Federal Democratic Republic of Ethiopia
Ministry of Water Resources
National Meteorological Services Agency

Initial National Communication of Ethiopia to the United

Nations Framework Convention on Climate Change

(UNFCCC)

June 2001

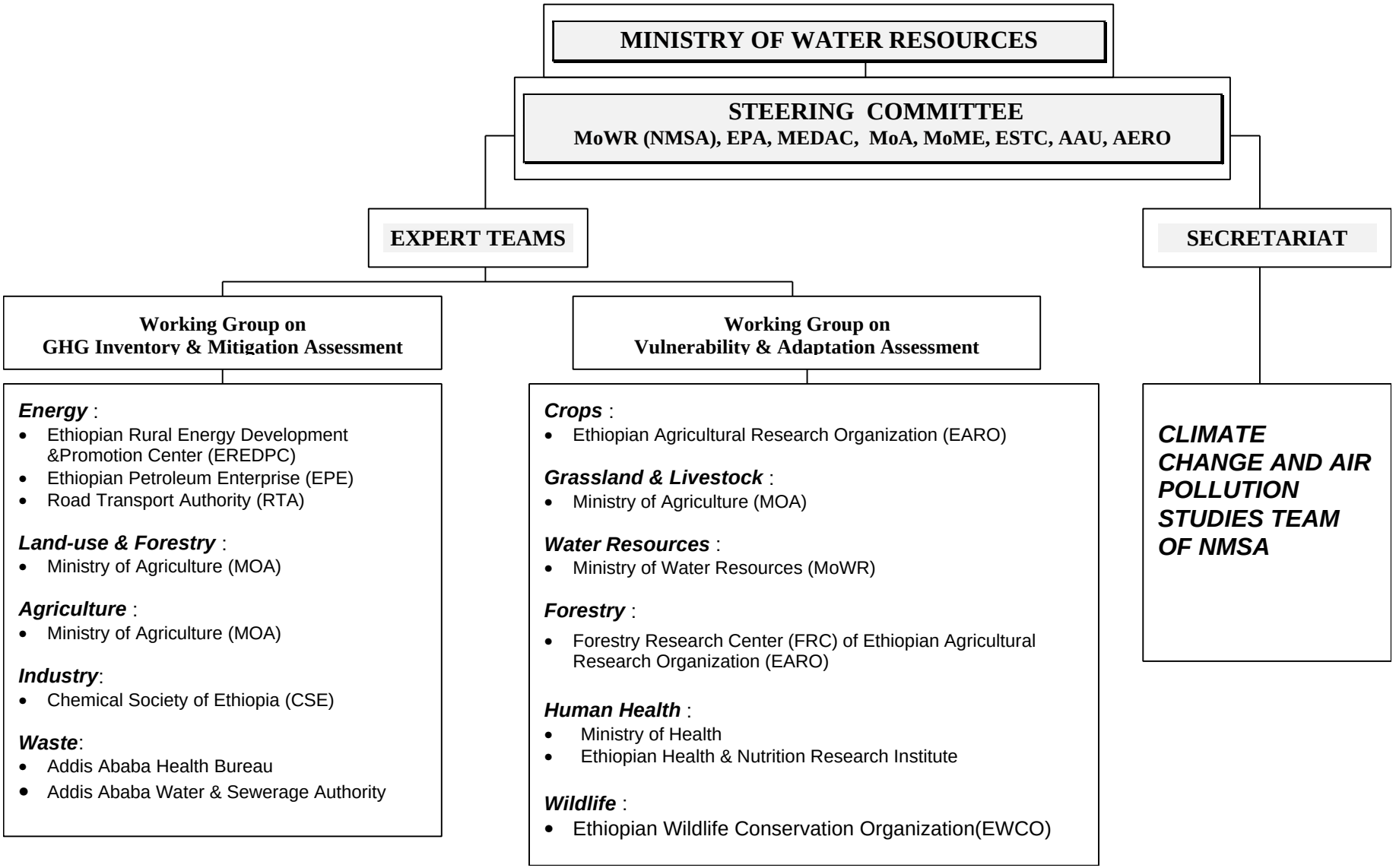
Addis Ababa, Ethiopia

Initial National Communication of Ethiopia to the UNFCCC

Submitted to the COP through the UNFCCC Secretariat

IN OCTOBER 2001

ORGANIZATIONAL CHART OF ADMINSTRATION TO COPE WITH GLOBAL WARMING (Ad-Hoc Structure)



1. CONTENTS OF THE NATIONAL COMMUNICATION

- **An Executive Summary**
- **10 Chapters**
- **4 Annexes**

2. NATIONAL CIRCUMSTANCES

GEOGRAPHY	**Located in the Horn of Africa, 3^0-15^0 N latitude and 33^0-48^0E longitude, with an area of 1.12 million km^2 and complex topography**
CLIMATE	**Diversified climate ranging from hot and semi-desert to mild and** humid. T**here has been a warming trend in temperature over the past 50 years. The average annual minimum temperature over the country has been increasing by about 0.25 ^{0}C every ten years while average annual maximum temperature has been increasing by about 0.1^{0}C every decade.**
HISTORY	**One of the ancient settlements and civilizations in the world with rich cultural and architectural heritages**
POPULATION	**53.5 million with growth rate of 3% per year in 1994 projected to be 129 million by 2030, the third largest in Africa after Nigeria and Egypt. 85% of the population live in rural areas.**
ADMISTRATION	**Federal Democratic Republic**

2. NATIONAL CIRCUMSTANCES

Cont...

ECONOMY	**In 1994 gdp per capita was $ 120 and sectoral shares to the national economy was agriculture (50%), industry (11 %), services (39%).**
ENERGY	**Current energy consumption pattern is biomass 95 % , petroleum 4%, hydro 1%. the country has enormous potential of renewable energy resources such as hydro, solar, wind, biofeul, and geothemal. There are also non renwable source of energy such as natural gas and coal.**
WATER RESOURCES	**Ethiopia is known as the "water tower" of Northeast Africa. There are 12 major river/drainage basins many of which are transboundary. The total annual runoff from these basins is estimated at about 111 billion cubic meters. There are also eleven major lakes**
LAND USE/ LAND COVER	**Grazing and browsing (50%), cultivation (17%), forests and woodlands (24%)**
WILDLIFE	9 national parks, 3 sanctuaries, 8 reserves and 18 controlled hunting areas

2. NATIONAL CIRCUMSTANCES

Cont...

AGRICULTURE • **Crop Production** • **Livestock**	**Agriculture is the most important economic sector in the country. It directly supports about 85% of the population in terms of employment and livelihood. It contributes about 50% of the country's gross domestic product (GDP). It generates about 90% of the export earnings** **The production of crops is dominated by small scale subsistent farmers. Cereals, Pulses, Oil Seeds, Stimulants, Fruits, Sugarcane, Fibers, Vegetables, Tuber crops are produced. It is estimated that 16.5 million hectares (14.8% of the country) is under cultivation About 73.6 million hectare (66%) of the country's land area is estimated to be potentially suitable for agricultural production. the potential irrigable land in the country is about 3.7 million ha.** **Ethiopia has the largest livestock population in Africa and the tenth largest in the world. currently there are about 88 million heads of livestock**
BIODIVERSITY	**Ethiopia is rich in flora and fauna with considerable endemism. She has the fifth largest flora in tropical Africa . The country is also one of the 12 Vavilov centres 7000 species of higher plant, 277 terrestrial mammals, 862 species 0f birds, 201 species of reptiles, 63 species of amphibians are recorded so far.**

2. NATIONAL CIRCUMSTANCES

Cont...

- **Facts and Historical Data**
- **Natural Resources Potential**

Generally Speaking

- **Ethiopia is a Large Country with a Large Population, Endowed with Considerable untapped Natural Resource but a Least Developed Country**

3. NATIONAL GHG INVENTORY

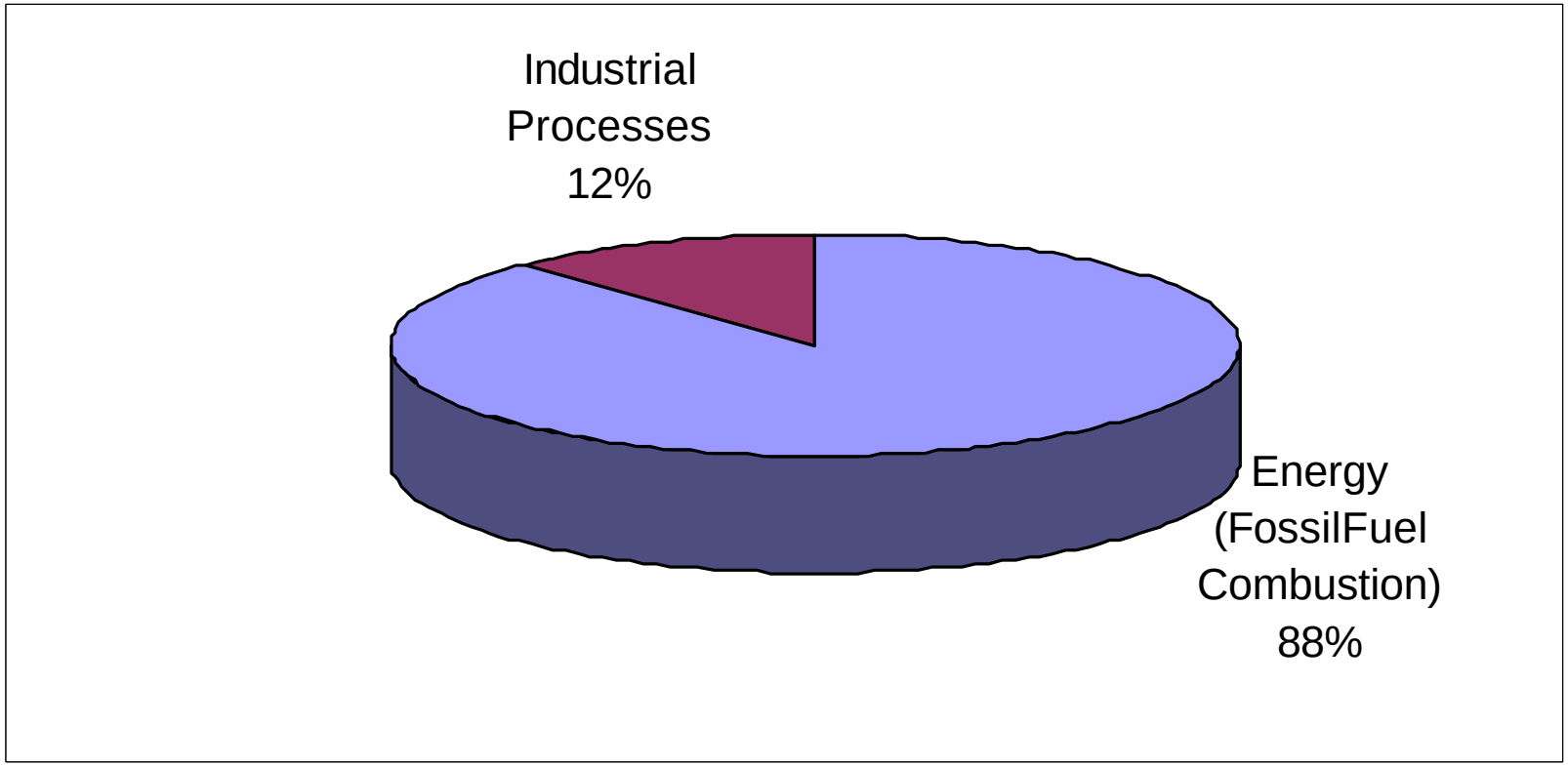
- **Inventory of GHGs for the Years 1990-1995**
- **Covering Seven Gases CO_2, CH_4 , N_2O , CO , NO_X , NMVOC , SO_2**
- **4 Sectors Addressed: Energy, Agriculture, LUCF and Waste,**

GHG EMISSIONS IN ETHIOPIA

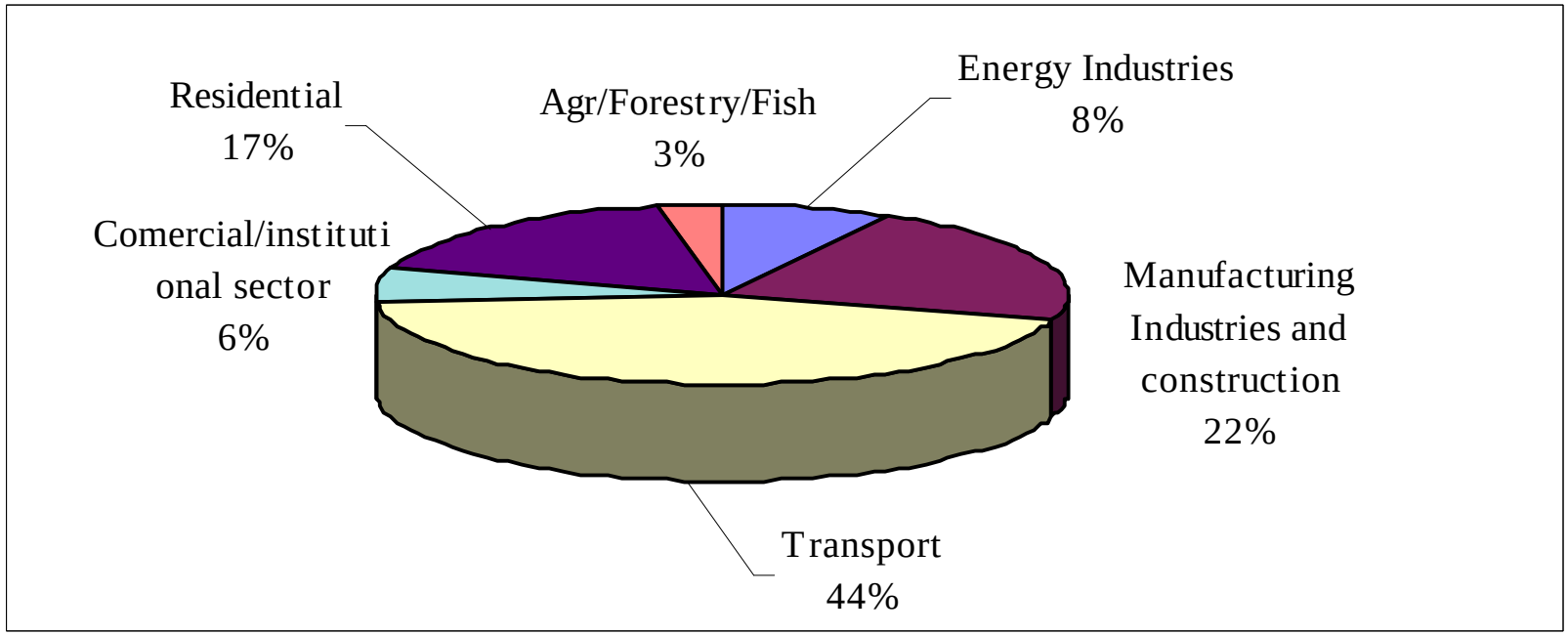
1994 (Gg)

Sector	CO_2	CH_4	N_2O	CO_2 eq
Energy	2,285	194	3	7,289
Industry	310	-	-	103
Agriculture	-	1,540	19.7	38,455
Waste	-	46	1.5	1,418
LUCF	-15,063 (net)	28	0.2	??
				??

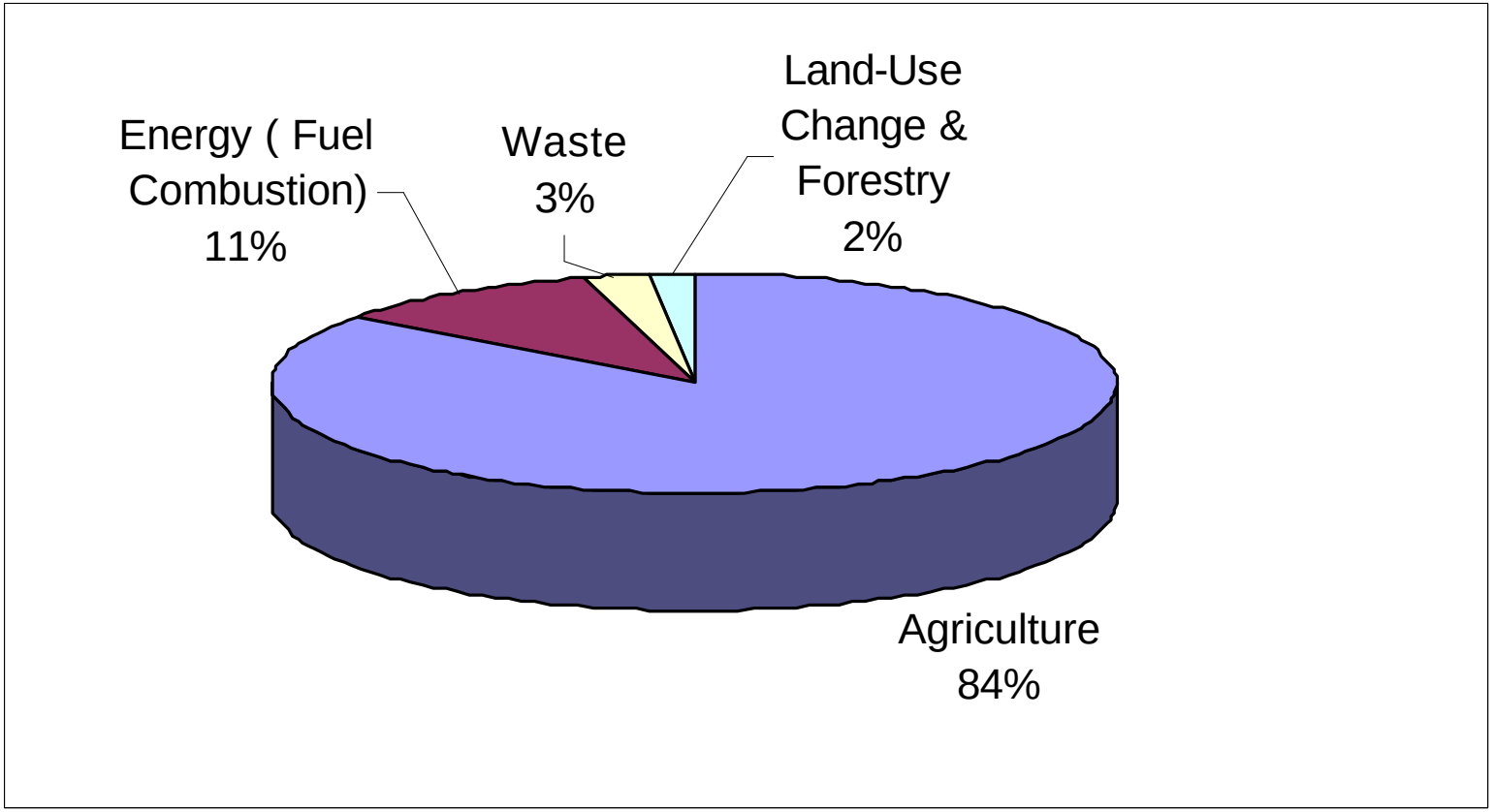
Sectoral Carbon Dioxide (CO_2) Emissions -1994



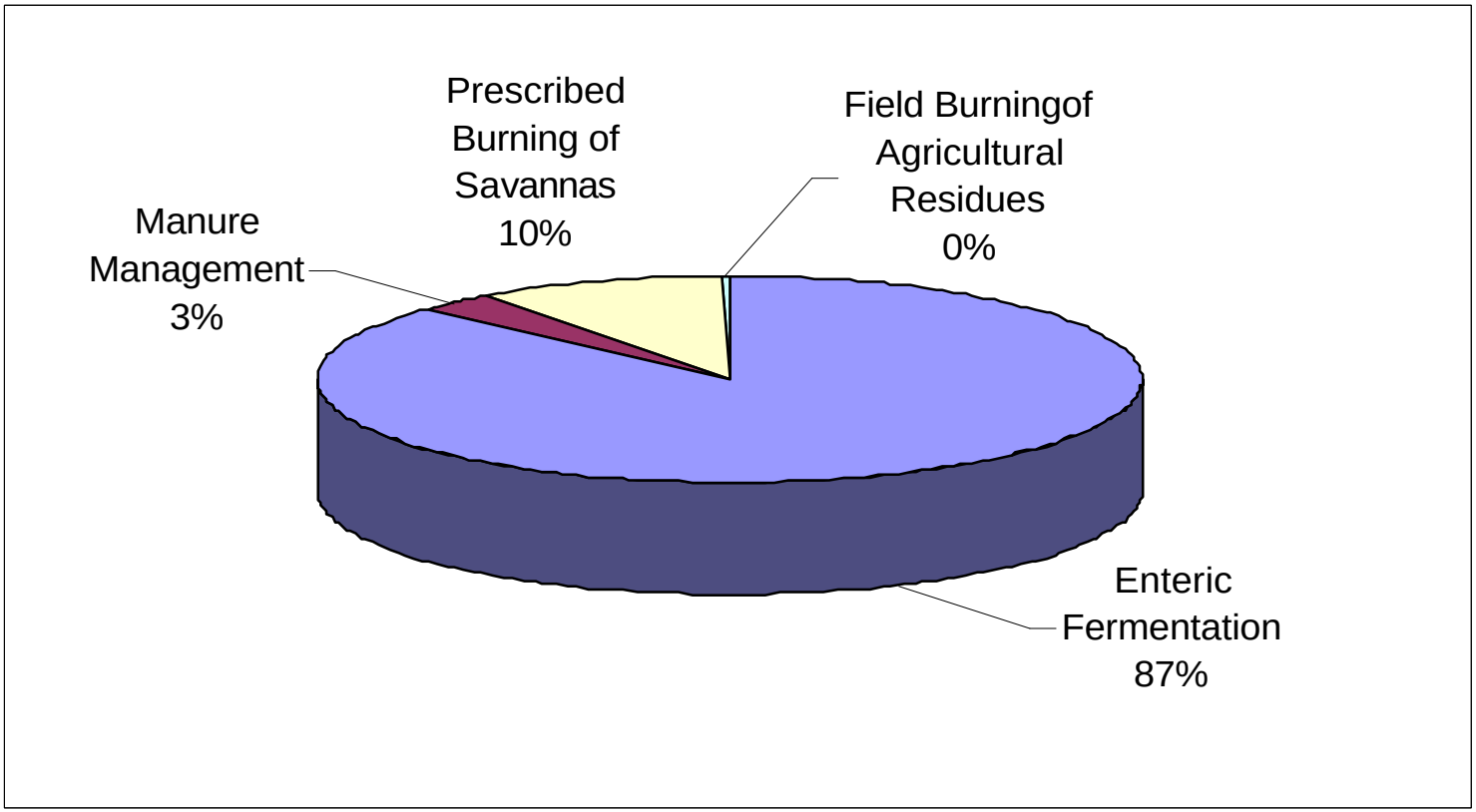
CO_2 Emissions from the Energy Sector-1994



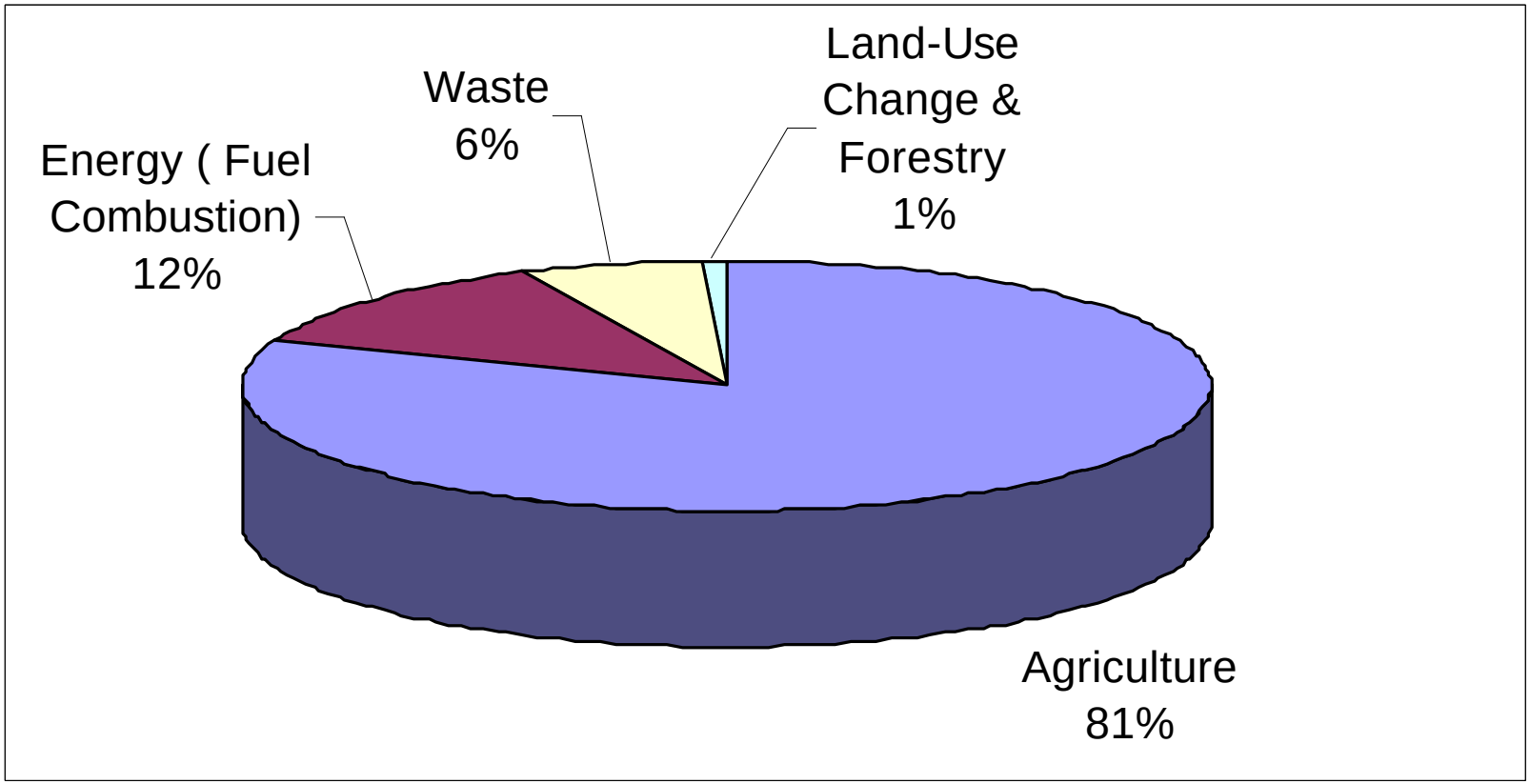
Sectoral Methane (CH_4) Emissions-1994



CH_4 Emissions in the Agriculture sector-1994



Sectoral Nitrous Oxide (N_2O) Emissions -1994



4. GENERAL DESCRIPTION OF STEPS

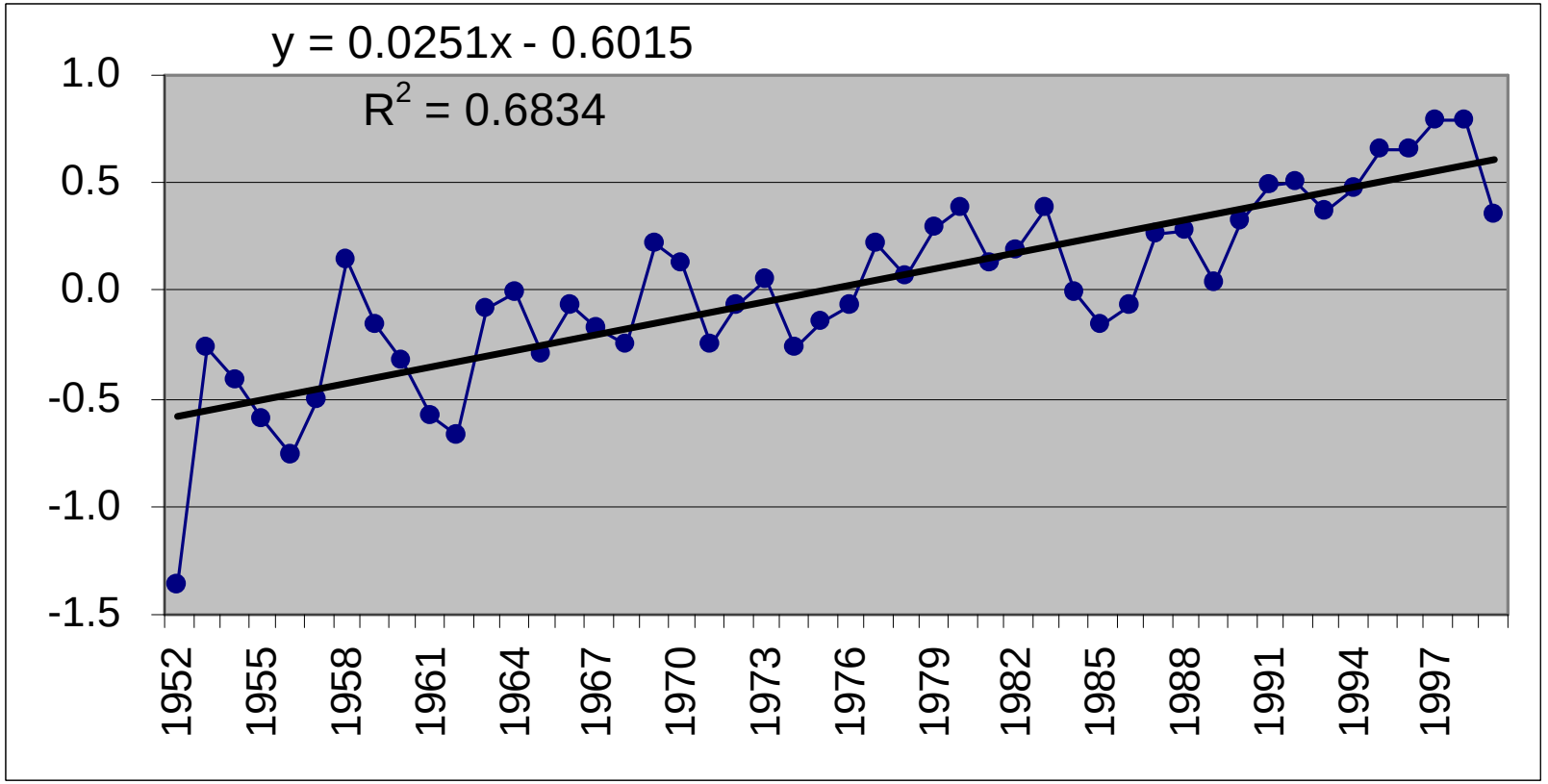
- **Assessment of Greenhouse Gas Mitigation Options**
  - **Models and expert judgment applied**
  - **4 sectors addressed**
    - **Energy, LUCF, Agriculture, Waste**
  - **a number of win-win mitigation options identified,**
    - **Energy efficiency improvement**
    - **Renewable Energy Generation**
    - **Ethanol blending**
    - **Forest Preservation, Reforestation, Afforstation**
    - **Waste Composting**

4. GENERAL DESCRIPTION OF STEPS

Cont...

- **Vulnerability And Adaptation Assessments**
  - **Models, GCMs and Expert Judgment Applied**
  - **6 socio-economic sectors addressed**
  - **crops, livestock, water resources, forestry, wildlife, human health**
  - **negative and positive impacts projected and a number of adaptation options identified**

Year to Year Annual Mean Minimum Temperature Variability and Trend over Ethiopia



4. GENERAL DESCRIPTION OF STEPS

Cont...

- **Policies, Programs and Measures Related to Climate Change**
- **Research and Systematic Observation**
- **Education, Training and Public Awareness**
- **Financial, Technological and Capacity Building Needs and Constraints**
- **Implementation Strategy and Monitoring**

FINANCIAL, CAPACITY BUILDING NEEDS

- **Data Collection and Monitoring**
- **Training**
- **Research and Studies**
- **Awareness Creation**
- **Development of National Climate Change Network**
- **Strengthening of the National Focal Institution**

5. PROBLEMS

- **Lack of Data and Information**
- **Inadequate Technical Expertize in Climate Change at National Level**
- **Inadequate Technical Backstoping Service to Provide Skills on Analytical Tools**
- **Lack of Access to Analytical Tools**
- **Low Level of Awareness About Climate Change at All Levels**

6. RECOMENDATIONS

- **Strengthen National Coordination Mechanism**
- **Enhance National Technical Capacity Through Training**
- **Establish Data Base for Climate Change Research**
- **National Level Research in Climate Change Issues Need to be Continued and Enhanced**

6. RECOMMENDATIONS

Cont...

- **Establish a Network of National and Regional Experts**
- **Improvements in the Current UNFCCC Guideline for the Preparation of Non-Annex I National Communications**
- **Improvement in Accuracy of Climate Prediction**
- **Sustained Financial Support**