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COUNTRY STRATEGY 2003–2007

Strategic Environmental Analysis

Ethiopia

Contents

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Abbreviations and Acronyms

ADLI	Agriculture Development Led Industrialization
ANRS	Amhara National Regional State
ARDP	Amhara Rural Development Programme
CADU	Chilalo Agricultural Development Unit
CSE	Conservation Strategy of Ethiopia
Cu.m	Cubic meters
Debo	Rural labor mobilization to support individuals in their agriculture undertakings in which the individual offers food and drinks
EEPCO	Ethiopian Electric Power Corporation
EFAP	Ethiopian Forestry action Plan
EHRS	Ethiopian Highlands Reclamation Study
EIA	Environment Impact Assessment
EIA	Environmental Impact Assessment
EMI	Ethiopian Management Institute
EPA	Environmental Protection Authority
EWCO	Ethiopian Wild Life Conservation Organization
FAO	Food and Agriculture Organization
FDRE	Federal Democratic Republic of Ethiopia
GDP	Gross Domestic Product
GEF	Global Environment Fund
GWH	Giga watt-hour
Ha	Hectare
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency
ICBR	Institute of Biodiversity Conservation and Research

Idir	Rural and urban community traditional organization set up to help individuals during funeral arrangements
ILO	International Labor Organization
Kg	Kilogram
KWH	Kilo Watt-hour
MoA	Ministry of Agriculture
MoFED	Ministry of Finance and Economic Development
MoLSA	Ministry of Labor and social Affairs
MoT&I	Ministry of Trade and Industry
MW	Mega Watt
NGO	Non-governmental Organization
PRSP	Poverty Reduction Strategy Paper
RADS	Rural and Agriculture Development Strategy
RRC	Relief and Rehabilitation Commission
SARDP	Sustainable Amhara Rural Development Programme
SEAN	Strategic Environmental Analysis
SNV	Netherlands Development Agency
ToR	Terms of Reference
UN	United Nations
UNCDF	United Nations Commission Development Fund
UNCED	United Nations Conference on Environment and Development
UNFPA	United Nations Population Fund
UNIDO	United Nations Industrial Development Organization
USA	United States of America
USLE	Universal Soil Loss Equation
WBISPP	Woody Biomass Inventory Strategic Planning
Wonfel	An arrangement between a number of individuals to help each other in farm activities.
WWDSE	Water Works Design and Supervision Enterprise
WWF	World Wildlife Fund
Yr	Year

i. Background and Introduction

A Strategic Environmental Analysis (SEAN) has been commissioned to contribute to Sida's country strategy formulation process and ultimately to promote sustainable development in Ethiopia. Two key concepts emerge from the purpose of this study: "Strategic Environmental Analysis" and "Sustainable Development." Having the same understanding of these two key concepts is important in ensuring that the purpose and expected outcome of this study are met. The ToR for the study requires that SEAN be employed as a methodology to achieve the envisaged outputs of the study.

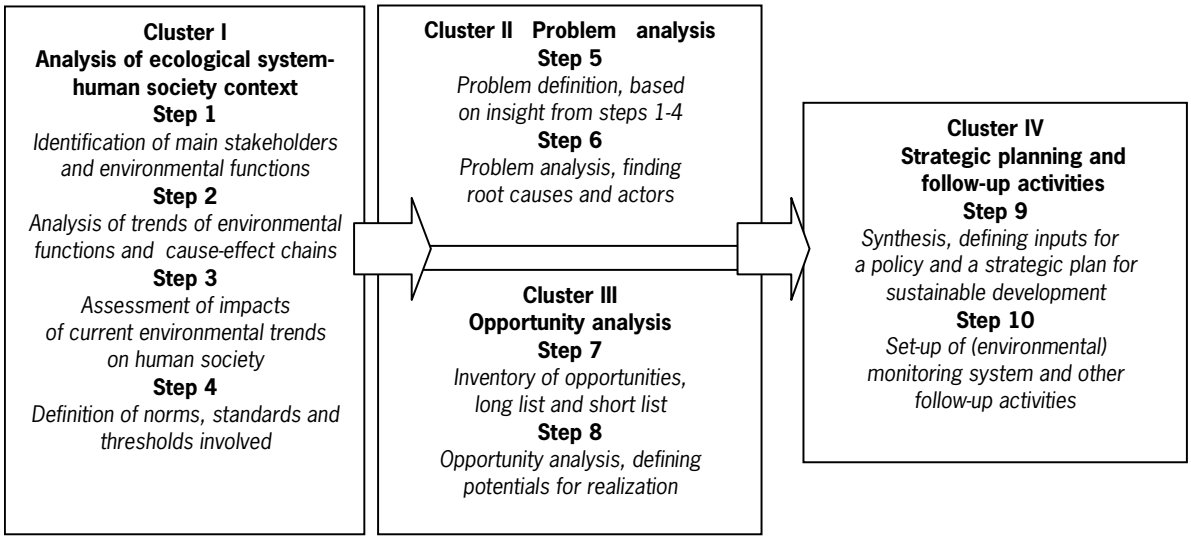
On the other hand what is meant by sustainable development needs to be clarified at the outset as the ultimate objective of this study and the subsequent Sida's country strategy formulation effort is to promote *sustainable development* in Ethiopia.

Sustainable development means achieving a quality of life or standard of living that can be maintained for many generations because it is *socially desirable*, fulfilling people's cultural, material and spiritual needs in equitable ways; *economically viable* paying for itself, with costs not exceeding income; and *ecologically sustainable*, maintaining the long term viability life support systems.

The implication of the above definition to the analysis at hand requires the consideration of the environmental dimensions of Ethiopia's socio-economic development.

Study methodology

Strategic Environmental Analysis (SEAN) is basically a methodological framework with practical tools and guidelines for a systematic and rigorous analysis of the environmental potentials and constraints on human development. This study has attempted to follow the ten methodological steps developed by SNV, the Netherlands development agency. The following figure gives an overview of the methodology. The degree and level of detail are not as required by a full scale SEAN exercise but the study has followed the main guiding principles of the methodology.



ii. Executive Summary

A Strategic Environmental Analysis (SEAN) has been commissioned to contribute to Sida's country strategy formulation process and ultimately to promote sustainable development in Ethiopia. Sustainable development considers both the well being of the human system and the ecosystem

The well being of Ethiopians by and large depends on the well being of the biophysical environment (air, water, land, flora and fauna). This is due to the dependence of the majority of the Ethiopian people on subsistence agriculture, which in turn has a heavy dependence on land, water and climatic resources. The nation's environmental resources such as land, water and biodiversity are the basis for agricultural, industrial and overall economic development. Unfortunately, over the years Ethiopians have not managed to transform these natural resources in to wealth and have not been able to improve their standard of living. Ethiopians are by and large rural, with low level of literacy of 23.4% in 1994, very low life expectancy (51 years) in 1992 and very high infant mortality (118/1000) and child mortality (173/1000) (UNDP,1998).

Land degradation in all its forms-water and wind erosion, salinization and alkalisation, chemical degradation, physical degradation and biological degradation – has become one of the most serious problems facing the Ethiopian agriculture and more markedly in the highlands.
Land degradation in Ethiopia is usually expressed in terms of soil erosion and soil fertility loss, reflecting the importance and linkage of land degradation to agriculture. Although over a decade and half old, the Ethiopian High Land Reclamation Study (EHRS) is still the most credible study on land degradation in Ethiopia. It concluded that over 14 million ha. in the highlands were seriously eroded, some 1900 million tons of soil were annually eroded from the highlands, equivalent to an average net soil loss of 100 tons/ha., with variations between 50 to 170 tons/ha. The Woody Biomass Inventory and Strategic Planning Project (WBISPP) however indicates that in the Amhara Region 82% of the region has a soil erosion rate of less than 12.5 tons/ha/year while 18% suffers a soil loss of 12.5 to 200 tons/ha/year. In Oromia 99% of the region has a soil erosion rate of less than 10ton/ha/year. The findings of the EHRS seem to be somewhat exaggerated when compared to the findings of the WBISPP.

This however cannot be a reason for complacency but an indication for the need to secure updated and reliable information on land degradation.

The environmental and economic functions of forests are potentially conflicting The environmental functions are manifested as sources of genetic resource, habitat for faunal and floral species, protection of soil and water resources, control of discharge of water to water bodies and sink to carbon dioxide while the economic functions are manifested as sources of timber, forest products and land for agriculture.

The Ethiopian Forestry Action Plan (EFAP, 1994) concluded that the deforestation rate in Ethiopia was 150000 to 200000 ha per year.
In economic terms EFAP estimated the full value of forest depletion in 1990 to have been about Birr 138 million or some 25% of the potential forestry GDP of Birr 544 million. A recent Ministry of Agriculture

(MoA) study indicated an annual deforestation rate of 163600 ha between the 1970s and 1986/90. The same study revealed that in the early 90s the undisturbed closed high forest cover was only 0.20%. In just over a decade 2.79 million hectares have been encroached with an annual rate of encroachment of over 200,000 ha.

Ethiopia is renowned for its richness in its biodiversity. The extent of degradation of this resource is wide spread and sever. The undisturbed high forest has dwindled to only 0.2% while all of the parks have been encroached for agricultural and grazing expansion. A number of parks and sanctuaries suffered wide spread damage during the change of government. The handing over of parks and sanctuaries to the regions during the decentralization process without considering their capacity to manage these resources has resulted in their further deterioration. Although it is difficult to quantify the loss of biodiversity recounted above, the constraints, however, do reinforce each other resulting in rapid biodiversity degradation.

On the policy front the focus of the Agricultural Development Led Industrialization (ADLI) strategy is on maximizing agricultural productivity and has very little focus on the conservation of biodiversity. A remarkable effort by the Institute of Biodiversity Conservation and Research (ICBR) worth mentioning is the *insitu* conservation of crop species, which is carried out with full participation of conservator farmers in their respect environments.

The major constraints with regards to land degradation include land clearing for agriculture, large scale infrastructure such as roads and dam construction, agricultural malpractice, tenure insecurity, limited understanding of issues involved in biodiversity conservation and the Convention on Biodiversity both by decision makers and the public at large, lack of recognition of the roles and rights of local communities in the conservation and use of biological resources and diversity including the inability of responsible institutions to put in place a mechanism for communities to participate in biodiversity conservation.

The water resources in Ethiopia are unevenly distributed both temporally and spatially. Currently 30% of the total population has access to clean water while the rural water supply coverage is 23%. Poverty and underdevelopment in Ethiopia is closely related to the underdevelopment of its water resources.

Among the major constraints for the underdevelopment of Ethiopia's water resources are: lack of vision and focus on the part of successive governments, the transboundary nature of the major rivers in which 75% of the waters flow out of the country, difficult and broken topography to promote irrigation and long distance water transfer, negligible or no participation of the private sector.

The limited supply of modern forms of energy and their high costs relative to the low average income per capita, has reinforced the dependence on biomass energy. This pattern of consumption has led to increasing deforestation, shortages of fuel wood and biodiversity degradation.

The nexus between poverty and environmental degradation is not straightforward and requires site specific in depth study due to the complexities of the 'poor communities', their surrounding environment and external forces shaping the decisions of the poor. For instance the

"vicious downward spiral" and the *"environment entitlement"* arguments are not mutually exclusive and in the Ethiopian case many agree that the poor contribute to environment degradation, as do other actors such as the state, investors and the consequences of unwarranted government policies and programmes. It is much more important to deliberate on and specify the policy implications of the various arguments and school of thoughts in order to contribute to policy and practice change on the part of the policy markers and resource users. The policy, strategy and programme responses to poverty and environment degradation need to be based on studies which take in to consideration the specifics of localities, communities and the internal and external forces which shape the decision of the poor resource users.

Global experience shows that population growth alone may not cause environmental degradation, but if the human capital is kept underdeveloped, people are deprived of access to resources and good governance, lack alternative livelihood with no opportunity for non-farm income, and technological stagnation may lead to resource degradation.

A central aspect of the population-agriculture-environment nexus is the role of women. Ethiopian women, as many in developing countries, have triple responsibilities: childbearing and child rearing, household management, and production activities. These roles have important consequences for human resource development, agricultural productivity, and environmental suistainability.

Ethiopia's extensive natural resources have been both degraded and underutilized. The underlying causes for this state affairs lie, by and large, in policy and institutional issues, which include poor governance, violent change of governments, lack of continuity, inappropriate policies, frequently changing and ineffective legal and institutional framework, poor implementation of policies, misuse of human resources and ineffective bureaucracy resulting in low implementation and management capacity over the past several decades.

There are strong arguments that current tenure provisions constrain agricultural productivity and cause environmental degradation, primarily because land resources are not privately owned. Lacking secure property rights, individuals are dissuaded from adopting long-term conservation, investment and production strategies. Opponents of tenure individualization focus on its alleged negative impact on land distribution and social equity which may lead to land grabbing, concentration of land ownership, and increasing marginalization of farmers, which may lead to increased migration to urban centers. What seem to prevail on ground in much of the rural areas are the customary tenure systems. Usufruct rights are acquired simply by clearing land and the incentive has been strong for settlers to move into previously uncultivated forest or savanna areas and to clear the land quickly in order to strengthen their claims. It is now becoming more evident that parts of protected areas, forests, wetlands, and rangelands in the south and southwest of the country have been converted to farming, often with significant negative environmental consequences.

Ethiopia has made commendable efforts in terms of policy and strategy response to address environmental degradation. The 1990s seem to be a decade that focused on policy and legislation formulation. What is

disappointing is that these policies, strategies and laws are little known by the majority of Ethiopians. There does not seem to be any effort on the part of the proponents of these policies and strategies to simplify these documents in understandable language for people to understand their content and messages in order to practice what they prescribe. It is not only the public that is ill informed about these policies and laws but also sectoral government agencies know very little about policies of other agencies.

Ethio-Swedish cooperation begun in 1968 in the areas of education, health and integrated rural development. Recent involvement of *Sida* (1992–2000) included education, health, water, mapping, integrated development, transport for disaster preparedness, agriculture, balance of payment support, research, and forestry with a total support of over US$ 117 million. There is no doubt that *Sida*'s interventions in the areas of education and child development were strategic which targeted the nation's basic assets for sustainable development. Recent policy shift with respect to financial disbursement such as the arrangement agreed with the Amhara region has gained popular support and recognition. Regional authorities claim that the direct transfer of funds to the regional account and implementation of programmes on the basis of agreed action plans has expedited implementation. What has generated even more interest is the confidence and a feeling of trustworthiness the arrangement has engendered among members of the regional government. The flexible arrangement in financial disbursement stipulated in *Sida*'s agreement with the Amhara region has demonstrated that *Sida*'s policy of *partnership* and the aim for *partners to own and assume responsibility for their own development* can also be pursued through such arrangements.

Sida's support to Ethiopia by and large falls within the Sida's policy on development cooperation. Although not guided by the current framework, the 1960s interventions, in the areas of integrated rural development, education and infant and child development were geared towards addressing the root causes of underdevelopment. The 1990s interventions were not focused but addressed a number of interrelated areas such mapping, research and others, which one may argue that these were supportive interventions for facilitating development activities. However the level of support in the areas of water, land, forest and soil conservation, follow up of UNCED and environment conventions were very minimal and in some of the areas non existent.

There is no evidence in the various documents consulted whether environmental indicators were used in a systematic manner to follow up environmental pressures. The Logical Framework in the planning document of ARDP does not indicate a conscious effort to formulate environmental indicators to gauge changes on account of the interventions.

There are instances where Sida has collaborated with other donors, such as disposal of obsolete pesticides, however whether this was by design or coincidence cannot be verified. Sufficient focus has not been accorded to national level environment policy implementation, capacity building in EIA, follow up in the implementation of Agenda 21 and international conventions. There are commendable ongoing national initiatives such as the institutionalization of EIA, national desertification control action plan, biodiversitry strategy and action plan, a long-term

water sector development programme which Sida may consider to include in its upcoming country support program. Sida's support to these nationally initiated programmes will be within Sida's policy framework on sustainable development and in full coherence with Ethiopia's country strategies and priorities.

1. State of the Environment: Potentials and Constraints

Sustainable development considers both the well being of the human system and the ecosystem. The well being of Ethiopians by and large depends on the well being of the biophysical environment (air, water, land, flora and fauna). This is due to the dependence of the majority of the Ethiopian people on subsistence agriculture, which in turn has a heavy dependence on land, water and climatic resources. The nation's environmental resources such as land, water and biodiversity are the basis for agricultural, industrial and overall economic development. Unfortunately, over the years, Ethiopians have not managed to transform these natural resources in to wealth and have not been able to improve their standard of living.

Ethiopia's population was 40 million in 1984, 53.5 million in 1994 with a rural population of 89% and 86% in 1984 and 1994 respectively. The 2000 population was about 65 million with little change in the proportion of the rural population. Ethiopians are by and large rural, with low level of literacy 23.4% in 1994, very low life expectancy (51 years) in 1992 and very high infant mortality (118/1000) and child mortality (173/1000). [1](UNDP, 1998; CSA,1998)

1.1 Land Resources

Land and land resources refer to delineable area of the earth's surface encompassing all attributes of the biosphere immediately above or below the surface including the soil, and terrain forms, surface water, near surface sedimentary layers and associated ground water, plant and animal populations, human settlements and infrastructure.

Land degradation in all its forms-water and wind erosion, salinization and alkalisation, chemical degradation, physical degradation and biological degradation – has become one of the most serious problems facing the Ethiopian agriculture and more markedly in the highlands.

Forest Degradation

The environmental and economic functions of forests are potentially conflicting. The environmental functions are manifested as sources of

[1] The 1998 Human Development Report states "According to government sources, adult literacy was around 27% in 1984, 77.2% in 1990 and 23.4% in 1994!. Evidence is that it has declined between 1990 and 1994, mainly as a result of the civil war which destroyed most of the educational facilities and mobilized youths and adults for the war front".UNDP, 1998. There are disparities in the data depending on the source of information. For instance the African development Bank selected Statistics on African Countries gives the total illiteracy rate for Ethiopia as 67.98% (i.e literacy rate of 32.02%) and 74.95% for females.

genetic resource, habitat for faunal and floral species, protection of soil and water resources, control of discharge of water to water bodies and sink to carbon dioxide while the economic functions are manifested as sources of timber, forest products and land for agriculture.

The Ethiopian Forestry Action Plan (EFAP, 1994) concluded that the deforestation rate in Ethiopia was 150000 to 200000ha per year. In economic terms EFAP estimated the full value of forest depletion in 1990 to have been about Birr 138 million or some 25% of the potential forestry GDP of Birr 548 million. A recent Ministry of Agriculture (MoA) study indicated an annual deforestation rate of 163600 ha between the 1970s and 1986/90. The same study revealed that in the early 90s the undisturbed closed high forest cover was only 0.20%. In just over a decade 2.79 million hectares have been encroached with an annual rate of encroachment of over 200,000 ha. The heavy disturbed high forest increased by 2.52 million hectares with an annual rate of over 200,000 ha.

Table 1

Status of High Forests

Forest density class	Area Mill.Ha (%) 1973–76	Area Mill.Ha (%) 1986–90
Closed high forest	3.02(2.64)	0.23(0.20)
Slightly disturbed high forest	1.42(1.24)	0.75(0.65)
Heavily disturbed high forest	1.0(0.87)	3.52(3.08)
Total	5.44(4.75%)	4.50(3.93%)

Source: Monitoring of High Forests in Ethiopia, M.Reusing, MoA, April 1998

In the two regions, which are the last refuges of high forests, the trends are not encouraging. Future trends for Gambela Region indicates that the region will loose 32% of its High Forest in the coming three decades while the estimate for Oromia is 27% for the same period. (WBISPP, 2000.)

Soil erosion and fertility decline

Land degradation in Ethiopia is usually expressed in terms of soil erosion and soil fertility loss, reflecting the importance and linkage of land degradation to agriculture.

The Ethiopian highland Reclamation Study (EHRS) in 1985 came out with very alarming figures of land degradation. Although over a decade and half old, it is still the most credible study on land degradation in Ethiopia. It concluded that over 14 million ha. in the highland were seriously eroded, some 1900 million tons of soil were annually eroded from the highlands, equivalent to an average net soil loss of 100 tons/ha., with variations between 50 to 170 tons/ha.

The Woody Biomass Inventory and Strategic Planning Project however indicates that in the Amhara Region 82% of the region has a soil erosion rate of less than 12.5 tons/ha/year while 18% suffers a soil loss of 12.5 to 200 tons/ha/year. In Oromia 99% of the region has a soil erosion rate of less than 10ton/ha/year. The WBISPP estimates are in

contrast with the earlier exaggerated estimates of EHRS.The WBISPP used the Universal Soil Loss Equation (USLE) adopted for Ethiopia which considered erosivity of rainfall, erodibilty of soil, slope, slope length and land cover. The study further concludes that Oromia and Gambella are relatively free of soil erosion. This however cannot be a reason for complacency but an indication for the need to secure updated and reliable information on land degradation.

The Conservation Strategy of Ethiopia (CSE) states that burning of dung as fuel instead of using it as a soil conditioner is considered to cause a reduction in grain production by some 550,000 tones annually country wide in 1990.

The WBISPP study notes that the annual grain production foregone due to burning of dung and crop residue amounts to 230,711tons (Amhara, 2000), 517,600 tons (Oromia, 1995) while it is only 9725 tons (Amhara, 2000) due to soil erosion. (WBISPP, 2000).

A decade later, considering only the estimate in two regions, the foregone loss in grain production has increased by over 200,000 tones as compared to the CSE 1990 figure. It is also important to note that twenty times more loss in crop production is due to biological degradation than due to physical soil erosion.

The constraints for continued forest and soil degradation include land clearing for agriculture due to exploitative farming system, tree cutting for fuel and logging due to population growth accompanied with stagnating agricultural production, lack of alternative energy and lack of security of tenure which discourage long term land improvement measures. (see Annex 1)

Despite the many constraints with regards to forest and soil degradation, recent information compiled by the Office of the Prime Minister quoted in the National Agenda 21 Implementation Review Report shows some achievements in forest conservation and land improvement activities. These include 0.25 million ha. covered by plantations, terracing activities on 2 million ha., forest area demarcation for over 600,000ha. and area closure on about 48000 ha. (EPA, September, 2001.)

A complex and interrelated factors cause environmental degradation. In order to analyze and identify the root causes of environmental degradation one may need to consider the various levels of decision making, what prompts resource users to decide on how and why of resource use and a multitude of related questions. A framework to further examine some of the issues related to environmental degradation in Ethiopia is suggested in the next page.

Table 2

A Framework to examine issues of environmental degradation in Ethiopia.

LEVELS / ISSUES	MACRO LEVEL	MESO LEVEL		MICRO LEVEL
Environmental Resources	Geographical zone, includes different ecological zones	Regional or local ecological resource system		Areas with relatively uniform ecological conditions
Levels of decision making	**National/Federal level** Highest decision making level including **international influence**	**Regional level** Region,Zone, Woreda	**Local Level** Kebele, Village, community	**Individual farm level** Individuals, families
Instruments/ Actions/Factors affecting environmental resources	**– Policies**, (land tenure, environment, fiscal, agriculture, decentralization) Are these policies environment friendly? Have there been any impact studies done on the performance and impact of these policies? .etc) **– Legislations**,(forest, land administration, EIA) Are these comprehensive and formulated with public participation? Are these known and understood by decision makers and the public at large?), **– Budget allocation**; Are federal and regional budget allocations favor the management of environmental resources? **– Research;** Do research outputs and professional associations influence public policies and agricultural practices? **– Institutional** (stability, continuity.) Have frequent changes in institutions impact on environmental resources? **– International assistance and influence**. Are external influences and aid causes for environmental degradation?	**– Institutional, Human resources, Budget** (Leadership, preoccupation) – Are appropriate institutions and capable civil service in place at regional level? – Is the leadership capable of implementing federal policies by adapting to the situation on ground and taking the resource base of the region into consideration? TRANSITION FROM BUREAUCRATIC ORGANIZATIONAL SET UP	– Do Kebele and community leaders have the required environmental awareness? – Are these leaders trusted by communities? – Do these leaders have the required leadership qualities? – What is the preoccupation of these leaders? Is it sustainable development? – Do traditional community organization participate in resource conservation? TO COMMUNITY ORGANIZATIONS → **Is the interface one based on trust, common vision?**	– Is there awareness of environmental issues, government policies and laws? – Do farmers have trust in government's policies, institutions, programs and staff? – Why is adoption of skill/technology at farm level very slow? – Is there good will on the part of farmers towards conservation programs? Are farmers reckless with their surrounding resources? – Are there sufficient incentives to conserve land resources? -What are the dilemmas with respect to the farmer's livelihood and conservation?
Ambiguous Jurisdiction over land resources?	All lands, state forests, parks, water bodies, municipal lands	Regional forests, parks, state farms, water bodies	Communal lands, open access lands, all fauna and flora outside protected areas	Individual fragmented parcels, open access lands, all fauna and flora outside protected areas
At what level should the focus be ?				
On what should the focus be?	– Policies, legislation, budget, research, Institutions. – Promote debate on tenure issues? Promote awareness on existing tenure system? – Tax free importation of alternative energy products.etc	– Civil service appointment on merit basis? promotion of participatory planning in government? joint government-NGO implementation?		Soil conservation, dung and crop residue for soil fertility

1.2 Biodiversity

Biodiversity is the variety and variability among living organisms and the ecological complexes in which they occur; this includes diversity within species, between species and of ecosystems (Convention on Biological Diversity, 1992).

Ethiopia is renowned for its richness in its biodiversity. Specifically it is one of the most important primary and secondary centers of origin and diversity of several crop species.

The Ethiopian biological diversity is made up of an estimated total of 6500–7000 plant species of which 12 are endemic. There are also 277 terrestrial mammals some 861 bird species, 201 species of reptiles, 63 species of amphibians, 150 species of fish and 324 butterfly species of which 31 mammals, 28 birds 24 amphibian, 4 fish, 9 reptile, 7 butterfly species are endemic.

There are 9 national parks of which two are gazetted, 3 sanctuaries, 11 wildlife reserves and 18 controlled hunting areas, 58 national forest priority areas with a total area of about 234,00 sq.km. or 14% of the country's surface area. (*National Agenda 21 Implementation Review Report, 2001.)*

The extent of degradation of the above resources is wide spread and sever. As indicated above the undisturbed high forest has dwindled to only 0.2% while all of the parks have been encroached for agricultural and grazing expansion. A number of parks and sanctuaries suffered wide spread damage during the change of government. The handing over of parks and sanctuaries to the regions during the decentralization process without considering their capacity to manage these resources has resulted in their further deterioration.

Although it is difficult to quantify the loss of biodiversity recounted above, the constraints, however, do reinforce each other resulting in rapid biodiversity degradation.

On the policy front the focus of the Agricultural Development Led Industrialization (ADLI) strategy is on maximizing agricultural productivity and has very little focus on the conservation of biodiversity.

The major constraints include land clearing for agriculture, large scale infrastructure such as roads and dam construction, limited understanding of issues involved in biodiversity conservation and the Convention on Biodiversity both by decision makers and the public at large, lack of recognition of the roles and rights of local communities in the conservation and use of biological resources and diversity including the inability of responsible institutions to put in place a mechanism for communities to participate in biodiversity conservation.

A remarkable effort by the Institute of Biodiversity Conservation and Research (ICBR) worth mentioning is the *insitu* conservation of crop species, which is carried out with full participation of conservator farmers in their respect environments. The *insitu* on-farm conservation of agro-biodiversity is an innovative approach exercised for maintaining both genetic diversity and knowledge of farming systems. The initiative has also faced a number of problems including the low coverage and non representativeness of current conservation sites (28% of major agro-ecologies and 10% of sub-agro-ecologies (ICBR, 2001)), constant increase in human and livestock population, genetic erosion of farmers

varieties due to promotion and high rate of adoption of high yielding varieties and the low price offered for farmers varieties.

1.3 Water Resources

There are 12 river basins covering Ethiopia's land area of 1.12 million sq.km., with an average flow of 110 billion cu.m. The Blue Nile, Wabi shebelle and Baro Akobo command about 75% of this flow. There are also saline, non-saline, crater lakes and wetlands with substantial water resources within these basins.

The water resources of Ethiopia are unevenly distributed both temporally and spatially. The ground water resource is estimated to be about 2.6 billion cu.m. and is relatively stable in quantity and quality and is not substantially affected by weather as the surface water is.

The irrigation potential is estimated at 3.6 million hectares of which only 6% is developed up to now. It is also disappointing to note the existence of completed irrigation projects in 6 of the regions totaling over 60,000 ha. which are not functioning and are not put to productive use due to by and large management problems. Currently 30% of the total population has access to clean water while the rural water supply coverage is 24%. The 20 year and Birr 33 billion water and sanitation programme of the Ethiopian government envisages to raise the current 24% rural water supply coverage to 40 to 60% and the urban water supply coverage from the current 75% to 89%. In terms of hydropower potential out of the estimated 144710 GWH/yr only 1.4% has been developed. (MoA, 2000)

Despite the relative abundance of the surface and ground water resources their utilization has been very low for agriculture, industry, power and domestic use. This is manifested by high proportion of people affected by water borne and water related diseases, low food and industrial crop production, low proportion of people with access to modern energy and underdevelopment of sectors which depend on the availability of energy and water supply.

Poverty and underdevelopment in Ethiopia is closely related to the underdevelopment of its water resources. There are obvious and ample evidences among many of the developed countries, which made their water resources an entry point to their socioeconomic development and allocated substantial resources to the sector. Mention can be made of the Tennessee Valley development of the USA, the White Water project of Australia etc.

Among the major constraints for the underdevelopment of Ethiopia's water resources are: lack of vision and focus on the part of successive governments, the transboundary nature of the major rivers in which 75% of the waters flow out of the country, difficult and broken topography to promote irrigation and long distance inter basin water transfer, negligible or no private sector participation. Since the 1950s Ethiopia's appeal for international assistance to develop its water resources have fallen on deaf ears due to lack of agreements with downstream countries. Ethiopia remained adamantly opposed to any sort of joint programmes with downstream countries for fear of legitimizing the statuesque of inequitable use of the transboundary waters until very recently. The Nile Basin Initiative is one of the recent initiative in which all of the Nile

basin countries are taking part. The Initiative states that the ten Nile riparian countries have collectively risen to the challenge of managing the valuable endowment of the river for poverty alleviation, resource protection, and mutually beneficial gains. In its so called the Eastern Nile Subsidiary Action Program it intends to focus on irrigation and drainage development, hydropower development and trade, watershed management,..etc. However when one examines the content and investment allocation of the program there is no meaningful irrigation development program in countries such as Ethiopia. Irrigation development is the only intervention which would have addressed the equity issue in water use and contribute to the economic development of Ethiopia considering the foregone and missed opportunities for the past several decades. The Initiative may be commendable in building confidence among riparian countries but so long it ignores and postpones the real issue of equitable sharing of the water resources of the Nile it will face insurmountable problems to advance its cause.

1.4 Energy

A marked feature of Ethiopia's energy sector is the high proportion of biomass relative to modern forms of energy consumption, which is about 93%. This does not compare well for instance with that of Egypt for which 96.5% of its energy demand is satisfied by modern energy. The limited supply of modern forms of energy and their high costs relative to the low average income per capita, has reinforced the dependence on biomass energy. This pattern of consumption has led to increasing deforestation, shortages of fuel wood and biodiversity degradation.

As indicated in the table below the total hydropower potential of the country is about 73700 MW. The estimated economically exploitable hydropower potential is about 30,000 MW while the current installed capacity is only 386 MW. The per capita electric consumption in Ethiopia in 1997 was only about 21 kWh/yr while Kenya's was 127 kWh, Norway's 23499 kWh and the world average was about 2200 kWh/yr. Only 13% of Ethiopians get electricity services while it is 12% for Kenya, 45% for South Africa and 97% for Norway. (WWDSE, March 2002.)

The annual per capita consumption of fuel wood is approximately 1.12 cu.m. or 700 kg. By way of comparison the annual per capita rates for South Africa is about 410 kg or 0.68 cu.m. and Tanzania 540 kg or 0.9 cu.m. (WBISPP,2000).

Table 3

Capacity of Existing Power Stations and Hydropower Potential of River Basins

Capacity of Existing Power Stations		Hydro Power Potential	
Power Station	Actual Capacity (MW)	River Basin	Potential MW
Koka	22	Awash	2550
Awash II	24		
Awash III	15		
Fincha	100	Abay	31978
Tis Abay I	6		
Tis Abay II	73		
Melka Wakana	146	Wabi Shebele	2827
		Tekezie	4094
		Baro	9052
		Omo	11899
		Genale Dawa	11300
Total	386		73700

Source: CESEN,1986 quoted in EELA, Megabit 1993

The generation capacity requirement for national interconnected system is forecasted to increase from the current 360 MW to about 865 MW in 2005 with the commissioning of Gilgel Gibe (180 MW), Tekezie and Gojeb (325 MW) hydropower projects. In addition to these EECO has planned power projects the studies of which will be completed in 2002 with envisaged generation capacity of 1094 MW (EEPCO, 2000).

The envisaged 2.6 billion dollar rural electrification program of EEPCO will go a long way to expand modern energy in the country. As part of this programme EEPCO is planning to launch a power expansion programme that would give access to 164 towns and has submitted financing proposals to the World Bank. It is also encouraging to note that EEPCO has conducted environmental and social impact assessment for 8 major towns and 97 rural towns and has invited the public to review these studies. This is a step in the right direction with respect to making EIA mandatory for all development projects and such initiatives should not be done to satisfy the conditionalities of international financing agencies.

The resource availability and the development of the energy sector are in a stark contrast. The country needs to find ways and means of rapidly developing its hydropower resources through for instance the participation of national and international private investors and joint ventures with neighboring countries that wish to benefit from hydropower schemes.

2. Direct and Underlying Causes for Environmental Degradation

2.1 Poverty, Vulnerability and Environment

In 1995/96 45.5% of Ethiopians were under the poverty line, i.e the income level below which a minimum nutritionally adequate diet plus essential non-food requirements are not affordable. Per capita food output in 1980/81 was 174kg.; in 1989/90 it was 142kg.; in 1993/94, 97 kg, in 1998/99, 125kg; and in 1999/00 it was 145kg showing a declining trend since the 80s but showing a revival in the recent years. There are no recent data to gauge if there is any progress since the 1995/96 poverty figure but some of the poverty indicators over the last half-decade seem to have improved over the years. In fact the PRSP argues that absolute poverty measured in terms of food consumption have shown a decline from 61.3% to 45.9% during the period from 1989 to 1994/95 (based on data from six villages).

Table 4

Some Indicators of Poverty

Indicators	Unit of measure	1993*1994	1999*2000
Infant mortality	Per '000	118	97
Under 5 child mortality	Per '000	173	166.2
Access to health service	%	38*	50.7
Gross enrollment for primary education	%	23*	51
Clean water supply coverage	%	23.1*	33.2*
Life expectancy	years	50.6	
Illiteracy rate	%	77	
Road density	Km/'000sq.km	21	28

Source: National Agenda 21Implementation Review Report, 2000,and PRSP, 2001

High levels of literacy and life expectancy suggest the probability of access to education, medical services and nutrition by a wide spectrum of the population. Although the gross enrollment rate has shown an increase the overall literacy rate has declined from around 70% in mid 80s to 23% in the mid 90s. The improvement in life expectancy in the last part of the 90s

has been eroded by the consequences of the AIDS pandemics. In 1984 life expectancy was 52 years while in 1994 it was less by 1.2 years.

The Bruntland Commission in 1987 stated:

> *"Poverty is a major cause and effect of global environmental problems... Many parts of the world are caught in a vicious downward spiral: poor people are forced to overuse environmental resources to survive from day to day, and their impoverishment of their environment further impoverishes them, making their survival ever more difficult and uncertain."*

This is a widely held thinking in Ethiopia and has been propagated at numerous forums. The explanation offers a very direct and easy to understand relationship of poverty and environment and has been internalized by many development planners and environmentalists.

Researchers however have not felt comfortable with this explanation, which does not consider the diversity of societies and the environment and does not address issues of access, control and management of environmental resources. They also argue that the influence of formal and informal institutions on the behavior of the rural poor towards environmental resources offers additional dimension to the poverty-environment nexus.

The link between poverty and environmental degradation is not simple and direct one. They may be driven by hunger and privation to rely more heavily on the resources of their surroundings, while this reliance may be exacerbated by environmental crises, the poor do not as a general rule, recklessly abuse the environment. (Dessalegn, 2001.)

One undeniable and irrefutable fact is the continued loss of vegetation cover and the current state and extent of high forest in the country, which is pitifully low. It is indeed important to find out who is doing the deforesting and provide sound explanation of the underlying causes of deforestation in the country. It is also important to have a clear understanding of the relationship of poverty and environment. However it is much more important to deliberate on and specify the policy implications of the various arguments and school of thoughts in order to contribute to policy and practice change on the part of the policy markers and resource users.

The "*vicious downward spiral*" and the "*environment entitlement*" arguments are not mutually exclusive and in the Ethiopian case many agree that the poor contribute to environment degradation, as do other actors such as the state, investors and the consequences of unwarranted government policies and programmes. The policy, strategy and programme responses to poverty and environment degradation need to be based on studies which take in to consideration the specifics of localities, communities and the internal and external forces which shape the decision of the poor resource users.

Rural Ethiopians heavily depend on their surroundings environmental resources for their survival. These include land for food and cash crop production, grazing, shelter and other socio-cultural services, forest and biodiversity resources for fuel, food, medicine, shelter construction, regulation of springs, rivers and ground water, including for their religious and cultural attributes.

Since the livelihood of rural Ethiopians is closely intertwined with land, water and biodiversity resources the degradation of these resources directly affect their survival and the consequences of sever degradation of these resources are manifested through wide spread food insecurity and ultimately leading to displacement of farmers and their families frequently referred to as environmental refugees. Cultivable land and forest resources are the two critical natural resources that are affecting the rural poor most through their continued scarcity and degradation resulting in land fragmentation, decrease in productivity, fuel wood scarcity. Agricultural intensification and use of improved technology are not catching up with the rural population growth leading to the erosion or exhaustion of the capacity of environmental resources to support the ever-increasing working age population.

The rural poor do not own assets or afford to have savings which render them vulnerable to a minimum of abnormalities such as loss of land, debt repayment, loss of labor power due to ill health, drought, even socio cultural demands such as weddings or funeral requirements. Rural traditional organizations such as *idir, debo*, *wonfel* and others are some of the copping mechanisms, which the rural poor use as a buffer against abnormalities or shocks. These abnormalities may include labor requirement during plowing a family's plot, weeding or harvesting, wedding or funeral ceremonies, which require money and labor contributions. A study done on coping mechanisms in one of the woredas in North Wolo indicated that during bad years farmers adopted the following coping strategies: 50 to 70% of households sold domestic animals, 30 to 85% households reduced meal consumptions to once a day, about 30% borrowed grains, 20% looked for other employment (Girma,1996). This may not be generalized for all regions but sheds some light on some of the coping strategies of the rural poor during shocks.

2.2 Economic Development and Environment

The Agriculture Development Led Industrialization (ADLI), the Poverty Reduction Strategy (PRS), the Conservation Strategy of Ethiopia (CSE), the Rural and Agricultural Development Strategy (RADS), the Civil Service Reform are the most important macro economic and development policies in Ethiopia while sector policies and legislation such as for education, health, population, science and technology, biodiversity, disaster prevention, energy, water resources, investment, forests, are in place.

Both the ADLI and PRS are criticized for their scanty treatment of environmental issues. The CSE can be taken as the sustainable development strategy of the country. The country's environmental policy came out of the CSE. The RADS is a rural and agriculture centered development strategy and dwells to some length on issues of land use, water resources utilization, natural resources conservation and land tenure. The RADS would have benefited a lot if it had adopted the provisions of the CSE. This would have assisted integrating and highlighting environmental issues within the rural development strategy. (see Annex 3 for a synopsis of RADS.)

The RADS focuses on the agriculture sector, which is the most important sector in terms of employment and wealth generation while at

the same time it has a heavy dependence on environmental resources. The country's continued forest depletion is by and large blamed on the expansion of cultivated land and the current state of land degradation is also blamed on agricultural malpractice that has engendered soil erosion and fertility decline. The stagnating, traditional and subsistence agriculture, although has managed to feed and employ the majority of Ethiopians for centuries, has not managed to improve the lives of the farmers.

There are encouraging developments in the growth of investments in the regional states. Some of these investments are being promoted at the expense of the natural environment. Examples are mechanized agriculture, incense and mining projects in Benishngul Gumuz, Gambella and other peripheral regions in which virgin forests were cleared, charcoaled and abandoned in some cases.

2.3 Health and Environment

The health services coverage of the country was 46.4% in 1995/96 and reached 50.7% in 1999/00 and within the same period the number of hospitals increased from 37 to 103, health centers from 157 to 356 and health stations from 2087 to 2330.

Environmental factors which affect health include *polluted air* which may cause acute respiratory infections, injuries and poisonings, cardiovascular diseases, cancer, chronic respiratory diseases; *poor sanitation and waste disposal* which may cause diarrheal diseases, malaria and other vector-borne diseases; *polluted water or poor water management* which may cause diarrheal diseases, malaria and other vector-borne disease, injuries and poisoning, *unhealthy housing* which may cause acute respiratory infections, mental health conditions, malaria and other vector-borne diseases.

Health professionals contend that in Ethiopia 70% of all diseases and 40 to 60% of all skin diseases are caused by lack of adequate potable water. Seventy percent or over 45 million of the Ethiopian population does not have access to potable water supply and relies on untreated and unprotected supplies from rivers, lakes, ponds and springs.

Besides the direct effect of consuming poor quality water rural women carry heavy loads over long distances and difficult terrain to reduce the number of trips required to provide water for their household. Carrying heavy loads damages the spine, causing difficulties during pregnancy and childbirth, uses up substantial energy, and is a cause of frequent accidents.

In addition to the hardship associated with gathering and cooking with biofuels, the indoor air pollution created by such fuels is a health hazard, particularly to women and children. Studies indicate that smoke contributes to acute respiratory infections that kills some 4 million infants and children a year at the global level. (Rural Energy Development, The World Bank.)

Studies conducted in some African countries indicate that children carried on their mothers' back as they cooked in smoky huts had a risk of acute respiratory illness six times more than that of other children. There are no studies available in Ethiopia to provide statistical information but it can safely be concluded that rural women in Ethiopia are exposed to a very high risk of chronic lung disease, since the housing and poverty conditions are similar to those African countries in which studies have

been conducted on indoor air pollution. Indoor biofuel use for cooking has also been a cause for frequent fire hazards involving loss of life and household assets in rural areas which is rarely reported or documented.

HIV/AIDS has now become "the environment" affecting physically and psychologically all Ethiopians of all walks of life. Ethiopia ranks third, next to South Africa and India, in the number of people living with HIV/AIDS which is about 2.6 million, 10% of which are children under five. The most important health issues besides HIV/AIDS are water related diseases and malaria both consequences of the deterioration of the environment.

2.4 Population and Environment

The adoption of the National Population Policy in 1993 had a major goal of harmonizing the rate of population growth and the capacity of the country for the development and rational utilization of its natural resources. Population offices have been established both at the federal and regional levels. Some of the recent achievements of policy implementation are as follows:

Table 5

Outcomes of Implementation of the Population Policy

Year	Women awareness of family planning	Men awareness of family planning	Contraceptive Prevalence Rate	Total Fertility Rate	Total Dependency Ratio
1990 1994*	**63**	**–**	**5**	**7.7**	**94.6***
2000	80.8	89.7	8	5.9	88

Source: compiled from EPA, 2001, report on the Implementation of Agenda 21.

Global experience shows that population growth alone may not cause environmental degradation, but if the human capital is kept underdeveloped, people are deprived of access to resources and good governance, lack alternative livelihood with no opportunity for non-farm income, and technological stagnation may lead to resource degradation.
In Ethiopia, there is ample physical resource base but for decades on social and political instability, lack of opportunities for non-farm income, non-availability of active private trading network, lack of physical infrastructure, lack of good governance and lack of access to significant internal and external market have eroded these resources.

In most parts of Ethiopia the scope for further expansion of cropland has drastically narrowed. Large areas of forests, wetlands, river valley bottoms and grassland savanna have already been converted to farmland This can be seen particularly in most of the highlands and in traditional grazing areas of eastern and southern Ethiopia. On average, per capita arable land actually cultivated declined from 0.5 ha per person in 1965 to slightly less than 0.3 ha/person in 1990. In many areas, rural people are increasingly compelled to remain on the same parcel of land and yet they continue to use their traditional production techniques. Soil fertility and structure deteriorate rapidly where fallow periods are too short and

traditional cultivation methods continue to be used. As a result, soils erode and crop yields decline.

When farming is no longer viable, people migrate to establish new farms on land previously not used for farming—in semiarid areas and in tropical forests where soil and climatic conditions are poorly suited to annual cropping. Migrants bring with them the knowledge of only those farming techniques they practiced in the areas they left, and these are often detrimental to their new environment.

2.5 Gender and Environment

A central aspect of the population-agriculture-environment nexus is the role of women. Ethiopian women, as many in developing countries, have triple responsibilities: childbearing and child rearing, household management, and production activities. These roles have important consequences for human resource development, agricultural productivity, and environmental suistainability.

Their role in bearing and rearing children directly influence both the size and the quality of the future stock of human resources, while as household managers, women are the primary managers and users of a variety of natural resources, most notably fuelwood and water.
Their roles and decisions in food crop production and a variety of other agricultural activities have a direct bearing on soil fertility and erosion, water infiltration and retention, and waste and by-product recycling.

Increasing populations put greater pressure on available water resources and fuelwood, while land and water resources degradation reduces the availability of water and accessibility to fuelwood resources requiring women to walk long distances and carry heavier loads. This also leads to the reduction of income of women from income generating activities such as local beer making and pottery based on fuelwood and water in addition to minimizing the possibility of cooking food.

The combination of traditional attitudes and constraints with greatly increasing workloads of women may thus be part of the explanation for the continuing extraordinarily high fertility rate in Ethiopia, now about 6.5 children per woman on average compared to less than 4 in other developing countries.

Rural women very rarely have access to any labor-saving technology for their tasks which include fetching and transporting water, grain milling, food processing, fuel wood fetching, transporting and cooking.

National efforts will have to aim primarily at: reducing women's severe time constraints; lowering the barriers to women's access to land (*some contend that despite the criticisms leveled at land redistribution it has addressed the issue of women's access to land*), credit, and extension advice; introducing technologies useable by and beneficial to women; and upgrading women's educational standards and skills.

2.6 Policy and Institutional Issues

Ethiopia's extensive natural resources have been both degraded and underutilized. The underlying causes for this state affairs lie, by and large, in policy and institutional issues, which include poor governance, violent change of governments, lack of continuity, inappropriate policies, frequently changing and ineffective legal and institutional framework,

poor implementation of policies, misuse of human resources and ineffective bureaucracy resulting in low implementation and management capacity over the past several decades.

Of recent a number of policies and legislation with regards to environmental resources have been put in place.

The Environmental Policy of Ethiopia was approved by the Council of Ministers in April 1997 and addresses a wide variety of sectoral and cross sectoral environmental concerns in a comprehensive manner with the aim of ensuring "sustainable use and management of the natural, human made and cultural resources and the environment."

The environmental policy was envisaged to be reviewed every five years for the purpose of improving and updating the policy on the basis of feed back from the implementation of the policy. The Environmental Protection Authority (EPA) is a young institution that needs to be strengthened in human and other resources in order to effectively coordinate the implementation of the environmental policy and the various environmental legislations. Currently its organizational set up with regards to setting up regional branch offices is not yet clear and it is operating from the capital city. What is surprising is that the EPA is not indicated in the new federal government organizational structure. There are also concerns whether the new federal government structure with additional super ministries improve government efficiency (see Annex 2 for FDRE organogram).

The Ethiopian Water Resources Management Policy is a comprehensive policy covering irrigation, basin development drinking water supply, water quality and pollution aspects.

The National Policy on Biodiversity Conservation and Research has a major objective of ensuring that the plant, animal, microbial genetic resources and essential ecosystems are conserved, developed and sustainably utilized.

The Energy Policy underlines among others the environmental degradation caused by widespread use of biofuels and aims to reverse the situation making available environment friendly, cost effective and sustainable energy supply.

In addition to the above policies Forest Proclamation No.94/1994, Water Resources Management Proclamation No.200/2000 have been put in place. There are also legislations in the making, which include environmental pollution proclamation and environment impact proclamation.

Land resources degradation is influenced by policies and laws such as policies on population, environment, agricultural, biodiversity and laws on land tenure and administration, forests, and protected areas.

Article 40 of the constitution states that "*land is a common property of the nations, nationalities and peoples of Ethiopia and shall not be subject to sale or to other means of transfer*" and further states "*any Ethiopian who wants to earn a living by farming has a right, which shall not be alienated, to obtain, without payment, the use of land*".

There are strong arguments that these provisions constrain agricultural productivity and cause environmental degradation, primarily because land resources are not privately owned. Lacking secure property rights, individuals are dissuaded from adopting long-term conservation, investment and production strategies.

Opponents of tenure individualization focus on its alleged negative impact on land distribution and social equity which may lead to land grabbing, concentration of land ownership, and increasing marginalization of farmers, which may lead to increased migration to urban centers.

What seems to prevail on ground in much of the rural areas are the customary tenure systems. Usufruct rights are acquired simply by clearing land and the incentive has been strong for settlers to move into previously uncultivated forest or savanna areas and to clear the land quickly in order to strengthen their claims. It is now becoming more evident that parts of protected areas, forests, wetlands, and rangelands in the south and southwest of the country have been converted to farming, often with significant negative environmental consequences.

Regional states have come up with varying land administration regulations within the framework set by the constitution. Some regions are now allowing farmers to lease their farmlands for as long as 35 years to private developers, which was limited to three years earlier. Some contend this arrangement will allow for increasing land productivity and optimizing the sustainable use of land resources. In some regions, however, investment incentives have resulted in unintended outcomes. There are cases of "modern slash and burn" farming practices whereby investors clear a large area of forest for agriculture and abandoned the cleared area on account of unsuitability of the soil for agriculture and often after charcoaling and selling the wood.

Some of the regional land proclamations are consciously designed with the protection of land resources in mind. For instance the Utilization of Rural Land for Investment Activities in Oromia Region No. 3/1995 proclamation states that "*lands may be granted free of charge for projects on the basis of their contribution to environment contribution*" and further states that "*any investor shall be obliged to protect and preserve the natural resources of the land and plant suitable species of trees, apply proper soil management practices in steep and sloppy areas susceptible to erosion*".

Although these provisions are environment friendly their implementation and follow up leaves much to be desired.

Public environmental awareness has improved over the years. The Conservation Strategy of Ethiopia (CSE) and a number of NGOs and civil societies have done a lot in awareness raising and promoting environmental education in the country. There are some efforts to introduce and prepare environment education training manuals and texts for primary schools. The environmental policy has recommended to include environment in the curricula of all levels of formal education. The CSE has initiated an environmental training programme in collaboration with the Addis Abeba University.

2.7 Risk Associated with Resource Use

The degradation and destruction of forests and woodlands accelerate soil degradation and erosion, eliminate wildlife habitat, lead to loss of biodiversity, and have severe implications for local and regional climates and hydrological regimes. What makes this situation very risky is the very low rate of reforestation and continued deforestation. As indicated earlier use of biomass for fuel instead of soil conditioning is taxing the nation

heavily in terms of loss of production. The scarcity of fuel wood and grazing resources may lead to conflict among communities sharing these common property resources.

Another area of concern is equitable sharing of water resources among regions and communities. The risk of conflict will increase with population increase and expansion of water based development projects.

Land is a resource very close to the hearts and minds of Ethiopians. Government's handling of land issues may result in socioeconomic development or stagnation or may even cause serious social tension. Open public debate on land issues and reaching on a national consensus on acceptable land tenure policy and administration should be the way forward in resolving the current differences among various schools of thoughts.

3. Response-commitment and Actions

3.1 National Response

Ethiopia is party to a number of international conventions and has signed and ratified the 1972 World Heritage Convention, the International Plant Protection Convention, the Convention to Combat Desertification through Proclamation No.80/1997, the Convention on Biological Diversity through proclamation No.98/1994, United Nations Framework Convention on Climate Change through Proclamation no.97/1994. The Montreal Protocol on Ozone Depleting Substance on October 11,1994, Convention on International Trade in Endangered Species of Wild Fauna and Flora through Regulation No. 14/1980, the Basel Convention through proclamation No. 192/2000 and has signed the UN Convention of the Law of the Sea. Due to resource limitation the implementation of these international conventions rely heavily on external assistance.

Ethiopia has also made commendable efforts in terms of policy and strategy response to address environmental degradation. It has gone through a conservation strategy formulation process, which culminated in the approval of the Environmental Policy of Ethiopia by the council of ministers in 1997. *Sida* has funded the first phase of the formulation of the Conservation Strategy of Ethiopia.

A number of other sectoal and cross-sectoral policies, strategies and laws have also been launched. These include *The National Population Policy of Ethiopia (1993), the National Fertilizer policy (1999), the National Science and Technology Policy (1993), National Policy on Biodiversity Conservation and Research (1998), National Policy on Disaster Prevention and Management (1997), the Ethiopian Water Resources Management Policy (1999),the Health Policy (1993),the Energy Policy (1993),the National Agricultural Research Policy and Strategy (1993), the National Drug Policy (1994), the National Health Science and Technology Policy (1994), Forest Proclamation No.94/1994, Mining Operations Council of Ministers Regulations No. 182/1994, Investment Proclamation No.37/1996, Commercial Regulation and Business Licensing Proclamation No.67/1997, Water Resources Management Proclamation No. 197/2000, Public Health Proclamation No. 200/2000.*

The 1990s seem to be a decade that focused on policy and legislation formulation. Some of the policy initiatives such as the environmental policy were initiated during the military government and finalized during

the tenure of the current government confirming the importance and urgency accorded to environment management by succeeding governments despite their political differences.

What is disappointing is that these policies, strategies and laws are little known by the majority of Ethiopians. There does not seem to be any effort on the part of the proponents of these policies and strategies to simplify these documents in understandable language to people to understand their content and messages in order to practice what they prescribe. It is not only the public that is ill informed about these policies and laws but also sectoral government agencies know very little about policies of other agencies.

The environmental policy recommends "*to foster a feeling of assured, uninterrupted and continuing access to the same land and natural resources on the part of the farmers and pastoralists so as to remove the existing artificial constraints to the wide spread adoption of, and investment in, sustainable land management technologies.*"

This does not go very well with recent actions related to land redistribution and the absolute lack of mechanisms and public awareness programmes in fostering a feeling of assured and uninterrupted access to land on the basis of existing tenure policies.

Efforts to intensify agriculture, conserve natural resources, and improve the lives of pastoralists will therefore have to be focused to a significant extent on efforts to foster a feeling of assured and uninterrupted access to the same land and natural resources for farmers and pastoralists. The Rural Development Strategy argues that the current land policy fosters such tenure security. (see Annex 3)

3.2 International Assistance

Between 1992 and 1999 Ethiopia managed to mobilize US$5011 million in long-term loans (39%), grants (50%) and debt relief (11%) from bilateral (41%) and multilateral sources (58.4%). Actual disbursed proportion of the external resources was 46% for health and education, 19% for transport and communications, 11% for agriculture, 7% for water and energy, 6% for industry and 4% for finance.

A number of national programmes with multilateral and bilateral assistance are being undertaken in the field of environment.

Table 6

International Assistance for Projects in the Field of Environment

No.	Project	Allocation US$ million	Implementing Agency	Funding Agency
1	A sustainable Development project	8.49	Amhara Agr. Bureau	UNCDF
2.	African NGO-Government Partnership for Sustainable Biodiversity Action	4.33	EWCO	GEF
3	Conservation and Sustainable Use of Biodiversity in the Great Rift Valley Lakes	0.34	EPA	FAO
4	Conservation of Ethiopia's Plant Genetic Resources	2.43	IBCR	FAO
5	National Biodiversity Action Plan	0.35	EPA	GEF
6	Energy II-Woody Biomass project	3.91	MoA	ADB
7	Forest Conservation in High Priority Forest Areas	1.74	MoA	WWF
8	Industrial Utilization of Medicinal Plants	0.55	Eth. Health & Nutrition Research Inst.	UNIDO
9	Seimen Mountains National Park	10.0	Amhara Region	GEF
10	Protected Area System	0.30	EWCO	GEF
11	Tannery Pollution	0.66	MoT&I	UNIDO
12	Women Fuel Wood Carriers	1.50	MoLSA	ILO
13	Watershed management, forestry advisory, biomass energy, pastoral development, social forestry, forest management, participatory land use lanning(1996-01)	15.0	Regional Bureaus	German
14	Rural water supply and Env.Protection (1999-02)	7.0	Amhara	Finland
15	Environmental Protection (1999-02)	1.7	EPA	Finland
16	Ecologically Sustainable Industrial elopment (2000-02)	1.8	EPA	Netherlands
17	Environment Support Project91999-02)	10.0	MoWR	Netherlands
18	Biomass, Nature Oriented Tourism Development1998-02)	5.5	Regional Bureaus	Austria
19	Environmental Protection	2.0	EPA	Norway
20	Disposal of Obsolete Pesticides	3.8	MoA	Italy,USA,Japan, Netherlands,Swed en
21	5th National Population Program	24.5	MoH	UNFPA

Source: National Agenda 21 Implementation Review Report

3.3 Swedish Assistance to Sustainable Development

Ethio-Swedish cooperation begun in 1968[2] in the areas of education, health and integrated rural development. Among the notable achievements the building of 6500 elementary schools, the establishment of a clinic and food factory for infants, and the Chilalo Agricultural Development Unit (CADU). The clinic and the infant food factory are still giving services over four decades later and the impacts of the integrated rural development are wide spread in terms of direct benefits to the specific geographical area and replicated extension systems, use of agriculture inputs etc. to rural development efforts in the country.

Recent involvement of *Sida* (1992–2000) included education, health, water, mapping, integrated development, transport for disaster preparedness, agriculture, balance of payment support, research, forestry with a total support of over US$ 117 million. Although Sweden's assistance was scaled down during the Ethio-Eriterian war it again picked up in early 2001. Recent and ongoing cooperation include (1997–2002) forestry education, rural development in Amhara region, local food procurement support, support of poverty reduction study and consultancy fund totaling over SEK 788 million of which SEK 364 million has already

[2] There are references that indicate that Ethio-Swedish cooperation started in 1954.

been implemented. The total includes a yet unallocated fund of SEK 150 million. (Internal Memo, MoFED, 2002.)

There is no doubt that *Sida*'s interventions in the areas of education and child development were strategic which targeted the nation's basic assets for sustainable development. Recent policy shift with respect to financial disbursement such as the arrangement agreed with the Amhara region has gained popular support and recognition. Regional authorities claim that the direct transfer of funds to the regional account and implementation of programmes on the basis of agreed action plans has expedited implementation. What has generated even more interest is the confidence and a feeling of trustworthiness the arrangement has engendered among members of the regional government. The flexible arrangement in financial disbursement stipulated in *Sida*'s agreement with the Amhara region has demonstrated that *Sida*'s policy of *partnership* and the aim for *partners to own and assume responsibility for their own development* can also be pursued through such arrangements.

Sida has a well-defined framework for its development cooperation and stipulates that Swedish development cooperation shall contribute to the sustainable use of natural resources and protection of the environment. This is a welcome departure from a purely 'conservation objective', which use to be the norm a few years back, to 'sustainable use of natural resources objective'.

Sida's policy on sustainable development underlines the importance of EIA, environment based economic analysis and focusing in areas such as follow up on UNCED and international conventions in the field of environment. It further states that the priority intervention areas in the next five years to be water resources, sustainable use of land, forest, and soil conservation, marine environment, urban environment issues, environmentally sound production and consumption of energy, competence, capacity and institutional development and NGOs and civil society.

Sida's support to Ethiopia by and large falls within the above cooperation framework. Although not guided by the current framework, the 1960s interventions, in the areas of integrated rural development, education and infant and child development were geared towards addressing the root causes of underdevelopment. The 1990s interventions were not focused but addressed a number of interrelated areas such mapping, research and others which one may argue that these were supportive interventions for facilitating development activities. However the level of support in the areas of water, land, forest and soil conservation, follow up of UNCED and environment conventions were very minimal and in some of the areas non existent. (see Annex 4)

The more recent and ongoing interventions focus on forestry education, integrated rural development, education and agriculture. (see Annex 5.) The forestry and the integrated rural development projects command over 70% of Sida's total current allocation.

Table 7

Amhara Rural Development Programme, June 1997– December 2001
(Total Disbursement SEK 282.5)

Interventions	Achievements	Number of beneficiaries
Village roads (kms)	447	560,000
Water points (no.)	197	104,000
Watershed development (no. sites)	32	
Health post maintenance (no.)	15	75,000
Health clinic maintenance (no.)	21	210,000
Establishment of vaccination centers (no.)	43	43,000
Establishment of outreach centers (no.)	52	9,000
Schools rehabilitation (no.)	71	35,000
Rural credit disbursed (million Birr) (Repayment rate 97%)	48.21	24039 (11539 females)
Veterinary clinics constructed (no.)	16	
Rural roads rehabilitated (kms)	239	
Purchase of equipment	24 tractors, 36 trailers, 6 motor cycles, 3 rollers, 1fuel tank, 3 water tanks, 1 dump truck, 30 4WD Land Cruisers	
Other interventions-Joint forest management – Economic diversification – Agriculture research-Livestock – Seed multiplication – Extension training woreda office capacity building Institutional support to women's, planning. cooperatives, culture bureaus		

Source: consolidated from MoFED, Internal Memo, no date, *A Synoptic View of Achievements of SARDP.*

The "Indicative Social Impact Evaluation of Phase I Sida Support to ANRS", by P.Oates and S.Seyoum,. Dec.2000, states that "the Phase one programme remains generally good and the managements is sound and considerable benefits appear to have been realized."

The environment degradation problems of the country are enormous as indicated in the various sections of this report and are obviously beyond the capacity of a single country support programme to show a visible change in preventing environmental degradation in a short time. However the Amhara Rural Development Programme has demonstrated that such area focused programmes can make meaningful changes in peoples lives and resource use.

There is no evidence in the various documents consulted whether environmental indicators were used in a systematic manner to follow up environmental pressures. The Logical Framework in the planning document of ARDP does not indicate a conscious effort to formulate environmental indicators to gauge changes on account of the interventions.

There are instances where Sida has collaborated with other donors, such as disposal of obsolete pesticides, however whether this was by design or coincidence cannot be verified. Sufficient focus has not been accorded to national level environment policy implementation, capacity building in EIA, follow up in the implementation of Agenda 21 and international conventions. There are commendable ongoing national initiatives such as the institutionalization of EIA, desertification national action plan, biodiversitry strategy and action plan, a long-term water

sector development programme which Sida may consider to include in its upcoming country support program. Sida's support to these nationally initiated programmes will be within Sida's policy framework on sustainable development and in full coherence with Ethiopia's country strategies and priorities. Sida may also consider assisting programmes that aim at the establishment of buffer zones (plantations) around the remaining high forest areas.

Annex 1 Summary of Main Problems and Underlying Causes of Land, Water, Biodiversity Degradation and Energy Access

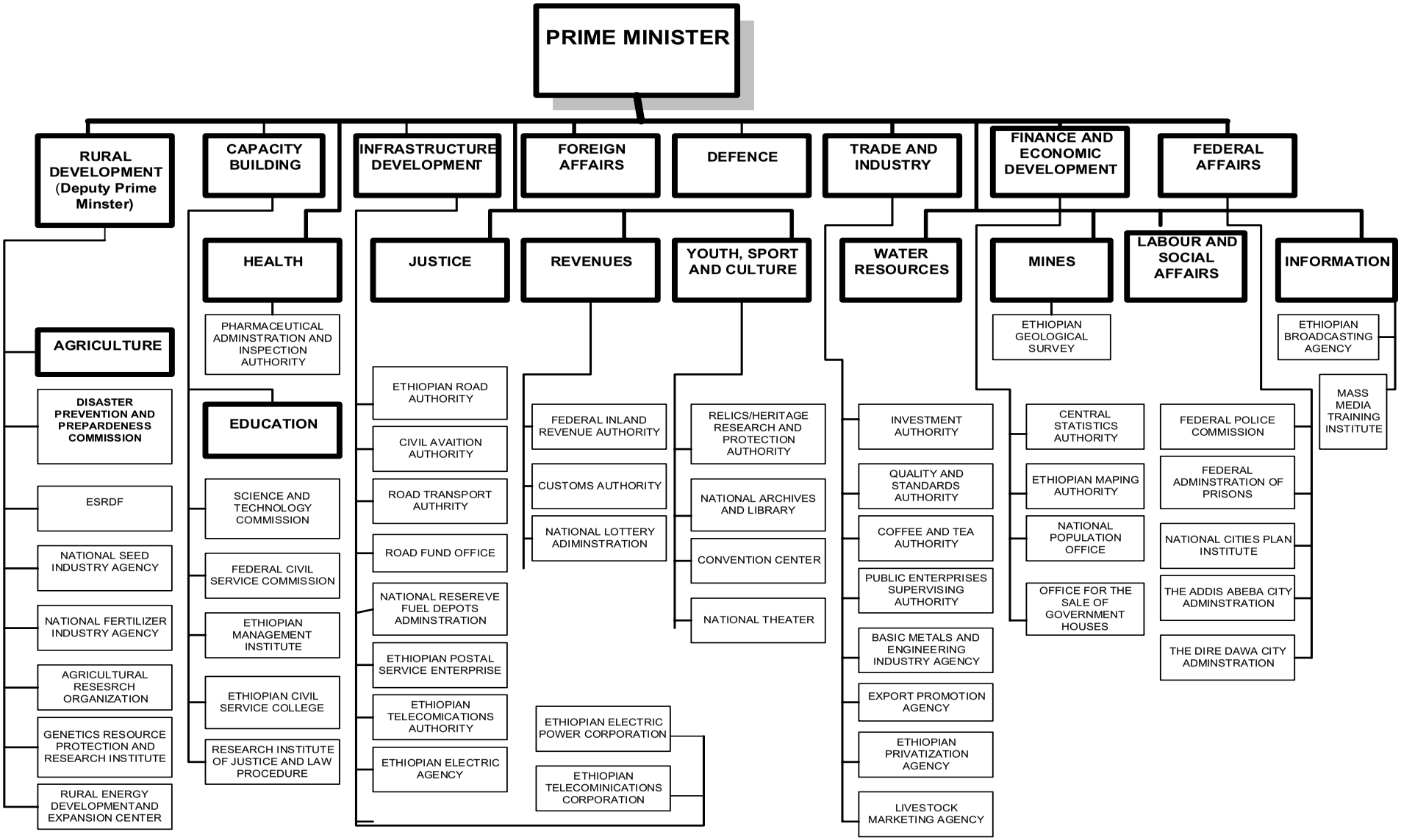
Problem	Extent of Problem	Direct Causes	Underlying Cause
1. Deforestation and loss of vegetative cover,	– in the early 1950s natural forests still covered 16 percent of the land area, and in 1989 only 2.7 percent of the coverage was left; – the annual loss has been estimated to be 150,000 to 200,000 ha;.	– Land clearing due to increasing demand for cultivation and grazing. – Tree cutting due to increasing demand for fuel wood. – Insufficient tree planting. – Forest fire – Logging – Refugees settlers in the west and east of the country	– High population growth. – Low and stagnating agricultural productivity prompting farmers to wood and charcoal selling. – Insufficient land use planning and management. – Low efficiency in the use of fuel wood. – Lack of viable alternative sources of household energy. – Lack of security in land and tree tenure. – Lack of environmental awareness.
2. Soil erosion and fertility decline.	– soil losses on arable land are estimated to exceed soil formation by a factor of six; – due to soil erosion and loss in soil fertility crop yields decline by 1 to 3 percent annually, – about 20,000 to 30,000 hectares of crop land in the highlands are abandoned annually because cropping can no longer be supported by the soils; – at present rates crop land of some 10 million highland farmers could be destroyed by year 2010; – average annual foregone production is estimated to be about 1 million tons,	– High-intensity rainstorms and extensive steep slopes. – Removal of vegetative cover, including deforestation, leading to excessive runoff. – Loss in soil fertility is aggravated by increasing use of animal dung and crop residues for household fuel rather than for soil conditioning; – relatively low fertilizer use.	– Limited success of past soil conservation efforts due to institutional deficiencies – High population growth with increasing demand for crops, grazing land and fuel wood. – Lack of land use planning and management. – Low level of technology development in peasant agriculture; – Shifting cultivation practices.
3. Widespread use of biomass and slow progress in expansion of modern energy	– Only 6% of the energy demand is satisfied with commercial energy.	– Increased demand for woody biomass for fuel and construction material.	– Population growth. – Ecological fragility and inherently low biological productivity. – Low level of technology in rangeland utilization and in lowland farming. – Loss of productive land in the highlands (migration to lowlands). – Absence of effective land use policy and lack of security of land tenure. – Lack of infrastructure and services (veterinary). – Lack of institution

Problem	Extent of Problem	Direct Causes	Underlying Cause
4. Loss of biodiversity through destruction/degradation of ecosystems.	– Present clearance of 1,500 to 2,000 km^2 of natural forest per year poses a serious threat to biodiversity and endemism; – increasing pressure on biodiversity is also occurring in the semi-arid lowland areas.	– Clearance of natural vegetation for agriculture and household fuel. – Extensive soil degradation. – Illegal hunting and harvesting of wild species.	– Encroachment on natural forests and rangelands stemming from population pressure. – Present protected areas exclude important natural vegetation systems. – Lack of integration of biodiversity conservation with state forest management. – In adequate legislative framework, weak institutions, and lack of enforcement capacity. – Low priority in public expenditure program. – Weak information base for planning. – Low public awareness of biodiversity importance. – Lack of involvement of local communities in conservation.
5. Water scarcity	– Very uneven water distribution both in space and in time, – Only 19% of total population has access to safe water supply, with 80% of the urban population but only 11% of the rural population. – Less than 5% of estimated irrigable area utilized;. – in rural areas water supply problems are serious hindrance to livestock development;	– Increasingly erratic and unreliable rainfall – Decreased rainfall infiltration into soil. – Low level of water resource development,	– Deforestation and soil erosion . – Lack of comprehensive policy and legislative framework. – Limited data base and planning. – Lack of ground water data. – Limited resources and trained staff. – Low level of economic development. – Lack of international agreements. – Limited application of low cost technology. – Low cost recovery. – Lack of health education. – scattered villages and pastoralist systems.
6.Water resource degradation.	– Excessive nun-off, heavy siltation damages in infrastructure, reduced life of storage dams, and floods in lowland. – Domestic waste, industrial pollution and agricultural pollution, – salinity problems and associated land loss such as in the Awash basin salinity is estimated to affect some 25 % of the area.	– Soil erosion – General lack of treatment facilities; poor maintenance, lack of spare parts and high running costs in on-site treatment works.	– Lack of regulatory/incentives framework and environmental legislation. – No monitoring and enforcement. – Lack of environmental impact assessment.

Annex 2

FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA ORGANOGRAM

October 18, 2001



Annex 3 Synopsis of the Federal Democratic Republic of Ethiopiarural Development Policy and Strategy (RDPS)

(Unofficial translation and synopsis from the Amharic version by the Author)

The RDPS is a 278-page document with three major sections covering introduction, rural and agriculture development policies and strategies, rural development management.

The introduction and background section focuses on the justifications of rural and agriculture development centered strategy. The strategy claims to ensure the attainment of sustainable and accelerated development through efficient use of the country's labor and land and discourages any subsidy scheme. The strategy envisages to also help the country to be self-reliant and promote a free market system. The major elements of the strategy are outlined below with *only key phrases* to provide an overview of the content of the strategy.

1. Agriculture Development

Agriculture needs to be labor intensive based, appropriate agricultural land use need to be promoted, productivity should be maximized from existing and available potentials, focus should be on agro ecology based and integrated development.

2. Human Resources Development

Promotion of hard work and work ethics, strengthening of training for farmers in the field of agriculture, to improve the health of farmers through preventive measures, improve the provision and dissemination of agricultural technology (imported rather than wait for local research outcomes), intensive farming methods.

3. Appropriate Utilization of Land Resources

Implementation of the provisions of the constitution on land tenure*, promotion of appropriate land use system, improve and promote water resources utilization.

4. Promotion of Agro ecology Based Development Package

Diversification and specialization, programs for drought prone area including settlement, natural resources conservation and livestock development, and improved water resources use; programs for areas with dependable growing periods, programs for pastoral areas, programs for area with large tract of uncultivated land.

5. Promotion of Market Oriented Agriculture Development

Argues accelerated development not possible in non market oriented agriculture development, develop an agriculture sector which produces marketable goods, Improve the agriculture marketing system through establishment of standardization system, provision of marketing information and promotion and strengthening of cooperatives, strengthening the participation of the private sector in agricultural marketing.

6. Improve Rural Financial System

Promote the collaboration of banks and cooperatives, promote and strengthen rural banks, strengthen cooperatives and agricultural marketing.

7. Strengthen the Participation of the Private Sector in Agriculture Development

Attract external investors to the agriculture sector, participation of the private sector in agriculture training, collaboration of the private sector and farmers through contract arrangements such as out growers arrangement.

8. Increase the stock of rural infrastructure

Increase education and health services, expand rural roads and transport, improve rural water supply services, improve additional rural infrastructure.

9. Strengthen the Rural Non-agricultural Development Sectors

Argues the need to strengthen the development of the non agricultural sector, utilize to the maximum the development potential of the agriculture sector, strengthen the rural urban relationship.

Section 3 of the strategy concludes with the required management of rural development based on community participation and piloting the strategy with model farmers.

Land Tenure Issues Explained

- Land belongs to the state
- Farmers can use land free of charge for agricultural purposes for unlimited time and have inheritance right
- The government can redistribute land when found necessary
- The government can allocate land which is not used by farmers to other uses
- Private investors can invest in agriculture development on long term lease basis
- If any land of a farmer is confiscated by government full compensation will be paid for all investment and land improvement made by the farmer
- Land can not be sold or mortgaged
- Farmers can not sell their land, mortgage or use it as a collateral for loan purposes
- Farmers can rent their holding and can employ family or other labor to develop their land

Due to the above explanations the strategy claims that the provisions have more in common with the free hold system than the state ownership system.

Response the various criticisms of the land tenure policy:

(Criticisms indicated in italics and the arguments of RDS in normal font)

Constraint for promoting large-scale farming

The critics presume buying out small farms in the highland, which will cause displacement and cause labor wastage. Large-scale farms can be developed in the lowlands through lease arrangements.

Land cannot be used as collateral and is a constraint for expanding banking and finance in rural areas

Rural banking and finance can better be expanded through rural credit systems

Farmers will not invest and improve land due to absence of tenure security and frequent land redistribution

Compensation is guaranteed as it is the case in the freehold system and in both systems there are possibilities of confiscation of land on the basis of proper compensation. Farmers should get tenure security and a certificate of assurance of no redistribution for 20 to 30 years.

Encourages land fragmentation due to the inheritance right and forbids sale of land

Land fragmentation can only be addressed through rural technology transformation and accelerated econmic development and promoting alternative employment for the farmers. Framers are allowed to lease their land on long-term basis (10 to 20 years) to investors which will assist in introducing technology and employment in the rural areas.

Annex 4 Sida Assisted Completed Projects

No	Project	Sector	Time Frame	Allocation Million US$
1	Education	Education	1992–1999	27.43
2	Health	Health	1992–1999	10.91
3	Water	Water	1992–1998	2.00
4	Mapping	Mapping	1992–1996	1.83
5	ERRP	Integrated programs	1992–1994	11.00
6	RRC Trucks	Transport	1992–1994	11.00
7	Locust Control	Agriculture	1992–1996	0.71
8	Strengthening the Rule of Law	Governance	1992–1996	1.00
9	Fund for long term planning	Study	1994–1996	1.00
10	EMI	Education	1995–1999	1.00
11	Amhara Regional Planning Phase	Water	1994–1996	4.29
12	Balance of Payment Support	Finance	1995	20.0
13	Emergency Fund	Agriculture	1992–1996	7.46
14	Essential drugs	Health	1992–1996	4.29
15	Research Cooperation	Research	1998–1999	4.10
16	Rehabilitation of S.Wello	Agriculture	1992–1998	1.93
17	Elections 1993	Governance	1992–1994	0.63
18	Fincha sugar Factory	Industry	1992–1996	2.8
19	Conservation oriented Rural Roads	Transport	1993–1994	0.06
20	Forestry education	Education	1997–2000	3.8
	Total			117.24

Annex 5 Sida Assisted Ongoing Projects

No	Project	Sector	Time Frame	Allocation, Million SEK		
				Total	Expenditure To date	Balance
1	Forestry education	Education	01/01/99 to 30/6/2003	78.2	26.3	51.9
2	Rural Development Program in Amhara Region	Integrated development	08/5/97 to 30/12/2005	482.5	282.5	200
3	Local Food Procurement Project	Agriculture	1/2/2001 to 31/8/2002	67.0	47.0	20.0
4	Personnel and Consultancy Fund	Education	8/5/97 to 31/12/2002	10.0	8.13	1.87
5	Support for PRSP	Study	2001/2002	0.5	0.5	–
6	Unallocated fund	–	1/1/2002–31/12/2002	150	–	150
	Total			788.20	364.43	423.77

Source: MoFED, Internal Memo

References:

1. The Federal Democratic Republic of Ethiopia, 2002, *Capacity Building Strategy of Ethiopia.*
2. _____, November, 1996, *Food Security Strategy.*
3. _____, no date, *Agriculture Sector Strategy.*
4. Ministry of Information, Hidar, 1994 E.C, *Rural Development Policies, Strategies and 'Seult'.*
5. ANRS/Sida Cooperation in Rural Development, Bahir Dar, November 30, 1996, *Sida Support to The Amhara National Regional State, Programme Document (Final Revised).*
6. Sida, Department for Natural Resources and the Environment, January 1996, *Sida's Policy Sustainable Development.*
7. Information Department of Sida, 1998, *Sida at Work-Sida's Methods for Development Cooperation.*
8. Information Department of Sida, 1997, *Sida Looks Forward-Sida's Programme for Global Development.*
9. Sida, Department of Policy and Legal Services, December 1996, *Sida's Poverty Programme- Action Programme to Promote Sustainable Livelihoods for Poor and to Combat Poverty.*
10. Sida, Department for Democracy and Social Development, may 1997, *Justice and Peace-Sida's Programme for Peace, Democracy and Human Rights.*
11. Sida Department for Policy and Legal Services, April 1997, *Sida's Action Programme for Promoting Equality Between Women and Men in Partner Countries Policy.*
12. Peter Oates & Senait Seyoum, December 2000, *Indicative Social impact Evaluation of Phase I Sida Support to the Amhar National Regional State.*
13. Internal Memo, Ministry of Finance and Economic Developent,,t, no date, *A Synoptic View of Achievements of SARDP*
14. _____, *Ethio- Swedish Development Cooperation, Updated 2002.*
15. FDRE, Environmental Protection Authority, October 2001, *National Agenda 21 Implementation Review Report.*
16. Tesema Tanto & Abebe Demissie, IBCR, 2001, *A Dynamic Farmers' Based Approach to the Conservation of Ethiopia's Plant Genetic Resources.*

Halving poverty by 2015 is one of the greatest challenges of our time, requiring cooperation and sustainability. The partner countries are responsible for their own development. Sida provides resources and develops knowledge and expertise, making the world a richer place.

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