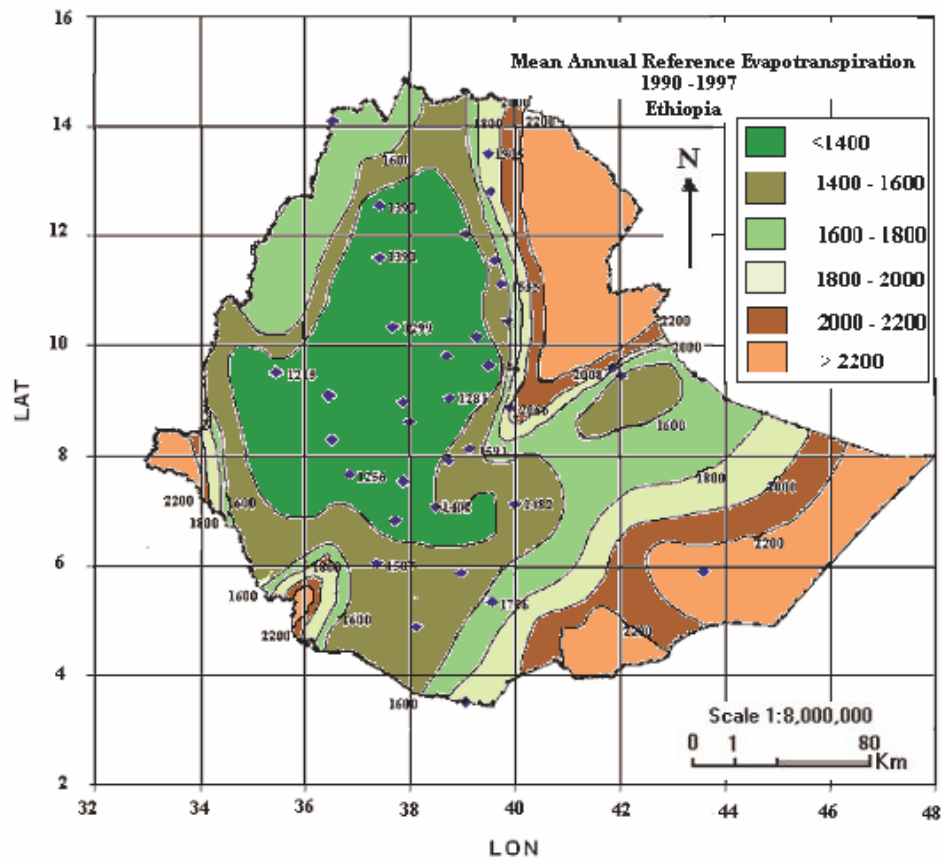
Source: National Meteorological Service Agency, 2004



Definition of code

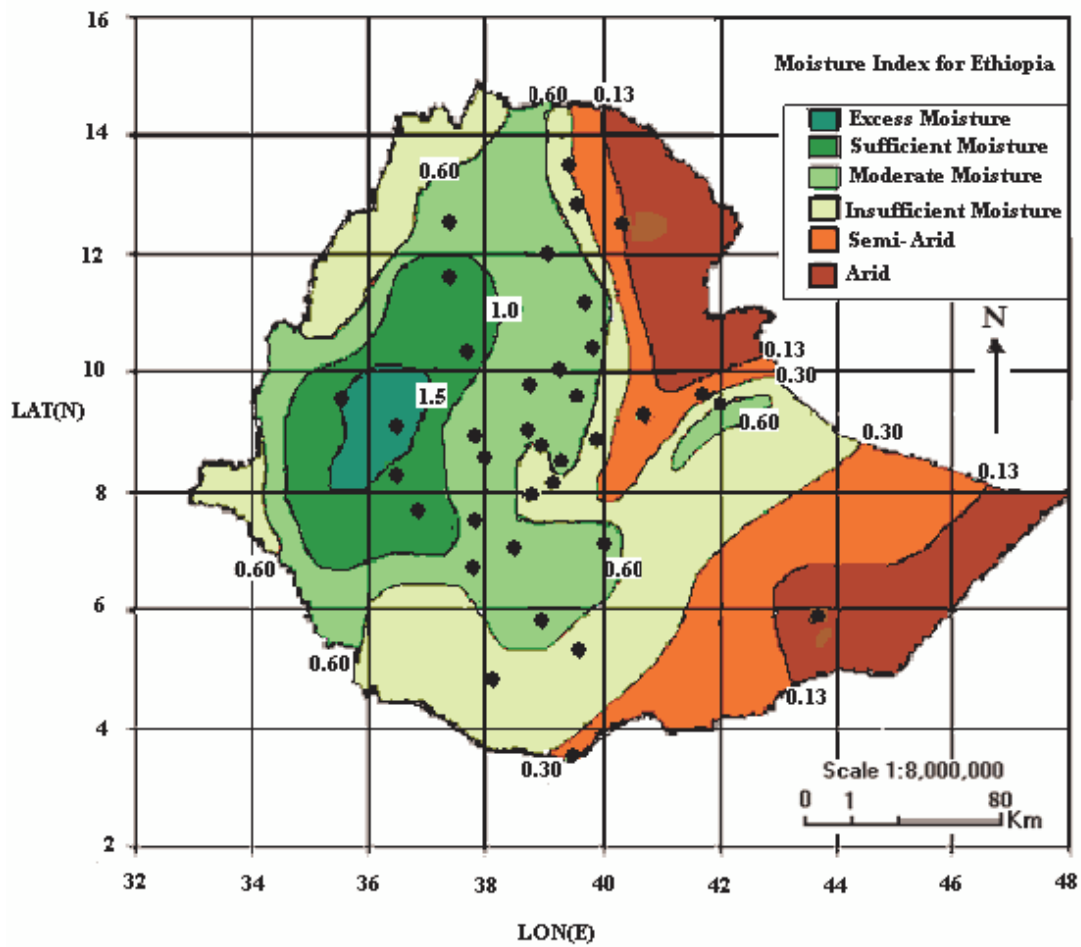
Station	CODE	Station	CODE	Station	CODE	Station	CODE
A. Robe	AR	Degahabur	DH	Holleta	HL	Mieso	MS
A.A. Bole	AA	D.Zeit	DZ	Hossaina	HS	Moyale	ML
Adigrat	AG	D/Dawa	DD	Jijiga	JJ	M/Selam	MSL
Adwa	AD	D/Mena	DOM	Jimma	JM	Nedjo	NJ
Aira	AI	D/Odo	DO	Jinka	JN	Negelle	NG
Alem Ketema	ALK	Dilla	DL	K/Mingist	KM	Pawe	PW
Alemaya	AL	Dangla	DG	K.Dehar	KD	Nekemte	NK
Alge	ALG	Dm.Dolo	DMD	Kachise	KA	Robe	RB
Ambo	AMB	Dubti	DBT	Koffele	KF	Sawla	SW
Arbaminch	AM	Ejaji	EJ	Konso	KN	Sekoru	SK
Asaita	AS	Enwary	EN	Kulumsa	KL	Senkata	SN
Asela	ASL	Fiche	FC	Lalibela	LL	Shambu	SH
Assosa	ASO	Filtu	FL	M.Meda	MM	Shire	SHR
Awassa	AW	Gambela	GM	M/Abaya	MAB	Shola Gebeya	SG
Aykel	AK	Gelemso	GL	Maichew	MY	Sirinka	SR
B. Dar	BD	Ginir	GN	Majete	MJ	Sodo	SD
Bati	BA	Gode	GD	Masha	MA	Wegel Tena	WT
Bedelle	BDL	Gonder	GDR	Mekele	MK	Woliso	WL
BUI	BU	Gore	GR	Merraro	MR	Woreilu	WI
Combolcha	CB	H/Mariam	HM	Metehara	MT	Yabello	YB
D. Markos	DM	D. Tabor	DT	Humera	HU	Nazareth	NT
D.Berehan	DB	Harer	HR	Metema	MTM	Ziway	ZW

Source: National Meteorological Service Agency (Agro meteorological Team), 2004



MAP 2. Mean Annual Reference Evapo-transpiration over Ethiopia [1990 –1997]

Source: Almaz Demessie (MSc Dissertation, University of Reading, UK, September 2002)
National Meteorological Service Agency, 2004



MAP 3. Moisture index for Ethiopia

Source: Almaz Demessie (MSc Dissertation, University of Reading, UK, September 2002)
National Meteorological Service Agency, 2004

1.3. Climatic Zones and Their Mean Temperature and Mean Annual Rainfall

Climatic Zones	Mean Temperature ⁰ c	Mean Annual Rainfall (mm)
Dry climate		
<i>Hot Arid Climate</i>	27	<450
<i>Hot Semi-Arid Climate</i>	18-27	410-820
<i>Cool Semi-Arid Climate</i>	<18	410-820
Tropical Rainy Climate		
<i>Tropical Climate I</i>	>18	680-1200
<i>Tropical Climate II</i>	>18	680-2000
<i>Tropical Climate III</i>	>18	1200-2800
Temperate Rainy Climate		
<i>Warm Temperate Climate I</i>	>18	>640
<i>Warm Temperate Climate II</i>	<18	
<i>Cool Highland Climate III</i>	≤10	800-2000

Source: Environmental Protection Authority, 1997

2. Vegetation and Land Use

2.1. NDVI [normalized difference vegetation index]

not known

2.2. Vegetation cover (% of total land area)

63.1 percent

2.3 Land Utilization as % national total (2000)

Region	Cultivated	Forest	Plantation	Woodland	Shrub Land	Grassland	Afro-alpine	Highland Bamboo	Lowland Bamboo	Swamp	Water	Bare rock, soil, etc.	Urban	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Oromya	45	63	13	33	29	29	73	0	0	17	31	8	1	31.4
SNNPR ¹	17	19	47	5	9	12	0	100	0	0	18	0	0	9.1
Gambella	1	13	0	4	1	7	0	0	0	31	0	0	0	2.8
Dire Dawa	0	0	0	0	0	0	0	0	0	0	0	0	4	0.1
Harari	0	0	0	0	0	0	0	0	0	0	0	0	2	0.
Amhara	27	2	40	4	16	18	26	0	0	15	37	8	1	13.8
Tigray	7	0	0	1	7	8	0	0	0	0	1	2	4	4.5
B.G. ²	1	2	0	8	5	1	0	0	100	1	2	1	0	4.4
Afar	0	1	0	1	11	10	0	0	0	6	10	31	0	8.3
Somali	2	0	0	45	20	15	0	0	0	31	0	51	1	25.5
A.A. ³	0	0	0	0	0	0	0	0	0	0	0	0	87	0.1
National %	18.60	3.56	0.44	25.81	23.06	12.77	0.21	0.03	0.43	0.71	0.72	13.41	0.06	99.81

1: Southern Nations/Nationalities Peoples Region; 2: Benishangul-Gumuz; 3: Addis Ababa

Source: Ministry of Agriculture & Rural Development, 2000

2.4. Surface albedo

map not available

3. Water Resource

3.1. Fresh water availability: the total annual runoff is estimated at 122.19 Billion m³

3.2. Water Allocation Based On Use/Demand (Million M³)

No	Purpose	1990	2000	2010
1	Drinking and domestic utilities	1,480	2,210	3,390
2	Agriculture	2,230	7,600	11,400
	2.1 Livestock	230	400	700
	2.2 Irrigation	2000	7200	10,700
3	Industry	100	310	960
4	Hydropower	2,621	57,439	66,972
Total		6,431	67,559	82,722

Source: Ministry of Water Resources, 2004

4. Energy

4.1. Consumption

Type	Quantity
Energy use per capita	278 Kg OE(kilogram oil equivalent)
Agricultural energy use per hectare	Data not available
Source of renewable energy excluding combustible renewable energy and wastes	0.93% in 1999

Source: Ethiopian Rural Energy Development & promotion center, 2004

4.2. Domestic & Industrial Renewable Energy Consumption (Tera-Joules) 1998/99

Sector	Woody Biomass
Domestic	550,706
Industry	39,432
Agriculture	N.A

Source: Ethiopian Rural Energy Development & promotion center, 2004

5. Types of Land degradation

5.1 Erosion

Type of land degradation	Area (in millions of hectares)
Erosions (wind and water)	
Seriously eroded	14 Million Ha
Moderately eroded	13 Million Ha

Source: Ministry Of Natural Resource and Environmental Protection, 1994

5.2 Deforestation Estimates by Forest Types (Ha) 1994-2003

Type	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
High forest	270897	118355	99601	73025	57182	48235	66,036	76,412	73,875	76,723
Woodland	83720	77929	75460	79195	83379	85365	86,611	91,038	95,633	96,323
Shrubland	44678	51432	56752	59377	77242	70164	68,051	65,548	61,854	58,685

Source; Ministry of Agriculture & Rural Development, 2004

5.3. Frequency of Forest Fire 1990-2004

	1990	1991	1992	1993	1994	2000	2001	2002	2003
Total No. Of significantly large forest fire	4	2	1	20	1	>120	5	-	2

Source: Ministry of Agriculture & Rural Development, 2004

5.4. Rehabilitation Activities Carried Out [1997-1999]

No	Activities	Unit	1979-1991	1992-1999	Total
1	Farm Bunds	Ha	1, 059,779	1,081, 129	2, 140, 898
2	Hillside Bund Construction	Ha	208, 668	1, 083,496	1, 292, 164
3	Terracing	Km	6, 070	66, 034	72, 104
4	Micro Basin	No	40, 433, 000	15, 000	40,400,000
5	Cut-Off Dram	Km	285	10, 980	11, 265
6	Drainage /Diversion Channel	Km	179	3, 593	3, 772
7	Area Closure	Ha	350, 000	48, 000	398, 000
8	Seedling Raising	No	1,000,000,000	1,500,000,000	2,500,000,000
9	Plantation	Ha	662,000	256,000	918, 000
10	Road Construction	Km	18,672	11,292	29, 964
11	Micro dam Construction	No	133	-	133
12	River Diversion	No	1,246	2,920	4, 166
13	Pond Construction	No	1,298	690	1, 988
14	Stream Development	No	3,880	105,762	109, 642

Source: Ministry of Agriculture Rural Development, 2004

7. Population and the Economy

7.1 Population

Total Population (National): 71.07 million (2004)

Urban = 11.2 million (15.8 %) and Rural = 59.9 million (84.2%)

7.1 Total Population of Ethiopia by Sex, Region, Urban and Rural, July 1/2004,

Region	Urban In thousands			Rural In thousands			Total In thousands		
	M	F	Total	M	F	Total	M	F	Total
Tigray	368	378	746	1,657	1,710	3,367	2,025	2,088	4,113
Afar	65	52	117	676	537	1,213	741	589	1,330
Amhara	1,003	1,002	2,005	8,067	8,071	16,138	9,070	9,073	18,143
Oromiya	1,601	1,606	3,207	10,923	10,968	21,891	12,524	12,574	25,098
Somali	361	310	671	1,851	1,587	3,438	2,212	1,897	4,109
Benishangul-Gumuz	28	28	56	271	267	538	299	295	594
SNNP*	578	585	1,163	6,423	6,499	12,922	7,001	7,084	14,085
Gambella	22	21	43	97	94	191	119	115	234
Harari	58	56	114	36	35	71	94	91	185
Addis Ababa	1,348	1,457	2,805	0	0	0	1,348	1,457	2,805
Dire Dawa	136	136	272	49	49	98	185	185	370
Total (National)	5,568	5,631	11,199	30,050	29,817	59,867	35,618	35,448	71,066

*Southern Nations, Nationalities and People

Source: CSA, 2004

7.2 Mortality, growth rate and life expectancy of Ethiopia on regional basis

Region	Infant Morality Rate For 1000 living births	Under 5 Mortality For 1000 living births	Annual Average Population Growth rate (%)	Life Expectancy (2001-2005)	
	2000	2000	2000-2005	Male	Female
Tigray	104	169	2.67	51.95	54.85
Afar	129	229	2.22	54.35	48.25
Amhara	112	183	2.67	53.35	55.95
Oromiya	116	194	2.87	52.95	55.45
Somali	99	184	2.63	58.70	55.40
Benishangul-Gumuz	98	198	2.54	50.05	51.05
SNNP	130	192	2.92	51.35	53.45
Gambella	123	233	2.57	57.55	58.25
Harari	118	191	3.40	55.55	54.65
Addis Ababa	81	114	2.80	60.35	64.05
Dire-Dawa	106	176	3.80	54.05	55.75
Ethiopia	97	166	2.73	53.42	55.43

Source: CSA, 2004

7.3 Per capita GDP (in USD) = 91.39 (CSA, 2002/2003)

7.4 GNP (in USD) = 6,317,812,500 (CSA, 2002/2003)

7.5 Proportion of the poor (living below the poverty datum line as percentage of the total Population) = 44.2 % (MoFED, 1999/ 00)

7.5 Crops production (2001/ 02)

All seasons major crops (cereals, oil seeds, pulses and others) and permanent crops production (data for private holdings only)

Crop Types	Cultivated land in '000' hectares	%	Production in '000'QT	%
Grain crops	8,803.8	100	104,714	100
• Cereals	7,187.4	81.6	91,599.7	87.5
• Pulses	1,178.2	13.4	10,976.1	10.5
• Oilseeds	438.2	5.0	2,138.2	2.0
Vegetables	90.6	-	3,763.8	-
Root crops	265.8	-	18,771.1	-
Fruit crops	36.8	-	2,041.5	-
Stimulant crops	373.2	-	2,728.7	-
Sugar cane	23.8	-	22,322.3	-
Total	9594	-	154341.4	-

Source: CSA, 2004

7.7 Livestock production (2001/02)

Type	Quantity
Cow milk	2,591, 187, 141 Liters
Camel milk	114, 846, 928 Liters
Honey production	32, 985, 473 Kg

Source: CSA, 2004

8. Human Development

8.1 Literacy rates: primary education rates as percentage of age group

School age population and gross enrollment ratios by Region and Sex (2002/03)

Region	School age population (7-14)			Gross Enrollment Ratio		
	Both	Boys	Girls	Both	Boys	Girls
Tigray	803,330	407,848	395,481	73.7	74.2	73.1
Afar	246,938	139,739	107,199	13.8	15.7	11.5
Amhara	3,479,717	1,754,210	1,725,506	58.5	62.9	53.9
Oromiya	4,904,552	2,473,052	2,431,500	66.9	8.6	51.0
Somali	817,864	444,616	373,248	15.1	19.4	10.0
Benishangul-Gumuz	117,188	59,902	57,286	98.4	121.2	74.5
SNNPR	2,731,360	1,375,974	1,355,386	71.8	88.1	55.1
Gambella	41,022	21,169	19,853	124.6	154.0	93.3
Hararri	27,113	13,921	13,196	105.7	121.4	89.2
Addis Ababa	352,766	171,306	181,460	135.4	131.3	139.2
Dire Dawa	55,485	28,256	27,229	78.6	8.8	69.0
Total (regular + evening): national	13,577,33	6,889,993	6,687,341	64.4	74.6	53.8
			Regular	63.1	73.7	52.6
			Evening	1.3	1.3	1.2

Source: ministry of Education, 2003

8.2 Number of Rural Women = 29.8 Million (CSA, July, 2004)

8.2 Unemployment rate (1999)

	Total	Male	Female
National	8.1	4.36	12.5
Rural	5.0	2.4	8.6
Urban	25.7	17.9	33.2

Source: CSA, 2004

8.4 Unemployment Rate on regional basis

Region	Level of unemployment rate (%)1999
Tigray	6.06
Afar	10.37
Amhara	7.65
Oromiya	6.12
Somali	12.84
Benishangul-Gumuz	5.17
SNNP	5.80
Gambella	12.54
Harari	21.50
Addis Ababa	37.76
Dire-Dawa	24.59
Ethiopia	8.06

8.5 Illiteracy total (% age 15 and above) = 70.6% (WMS, 1999/2000)

8.6 Illiteracy male (% age 15 and above) = 60%

8.7 Illiteracy Female (% age 15 and above) = 80.5%

9. Science & Technology

9.1 Scientific institutions working on desertification 20

10. Additional Information

10.1 location of regional states

Region	Longitude (East)	Latitude (North)
Afar	39 ⁰ 51 ¹ -42 ⁰ 23 ¹	8 ⁰ 40 ¹ -14 ⁰ 27 ¹
Amhara	36 ⁰ 20 ¹ -40 ⁰ 20 ¹	9 ⁰ 20 ¹ -14 ⁰ 0 ¹
Addis Ababa	38 ⁰ 50 ¹ -39 ⁰ 50 ¹	8 ⁰ 55 ¹ -9 ⁰ 05 ¹
Benishangul Gumuz		
Dire Dawa	41 ⁰ 33 ¹ -42 ⁰ 19 ¹	9 ⁰ 27 ¹ -9 ⁰ 49 ¹
Gambella	33 ⁰ 0 ¹ -35 ⁰ 20 ¹	7 ⁰ 0 ¹ -8 ⁰ 17 ¹
Harari	42 ⁰ 15 ¹ -42 ⁰ 45 ¹	9 ⁰ 5 ¹ -9 ⁰ 20 ¹
Oromia	34 ⁰ 5 ¹ -43 ⁰ 11 ¹	3 ⁰ 40 ¹ -10 ⁰ 35 ¹
Somali	40 ⁰ 46 ¹ -47 ⁰ 58 ¹	3 ⁰ 56 ¹ -11 ⁰ 0 ¹
SNNP	34 ⁰ 21 ¹ -39 ⁰ 11 ¹	4 ⁰ 27 ¹ -8 ⁰ 30 ¹
Tigray	36 ⁰ 27 ¹ -39 ⁰ 59 ¹	12 ⁰ 15 ¹ -14 ⁰ 50 ¹
Ethiopia	33 ⁰ - 48 ⁰	3 ⁰ - 15 ⁰

10.2 location of towns

No	Name of town	Coordinates		Location	
				Region	Zone/Woreda
1	Humera	14 ⁰ 16'N	36 ⁰ 33'E	Tigray	Western Zone
2	Shiraro	14 ⁰ 24'N	37 ⁰ 55'E	Tigray	Tahthay Abiyabo
3	Endaselasie	14 ⁰ 05'N	38 ⁰ 16'E	Tigray	Tahthay Koraro
4	Adwa	14 ⁰ 11'N	38 ⁰ 53'E	Tigray	Adwa
5	Axum	14 ⁰ 31'N	38 ⁰ 43'E	Tigray	Laelay Maychew
6	Zalambessa	14 ⁰ 31'N	39 ⁰ 22'E	Tigray	Gulomahada
7	Adigrat	14 ⁰ 17'N	39 ⁰ 27'E	Tigray	Ganta Afeshum
8	Wukro	14 ⁰ 07'N	38 ⁰ 35'E	Tigray	Wukro
9	Kuha	13 ⁰ 27'N	39 ⁰ 32'E	Tigray	Enderta
10	Maychew	12 ⁰ 46'N	39 ⁰ 32'E	Tigray	Endamehoni
11	Alamata	12 ⁰ 24'N	39 ⁰ 32'E	Tigray	Alamata
12	Korem	12 ⁰ 30'N	39 ⁰ 3'E	Tigray	Ofca
13	Mekele	13 ⁰ 30'N	39 28'E	Tigray	Mekele
14	Ayisaita	11 ⁰ 34'N	41 ⁰ 25'E	Afar	Ayisaita
15	Dubti	11 ⁰ 44'N	40 ⁰ 04'E	Afar	Dubti
16	Awash Sebat Kilo	8 ⁰ 59'N	40 ⁰ 09'E	Afar	Awash Fntale
17	Gewane	10 ⁰ 09'N	40 ⁰ 38'E	Afar	Gewane
18	Dekark	13 ⁰ 09'N	37 ⁰ 53'E	Amhara	Debark
19	Ayikel	12 ⁰ 30'N	37 ⁰ 04'E	Amhara	Chilga
20	Gonder	12 ⁰ 36'N	37 ⁰ 28'E	Amhara	Gondar
21	Adis Zemen	12 ⁰ 05'N	37 ⁰ 45'E	Amhara	Kemtem
22	Wereta	11 ⁰ 55'N	37 ⁰ 41'E	Amhara	Kemtem
23	Debre-Tabor	11 ⁰ 51'N	38 ⁰ 00'E	Amhara	Debre-Tabor
24	Lalibela	12 ⁰ 02'N	39 ⁰ 02'e	Amhara	Bugena
25	Kobo	12 ⁰ 02'N	39 ⁰ 37'E	Amhara	Kobo
26	Woldiya	11 ⁰ 49'N	39 ⁰ 35'E	Amhara	Woldiya
27	Hayik	11 ⁰ 21'N	39 ⁰ 42'E	Amhara	Tehuledere
28	Debre-sina	9 ⁰ 50'N	39 ⁰ 45'E	Amhara	Mafud-Mezezo
29	Kombolcha	11 ⁰ 04'N	39 ⁰ 44'E	Amhara	Kombolcha
30	Dessie	11 ⁰ 07'N	39 ⁰ 38'E	Amhara	Dessie
31	Mehal-Mea	10 ⁰ 18'N	3938'E	Amhara	Geramiderna Keya Gebriel
32	Ataye(Efeson)	10 ⁰ 21'N	39 ⁰ 57'E	Amhara	Efratana Gidim
33	Shewa-Robit	10 ⁰ 00'N	39 ⁰ 57'E	Amhara	Kewet
34	Debre-Berhan	9 ⁰ 40'N	39 ⁰ 31'E	Amhara	Debe-Berhan Zuria
35	Mota	11 ⁰ 04'N	37 ⁰ 52'E	Amhara	Hulet Ej Enes
36	Bichena	10 ⁰ 27'N	38 ⁰ 11'E	Amhara	Enemay
37	Dejen	10 ⁰ 10'N	38 ⁰ 07'E	Amhara	Dejen
38	Debre-Markos	10020'N	37 ⁰ 43'E	Amhara	Debre-Markos
39	Adet	N		Amhara	Adet
40	Finote-Selam	10 ⁰ 41'N	37 ⁰ 15'E	Amhara	Jabi Tehnan
41	Bure	10 ⁰ 41'N	37 ⁰ 04'E	Amhara	Bure-Wemberma
42	Sekota	12 ⁰ 37'N	39 ⁰ 01'E	Amhara	Sekota
43	Dangela	11 ⁰ 04'N	36 ⁰ 41'E	Amhara	Dangela
44	Chagini	10 ⁰ 57'N	36 ⁰ 30'E	Amhara	Guangua
45	Kemise	10 ⁰ 43'N	39 ⁰ 51'E	Amhara	Chefe-Golana
46	Bati	11 ⁰ 11'N	40 ⁰ 00'E	Amhara	Bati
47	Bahir-Dar	11 ⁰ 33'N	37 ⁰ 22'E	Amhara	Bahir-Dar
48	Mendi	9 ⁰ 47'N	35 ⁰ 06'E	Oromiya	Mana-Sibu
49	Ngo	9 ⁰ 30'N	35 ⁰ 29'E	Oromiya	Nejo
50	Gimbi	9 ⁰ 10'N	35 ⁰ 50'E	Oromiya	Gimbi
51	Dembi-Dolo	8 ⁰ 32'N	34 ⁰ 46'E	Oromiya	Sayo
52	Shambu	9 ⁰ 33'N	37 ⁰ 05'E	Oromiya	Hjimma Horo
53	Fincha	9 ⁰ 33'N	37 ⁰ 22'E	Oromiya	Abay Chomen

No	Name of town	Coordinates		Location	
				Region	Zone/Woreda
54	Sire	9 ⁰ 2'N	36 ⁰ 51'E	Oromiya	Sibu Sire
55	Nekemte	9 ⁰ 05'N	36 ⁰ 22'E	Oromiya	Guto Wayu
56	Arjo	8 ⁰ 45'N	36 ⁰ 29'E	Oromiya	Jimma Arjo
57	Bedele	8 ⁰ 26'N	30 ⁰ 20'E	Oromiya	Bedele
58	Metu	8 ⁰ 17'N	35 ⁰ 34'E	Oromiya	Metu
59	Gore	8 ⁰ 08'N	35 ⁰ 32'E	Oromiya	Ale
60	Gnet (limu-Genet)	8 ⁰ 05'N	36 ⁰ 56'E	Oromiya	Limu Kosa
61	Jimma	7 ⁰ 40'N	36 ⁰ 50'E	Oromiya	Kersa
62	Agaro	7 ⁰ 51'N	36 ⁰ 39'E	Oromiya	Goma
63	Asendado	7 ⁰ 46'N	37 ⁰ 13'E	Oromiya	Omonada
64	Ambo	8 ⁰ 58'N	37 ⁰ 51'E	Oromiya	Ambo
65	Guder	8 ⁰ 58'N	37 ⁰ 45'E	Oromiya	Ambo
66	Bako	9 ⁰ 07'N	37 ⁰ 03'E	Oromiya	Bako Tibe
67	Ginchi	9 ⁰ 01'N	38 ⁰ 08'E	Oromiya	Denbi
68	Addis-Alem	9 ⁰ 02'N	38 ⁰ 23'E	Oromiya	Eherie
69	Holeta-Genet	9 ⁰ 05'N	38 ⁰ 30'E	Oromiya	Walmara
70	Sebeta	8 ⁰ 45'N	38 ⁰ 38'E	Oromiya	Alem-Gena
71	Wolisso	8 ⁰ 31'N	37 ⁰ 58'E	Oromiya	Wolisso
72	Tulu-Bolo	8 ⁰ 39'N	38 ⁰ 12'E	Oromiya	Becho
73	Gebre-Gurach			Oromiya	Kuyu
74	Fiche	9 ⁰ 47'N	38 ⁰ 44'E	Oromiya	Gerar Jarso
75	Metehara	8 ⁰ 54'N	39 ⁰ 54'E	Oromiya	Fentale
76	Adama/Nazret	8 ⁰ 32'N	39 ⁰ 16'E	Oromiya	Adama
77	Mojo	8 ⁰ 25'N	39 ⁰ 07'E	Oromiya	Lome
78	Debre-Zeit	8 ⁰ 44'N	38 ⁰ 59'E	Oromiya	Ada'a
79	Meki	8 ⁰ 09'N	38 ⁰ 48'E	Oromiya	Digda Bora
80	Ziway	7 ⁰ 56'N	38 ⁰ 42'E	Oromiya	Jido Kombolcha
81	Arsi Negele	7 ⁰ 21'N	38 ⁰ 40'E	Oromiya	Arsi Negelle
82	Shashemene	7 ⁰ 11'N	38 ⁰ 35'E	Oromiya	Shashemene
83	Iteya	8 ⁰ 08'N	39 ⁰ 13'E	Oromiya	Hitosa
84	Huruta	8 ⁰ 09'N	39 ⁰ 20'E	Oromiya	Hitosa
85	Robe	7 ⁰ 51'N	39 ⁰ 38'E	Oromiya	Robe
86	Asela	7 ⁰ 57'N	39 ⁰ 08'E	Oromiya	Tiyo
87	Bekoji	7 ⁰ 31'N	39 ⁰ 14'E	Oromiya	Bekoji
88	Kofele	7 ⁰ 04'N	38 ⁰ 48'E	Oromiya	Kofele
89	Asasa	7 ⁰ 06'N	39 ⁰ 11'E	Oromiya	Gedeb
90	Hirna	9 ⁰ 12'N	14 ⁰ 06'E	Oromiya	Tulo
91	Asebe-Teferi	9 ⁰ 05'N	40 ⁰ 51'E	Oromiya	Chiro
92	Gelemso	8 ⁰ 48'N	40 ⁰ 30'E	Oromiya	Habro
92	Bedesa	8 ⁰ 53'N	40 ⁰ 46'E	Oromiya	Kuni
94	Babile	9 ⁰ 13'N	42 ⁰ 19'E	Oromiya	Babile
95	Alemaya	9 ⁰ 27'N	41 ⁰ 55'E	Oromiya	Haro-Maya
96	Deder	9 ⁰ 18'N	41 ⁰ 46'E	Oromiya	Deder
97	Dodola	6 ⁰ 58'N	39 ⁰ 10'E	Oromiya	Dodola
98	Ginir	7 ⁰ 08'N	40 ⁰ 24'E	Oromiya	Ginir
99	Robe	7 ⁰ 07'N	39 ⁰ 59'E	Oromiya	Sinana-Dinsho
100	Goba	7 ⁰ 00'N	39 ⁰ 58'E	Oromiya	Goba
101	Kibre-Mengist	5 ⁰ 52'N	38 ⁰ 58'E	Oromiya	Adolana Wodera
102	Shakiso	5 ⁰ 45'N	38 ⁰ 55'E	Oromiya	Odo Shakiso
103	Hagere-Mariam	5 ⁰ 38'N	38 ⁰ 13'E	Oromiya	Hagere-Mariam

No	Name of town	Coordinates		Location	
				Region	Zone/Woreda
104	Yabelo	04 ⁰ 53'N	38 ⁰ 05'E	Oromiya	Yabelo
105	Negele	5 ⁰ 20'N	39 ⁰ 34'E	Oromiya	Liben
106	Moyale	3 ⁰ 32'N	35 ⁰ 02'E	Oromiya	Moyale
107	Jijiga	3 ⁰ 20'N	4247'E	Somali	Jijiga
108	Awbere	9 ⁰ 27'N	43 ⁰ 17'E	Somali	Awbere
109	Degohabur	9 ⁰ 13'N	43 ⁰ 33'E	Somali	Degohabur
110	Warder	6 ⁰ 58'N	45 ⁰ 20'E	Somali	Warder
111	Kebridahir	6 ⁰ 44'N	44 ⁰ 16'E	Somali	Kebridahir
112	Gode	6 ⁰ 06'N	43 ⁰ 00'E	Somali	Gode
113	Kelafo	5 ⁰ 36'N	44 ⁰ 07'E	Somali	Kelafo
114	Softu			Somali	Dolo Odo
115	Dolo	4 ⁰ 10'N	42 ⁰ 04'E	Somali	Dolo Odo
116	Asosa	1 ⁰ 04'	34 ⁰ 31'E	Benishangul gumuz	Asosa
117	Welkite	8 ⁰ 16'	37 ⁰ 46'E	SNNP	Goro
118	Butajjira	8 ⁰ 06'	38 ⁰ 22'E	SNNP	Meskanena Mareko
119	Hasaena	7 ⁰ 32'	37 ⁰ 51'	SNNP	Limo
120	Shone	7 ⁰ 07'	37 ⁰ 56'	SNNP	Badawacho
121	Alaba Kulito	7 ⁰ 19'	38 ⁰ 04'	SNNP	Alaba
122	Awassa	7 ⁰ 03'	38 ⁰ 28'	SNNP	Awassa
123	Aleta -wendo	6 ⁰ 36'	38 ⁰ 11'E	SNNP	Aleta Wendo
124	Dila	6 ⁰ 24'	38 ⁰ 18'E	SNNP	Wenago
125	Yirga-chefe	6 ⁰ 09'	38 ⁰ 11'E	SNNP	Wenago
126	Areka	7 ⁰ 04'	37 ⁰ 42'E	SNNP	Boloso Sscore
127	Boditi	6 ⁰ 57'	37 ⁰ 51'	SNNP	Damot Gale
128	Sodo	6 ⁰ 54'	37 ⁰ 54'	SNNP	Sodo Zuria
129	Sawla	6 ⁰ 18'	36 ⁰ 52'	SNNP	Gofa Zuria
130	Arba-minch	5 ⁰ 57'	37 ⁰ 32'	SNNP	Arba-minch Zuria
131	Jinka	5 ⁰ 39'	36 ⁰ 38'	SNNP	Bako Gazer
132	Bonga	7 ⁰ 16'	36 ⁰ 14'	SNNP	Gimbo
133	Masha	7 ⁰ 14'	35 ⁰ 28'	SNNP	Masha Anderacha
134	Mizan	6 ⁰ 59'	35 ⁰ 35'	SNNP	Bench
135	Gidole	5 ⁰ 38'	37 ⁰ 51'	SNNP	Derashe special Woreda
136	Gambella	8 ⁰ 14'	34 ⁰ 35'	Gambella	Gambella
137	Harer	9 ⁰ 18'	42 ⁰ 07'	Harari	Main town
138	Addis Ababa	9 ⁰ 01'	38 ⁰ 44'	Addis Ababa	Capital City
139	Dire-Dawa	9 ⁰ 35'	41 ⁰ 25'	Dire-Dawa	City

Source: Ethiopia mapping Authority

Annex II Principles of RADPS most relevant for Combating Desertification and Drought

a) Improving Farming Skills

The policies and strategies underline the need to enhance the productive capacity of farmers and enable them improve their productivity through the provision of agricultural extension and advisory service on a continuous basis. Efforts aimed at creating a new generation of farmers who can be instrumental for a rapid agricultural development is indispensable for transformation of the rural economy, the policies and the strategies states.

The specific strategy is to select secondary school complete students and train them in agricultural skill at agricultural vocational training centers for three years. Out of those trained under such schemes at least three (one each in agricultural crop, animal and natural resources, and irrigation), will be assigned to each farmer's association areas. These trained personnel will perform two main tasks. First, they will provide agricultural extension and advisory services to both the skilled and unskilled farmers in each farmer association area making sure that these initiatives are compatible with the existing pool of the agricultural knowledge of the farmers. Second, they will also provide agricultural training to educate youths at agricultural demonstration stations to be established in every farmer's association areas. In this respect, they will become agricultural trainers and teachers.

b) Improving the Supply, Replication and Dissemination of Technology

The existence of different agro-ecological zones in the country necessitated the adoption of techniques compatible with these specific circumstances, in accordance with the country's rural and agricultural policies & strategies. These provisions also emphasize that, in the initial period at least; the selected technologies need to be labor using rather than labor displacing. In the process, the technologies help produce outputs that have effective demand such that farmers sell them at competitive prices generating sustainable incomes.

c) Ensuring access to Land and Tenure Security

The land tenure policy states that land belongs to the people and that the federal and regional governments administer it on behalf of the people. The policy stipulates that every farmer who wants to make a livelihood from farming is entitled to have a plot of land free of charge. This policy states, if the Government, for one reason or another takes the land; compensation will be paid for the capital invested in the land. It also claims that the farmer has not only user-rights on the land, but he/she can rent it out to third persons.

When private investors wish to engage themselves in agricultural activities, they can have access to land on a long-term lease basis. In the lowlands, there are large unsettled tracts of land that can be developed with either rain-fed agriculture or irrigation as deemed feasible. Hence, the government's policy emphasizes to expand medium and large commercial farming in the low lands to ensure that such initiatives are not displacing existing settled farmers. The government has already considered the need for putting a system in place that enables farmer to rent out their land for longer periods and make it possible to execute this legally and equitably based on transparent rules and regulation. In order to protect the user rights of farmers, their land holdings should be registered and provided with certificate of user rights. In this regard, a guarantee may be given to the effect that land will not be re-

divided for a period ranging from 20-30 years. Some regional states have already started implementing this aspect of the land use tenure and are a step in the right direction. The strategy is that this would be further strengthened in those regional states where implementation of this policy has already started and the feasibility of introducing them in the rest of the regions would be sought.

The policies and strategies confirm that protecting user rights of the farmer definitely mitigates the problem of tenure security, but does not solve the problem of non-availability of land for young farmers. To address this, the plan is to improve land use and productivity as well as employ technologies that use more labor resources creating job opportunities on the farm. Voluntary resettlement programs are also employed by the Government to alleviate land shortage as well as to develop uncultivated land.

d) Drought Prone Regions

Regions that are subject to intermittent or inadequate rainfall are commonly described as Ethiopia's drought-prone areas. These are also regions where years of imprudent land use have caused considerable land degradation. Although food insecurity is experienced practically in all parts of the country, it is most intensely felt in these regions. The development efforts that need to be launched in these regions should focus on ensuring food security via improved productivity, expansion of off-farm activities and adoption of price policies more conducive to close their minimum food gap.

The policies and strategies advocate that in the long and medium term, the focus will be on reducing the country vulnerability to drought and other natural calamities. Improvement in water resources development and utilization, natural resources protection and improvement in agricultural technology will help reduce these vulnerabilities. In the mean time, disaster prevention and preparedness will help reduce the exposure of people in such areas to these dangers and disasters. Having recognized the disincentive effect of managing in kind food assistance through its impact on food prices for local surplus producers, attempts have been made to switch to cash for work programs in which food assistance is procured domestically from surplus producing regions. Resettling people from drought prone areas to areas where there is land and adequate rainfall is part of the government strategies that would help realize the objective of food security in the medium and long-term. It was also stipulated that the settlement programs should in the first instance be conducted within regions rather than across regions. Another dimension of dealing with the problems of drought-prone areas, according to the country's rural and agricultural policies and strategies, is to focus on natural resource protection and animal resources development in the areas themselves.

e) Improving the Agricultural Marketing System

The RADPS emphasize setting-up of a specified standard for agricultural products ahead of time to be observed by both suppliers and producers of agricultural commodities. National standards could be observed for products used locally and international standards for traded products. It also stipulates to inform both producers and consumers the need for these standards early enough. Information on price forecasts, quality of products, location of products and availability of commodity future needs have to be disseminated.

In a country where millions of farmers are engaged in subsistence agriculture, the role of cooperatives is very much recognized in developing improved marketing systems. Private

operators complement best cooperatives in the sphere. It was claimed that cooperatives play key role in reducing the time required for trade transactions and cutting marketing costs, thereby creating an efficient agricultural marketing structure. Cooperatives would also render vital services other than those related to agricultural marketing, such as,

- Expanding financial services in rural areas
- Purchase and lease of agricultural mechanisms
- Setting-up small agro-processing industries
- Establishing & providing various social service

A study on market and non-market incentives for farmer conservators participating in the community based on-farm *in suit* conservation of major food crops in Ethiopia was done by IBC.

f) Rural Finance

Enabling smallholder farmer's access to credit is part of the policies and strategies where they will use this to increase their output and earn more income. Rural credit is expected to improve productivity of farmers and ensure sustainable development of the agricultural sector. Hence, the policies and strategies provision seek to increase investment in agriculture and accelerate development of rural source of finance that can extend loans and credits to farmers in sufficient amounts. Cooperatives can serve as intermediaries between formal banks and smallholder farmers. Modern banks can extend loans and credits to cooperatives for investment and marketing activities to be undertaken by the latter. Cooperatives can lend loans and credits borrowed from banks. Besides, cooperatives can deposit their savings in banks and may also be served through other banking services.

The government will, therefore, give special assistance and support to rural finance, as they are important for rural development and for the creation of strong links between agricultural and other sectors, as well as for the development of a strong and efficient national financial system. Micro-finance institutions have been established in the different authentic administrative regions across the country. These micro-finance institutions have both credit and saving schemes that serve the farmers at the grass root level. The credit system provides the farmers with soft loans whereas the saving enables them to save earnings and builds up their capitals and assets. This micro-finance initiative is popular and widely accepted by smallholder farmers since it is transforming the rural economy. These micro-finance institutions are established in different names at different regions. Examples are Dedebit (Tigray Credit and Saving Association), Amhara Credit and Saving Institutions (ACSI), Oromiya Credit and Saving Association (OCSA), etc.

g) Energy

The rural electrification project is designed to address the establishment of agro-processing industries, commercial enterprises, irrigation facilities, health and education services; which impeded the development of rural towns.

The electricity supplied to rural towns is expected to reduce the consumption of woody biomass and petroleum products used for cooking, lighting and motive power. In addition, the electrification network to be constructed will enable the surrounding households and enterprises to acquire electricity service at affordable cost. The project is targeted to electrify 164 woreda towns and its estimated cost is about 160 million US Dollars.

h) Rural Telecom Development

In conformity with the government's economic policy, the Ethiopian Telecommunication Corporation (ETC) has set and been implementing a three years telecom development strategy geared towards the extension of telecom services to the rural parts of the country. The plan is to extend the services to all districts. Upon finishing implementation of this three years strategy, about 300 rural towns, mostly district towns, will be provided with telephone services. This helps to promote exchange of information in time for decision making, disseminate new technologies and pertinent packages for sustainable development, create awareness on environmental issues, etc.

Annex III Lists of On-going Projects under NAP/SRAP/RAP

No.	Name of projects	Time frame	Partners involved	Overall budget
1	Introduction of new Rice variety “New Rice of Africa”	2003-05	<ul style="list-style-type: none"> • UNDP • Japan government • Amhara Regional State 	0.18 million USD
2	Safety net project (Asset building at household level through public works and direct support)	2001 -06	<ul style="list-style-type: none"> • Food Security Coordination Bureau of MoARD • WB • CIDA • USAID • Italy • Amhara, Oromiya, Tigray and SNNPRS 	120 million USD (credit)
3	Drought recovery project	2003 -05	<ul style="list-style-type: none"> • Food Security Coordination Bureau of MoARD • WB • Amhara, Oromiya, Tigray, Afar, Somali and SNNPRS 	15 million USD (grant)
4	Integrated food security project	2003 -05	<ul style="list-style-type: none"> • Food Security Coordination Bureau of MoARD • EU • Amhara, Oromiya, Tigray and SNNPRS 	22 million EURO
5	Afar livestock recovery program	2004-05	<ul style="list-style-type: none"> • FAO • Afar & Oromiya Regional State 	1.1 million USD
6	Improving nutrition and household food security in north Shoa of Amhara regional state & southern zone of Tigray regional state	2003-04	<ul style="list-style-type: none"> • FAO • Amhara & Tigray Regional states 	4.23 million USD (FAO) 3.81 million USD (Govt)
7	Assistance to national capacity building for land degradation assessment and desertification control of Ethiopia	2003-05	<ul style="list-style-type: none"> • FAO • Federal govt. 	0.39 million USD (FAO) 0.029 million USD (Govt)

No.	Name of projects	Time frame	Partners involved	Overall budget
8	Demonstration of gravity drip irrigation systems in drought affected areas of the country	2004-06	<ul style="list-style-type: none"> • FAO • Tigray, Amhara, SNNP, Gambella, Afar, and Oromiya Regional States and Dire Dawa administrative Council 	0.40 million USD
9	Community based integrated watershed development approach to soil and water conservation	2004-05	<ul style="list-style-type: none"> • FAO • Tigray, Amhara, Oromiya and SNNP Regional states 	0.37 million USD/FAO 0.30 million USD/Govt
10	1998 food security program	2002-04	<ul style="list-style-type: none"> • EU • Tigray & Amhara Regional states 	24 million EURO
11	1999 Food security program	2000-03	<ul style="list-style-type: none"> • EU • Tigray Regional state 	15.5 million EURO
12	Strengthening the production and quality control of Gum and Resins in Africa	2003-05	<ul style="list-style-type: none"> • FAO • Ministry Agricultural & Rural development 	394,000 USD
13	Household energy/ protection of Natural resources project	2004-05	<ul style="list-style-type: none"> • BMZ • Ministry of Agriculture & Rural Development 	767,000 EURO
14	Off-grid rural electrification	5 years	<ul style="list-style-type: none"> • IDA • GER • EREDPC • Private sector • NGOs • CBOs 	13.4 million USD (IDA) 4.0 million USD/GEF/ 3 million USD/others donors/
15	Solar and wind energy resources assessment project	3 years	<ul style="list-style-type: none"> • UNEP • Ethiopian Rural Energy Development & Promotion Center 	117,000 USD (78% UNEP 22% Govt.)

No.	Name of projects	Time frame	Partners involved	Overall budget
16	DAP II	2004/07	<ul style="list-style-type: none"> • USAID • Dire-Dawa Agriculture & Health Offices • DPPC 	1.1 million USD
17	Legahare catchment Environmental Protection	2004/05	<ul style="list-style-type: none"> • Dire-Dawa Agricultural Development Office • Rural Development coordination Bureau • Community 	332,558 USD (Govt.)
18	Environmental Protection & Rehabilitation project	2001/04	<ul style="list-style-type: none"> • Govt. • ESRDF • Harari Region line Bureaus 	0.5 million UDD
19	Design of Food Security Strategy and Program	2003/04	<ul style="list-style-type: none"> • CIDA • Oxfam Canada • Benishangul-Gumuz Region Line-bureaus 	174,418 USD
20	Wondogenet Anasei forestry development project		<ul style="list-style-type: none"> • Govt. 	273, 1000 USD
21	Lamu participatory development project		<ul style="list-style-type: none"> • Govt. 	187,536 USD
22	Amhara-Mountain chain forestry development Project		<ul style="list-style-type: none"> • Govt. 	22,545 USD
23	Dera integrated rural development	2002-04	<ul style="list-style-type: none"> • Menshen fur Menshen (international NGO) 	4.9 million USD
24	Borena collaborative forest management	2002-05	<ul style="list-style-type: none"> • SOS-Sahel (International NGO) 	1.2 million USD
25	Admitulu community environmental protection	2000-05	<ul style="list-style-type: none"> • Selam Environmental (local NGO) 	0.57 million USD
26	Tolly integration rural development	2003-06	<ul style="list-style-type: none"> • Ethiopian Evangelical Church Mekane Yesus (EEMCY (international NGO) 	0.5 million USD
27	Tschallia integrated rural development	2003-06	<ul style="list-style-type: none"> • EEMCY 	0.26 million USD

No.	Name of projects	Time frame	Partners involved	Overall budget
28	Manasibu Environmental Rehabilitation	2003-06	• EEMCY	0.42 million USD
29	Dale Wereba Integrated rural development	2002-05	• EEMCY	0.17 million USD
30	Merko Watershed development	2001-04	• • Today and Tomorrow (local NGO)	0.39 million USD
31	Weliata zone integrated Rural development	2002-04	• Terpeza Development Association (local NGO)	0.37 million USD
32	Ajibar Agricultural development	2002-07	• World vision UK (International NGO)	3.4 million USD
33	Gurage Agricultural development	2000-05	• World vision Ethiopia (WVI International NGO)	2.8 million USD
34	Durame Agricultural development	2001-05	• WVI	2.4 million USD
35	Wonchi agricultural development	2000-05	• WVI	2.2 million USD
36	Epherata agricultural Development	2001-05	• WVI	2.4 million USD
37	Saesie Tseeda Emba Agricultural Development	2002-07	• WVI	2.5 Million USD
38	Boset agricultural development	2002-06	• WVI	2.4 Million USD
39	Hidhabu Abote agricultural development	2002-07	• WVI	2.6 Million USD
40	Angolela agricultural development	2002-06	• WVI	2.4 million USD
41	Nono agricultural development	2002-07	• WVI	1.9 Million USD
42	Addis Alem community based environmental conservation & development project	2002-04	• Jerusalem children and community development organization	54,623 USD

No.	Name of projects	Time frame	Partners involved	Overall budget
43	Addis Alem Delchatu dryland stream conservation based income generating scheme	2002-04	<ul style="list-style-type: none"> • Jerusalem children and community development organization 	20,349 USD
44	EENCD networking capacity	2004	<ul style="list-style-type: none"> • DCG • NORAGRIC • ENCCD 	4302 USD
45	Tokkee natural resources conservation and water supplies development project	2001-04	<ul style="list-style-type: none"> • Ethiopian Environmental NGO(EENGO) • CIDA • Sharing way 	93,675 USD
46	Konno soil and water conservation project	204-05	<ul style="list-style-type: none"> • Methodist Relief & Development Fund • EENGO 	88635 USD
47	Sellale Agricultural development & natural resource conservation and management program	2001-04	<ul style="list-style-type: none"> • EENGO • Pact • CIDA • FORTA 	100,159 USD
48	Rift valley Integrated Natural Resource Rehabilitation project	2 years	<ul style="list-style-type: none"> • Pine for green Ethiopia (Local NGO) 	67352 USD
49	Messanu and surrounding rural development project	2000-04	<ul style="list-style-type: none"> • Norwegian Church Aid (NCA) • Relief society of Tigray (REST) 	348,837 USD
50	Meda Wolabu community development project	2002-04	<ul style="list-style-type: none"> • NCA • REST 	302,326 USD
51	Armacho Rural Development Project	2002-04	<ul style="list-style-type: none"> • NCA • REST 	279,070 USD
52	Was Environmental rehabilitation project	2002-04	<ul style="list-style-type: none"> • NCA • REST 	320,930 USD

No.	Name of projects	Time frame	Partners involved	Overall budget
53	Rama Integrated rural development	2002-04	<ul style="list-style-type: none"> • NCA • Ethiopian Evangelical Church Mekane Yesus (EECMY) 	290,700 USD
54	Water development program	2002-04	<ul style="list-style-type: none"> • NCA • EECMY 	1,186,007 USD
55	Advocating for the Ethiopian Environment	2001-04	<ul style="list-style-type: none"> • Heinrich Boll foundation • Interchurch organization for development cooperation • Belgian Embassy • Forum for Environment (FFE) 	146,197 USD
56	Holistic Natural Resource Management	2003-05	<ul style="list-style-type: none"> • NOVIB • Hope for Horn 	486,380 USD
57	Environmental rehabilitation of refugee – Returnee impacted areas in the Somali National regional State	3 years	<ul style="list-style-type: none"> • La Caix • Hope for the Horn 	158,612 USD
58	Fodder production through Haffir Dam Rabasso in the Somali National regional State.	Jan 2004 - June 2005	<ul style="list-style-type: none"> • Japan Embassy • Hope for the Horn 	81,250 USD
59	Environmental Rehabilitation & Haffir Dam construction	Jan. -June 2004	<ul style="list-style-type: none"> • UNHCR • Hope for the Horn 	82,278 USD
60	Sustainable development and ecological land management with farmers in Tigray	2003	<ul style="list-style-type: none"> • Third world network • Institute of sustainable development (local NGO) • Bureau of Agricultural & Natural Resource of Tigray Regional State 	20,000 USD
61	Mille Sustainable Dry Lands project	2004-08	<ul style="list-style-type: none"> • EPA • UNDP • UNCCD & Afar NRS 	40,000 USD

Annex IV List of Professionals participated in the UNCCD 3rd Country Report

No	Name	Organization	Position	Address		
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3	Dr. Menberu Lulu	Action Aid Ethiopia	Fund raising officer	1261	654671	653420
4	Ato Solomon G/Medhin	Ministry of Federal Affairs	Expert		504547	
5	Ato Dereje G/Michael	Institute for Sustainable Development	Program coordinator	171 code 1110	167406(09- 243327)	669466
6	Ato Alemayehu Tafesse	Ministry of water resources	Team leader	30116	461169	
7	Ato Million Alemayehu	ORDA	Head, liaison office		504455	517244
8	Ato Abdirashid Ahmed	Hope for the Horn	Deputy Director	26060 code 1000	513631	516204
9	W/ro Almaz Demmessie	NMSA	Team Leader	21082 code 1000	622831	
10	Ato Dawit Kebede	Norwegian Church Aid	Program Manger	1248	512922	
11	Asto Ayele Kebede	Forum for environment	Dep. Coordinator	10386	521662	
12	Dr. Fassil Kebebew	Institute of Biodiversity conservation	Dept. Head	10726	09-211097	634959
13	Ato Yonis Berkele	ENCCD	Deputy chairman	30357	221571(09- 234324)	655600
14	Ato Arega Yirga	World Food Program	Programme Officer	25584 code 1000	515188	
15	Ato Abiye Astatke	ILRI	Agricultural Engineering	5689	463215	
16	Sofia Abdulkadir	Pine for Green Ethiopia	Executive Manager	25746	09-401631	
17	Ato Zelalem Temesgen	Farm Africa/SOS Sahel	Program Manager	5746	550154	552143
18	Ato Solomon Reta-	ENCCD	Board Member	15999	09-221571	

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19	Ato Yishak Sirabizu	DPPC	Senior expert		518050 ext 303	
20	Ato Teshome Soressa	EENGO	Program officer	8838	187653	
21	Ato Kiflu Segu	MoARD/Natural resource sector	Expert			
22	Ato Tesfaye Tilahun	MoADR, Food Security coordination Bureau				
23	Dr. Kidane Gergis	Ethiopian Agricultural Research Organization				
24	W/t Aynalem Meshesha	Ministry of Finance and Economic Development				
25	Ato Ababu Anage	Environmental Protection Authority (EPA)	Ecosystem department Acting head & UNCCD focal person	12760	464569	464876/82
26	Ato Dereje Agonafir	EPA	Expert	12760	465007	464876/82
27	Ato Befekadu Refera	EPA	Expert	12760	465007	464876/82
28	Ato Shimelis Sima	EPA	Expert	12760	465007	464876/82
29	W/ro Yesuswork Bekele	EPA	Women's Affairs Department, EPA	12760	465007	464876/82
30	Ato Birhanu Ayalew	EPA	CCF2 Program Coordinator	12760	465007	464876/82
31	Ato Tamiru Sebsibe	EPA	Expert	12760	465007	464876/82
32	Shimelis Fekadu	EPA	S. Expert	12760	464607	09/644523
33	Girma Mikiru	EPA	A/department head			
34	Etalemahu Demissie	EPA	Women's Affairs Department, EPA	12760	464888	464876/82