PRESENTATION OF BURUNDI'S SECOND NATIONAL COMMUNICATION ON CLIMATE CHANGE(SNCCC)

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4th December 2010, CANCUN-MEXICO

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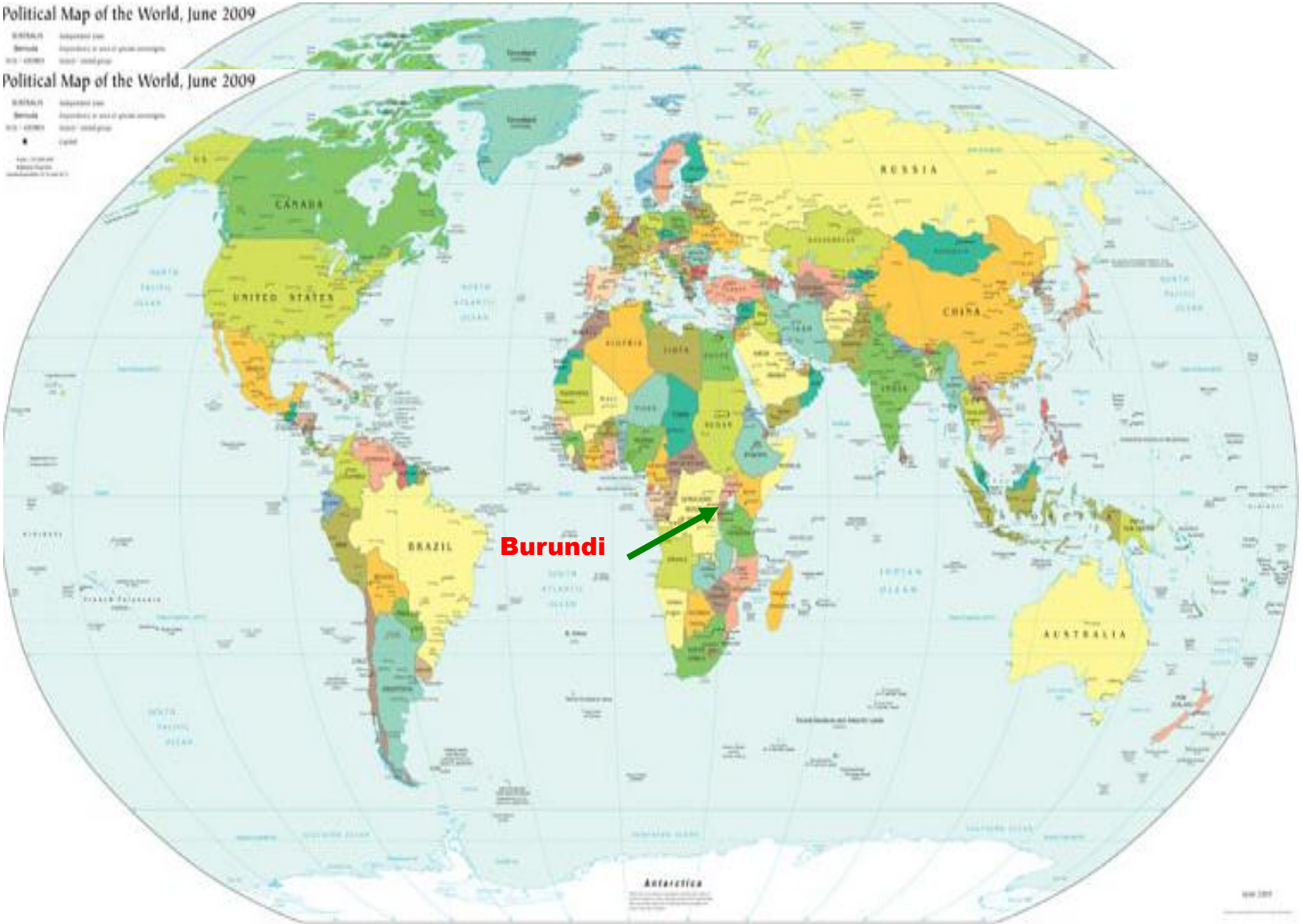
Burundi Profile: Location

- Burundi is located in East central Africa, bordered to the North by Rwanda, to the West by Democratic Republic of Congo, and to the East and South by Tanzania .
- Burundi lies between 2°30'and 4°30' latitude south and between 28°50'and 30°53'30''longitude East,
- Area:27,834 sqkm, with 92,2% of land and 7,8% of water

I. Burundi Profile :Location



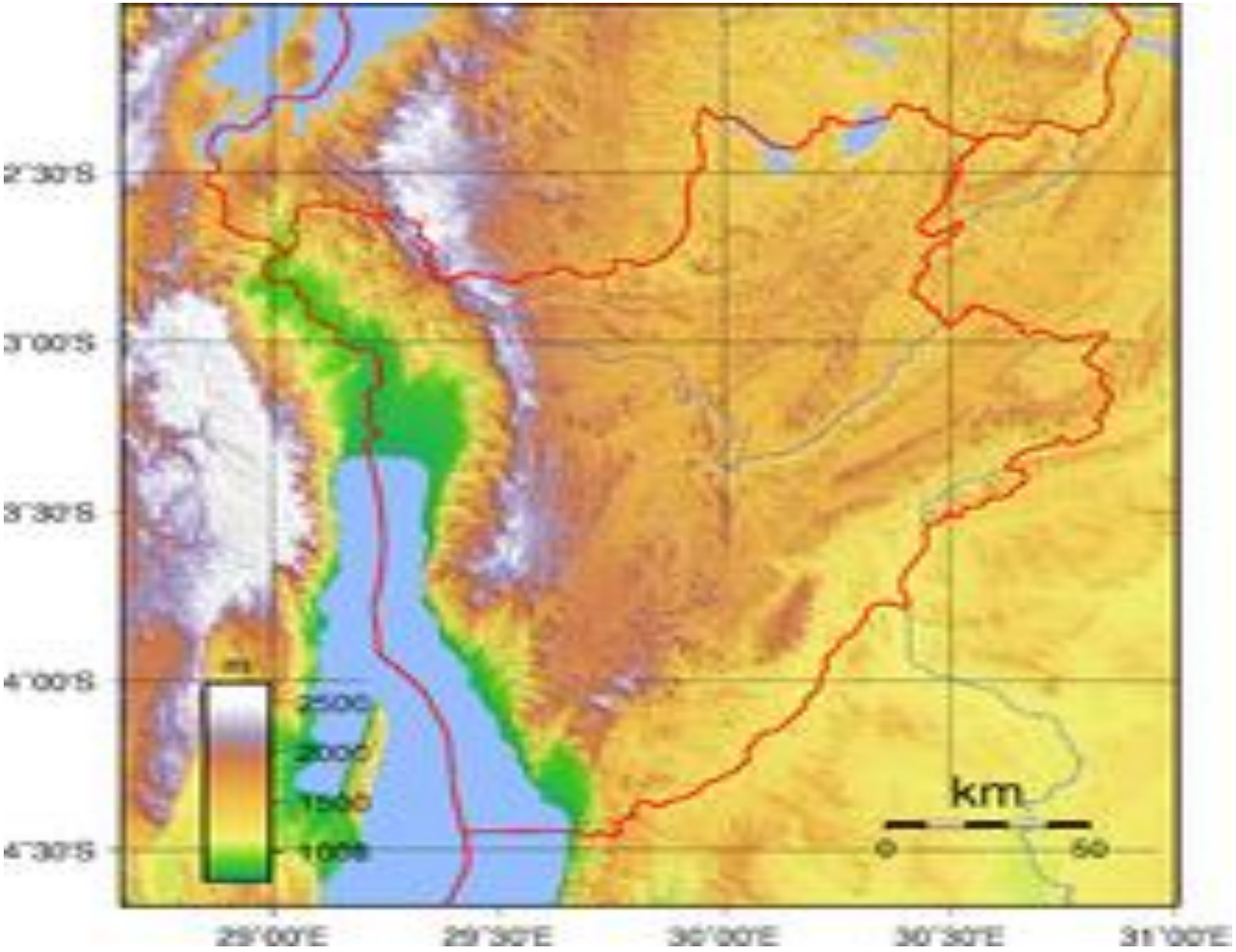
Burundi Profile (cont.)

- Burundi presents 5 topographical zones:

1. Rusizi /Tanganyika Plain,
2. Mumirwa region
3. Congo Nile Ridge: includes the great secondary forest of Kibira,
4. Central plateaus featuring rolling hills,
5. Depressions of the East and North East featuring tree-dotted savanna,

- The Highest point is Mont Heha: 2670m, and the lowest is Lake Tanganyika: 772m

Illustrative Map



Burundi Profile (Cont.)

- **Climate:**

i) Tropical high land climate.

ii) The temperature varies from one region to an other and with altitude (Av.: 17-23^{o}c)

iii) Rain is irregular falling most heavily in the North west (Av. Rainfall: 1500mm)

iv) For a normal year : Two Main Seasons : Dry season: June-August,

Rainy season: September- May

Burundi Profile(cont)

With climate Change, the dry season become long and the rainy season short.

That situation is the cause of Agricultural calendar change. Then, there is disturbance of the rainfall mode that will be finally composed by 2 large 6-month seasons, one rainy season lasting from November to April and a dry season covering May to October.

Burundi Profile(cont)

- The agriculture, especially the rain fed agriculture occupies 94% of the working population, contributes to more than 50% of GDP, provides 95% of the food contributions and more than 80% of the foreign income.
- It’s a main sector of the national Economy

but very vulnerable due to the climate change.

Burundi profile (cont.)

- **Population :** 8,038 ,618 inhabitants (2008 census)

Density: 323,0 inhabitant per SqKm

GDP nominal: 1,321 Millions USD(2009)

Per Capita: 162 USD,

- Currency: Burundi Francs (FBU, BIF),
- Time Zone: CAT (UTC+2),

II.Burundi SNCCC Project

The Second national Communication project has been implemented within 3 years from November 2006 to November 2009.

The principal results of the project have been met on: i) National inventory, ii) Mitigation studies, iii) Adaptation Studies and on iv) other information

i) National Inventory 2005: Total Emissions

SECTORS	ENERGY	AGRICULTURE	WASTE	LULUCF	NET EMISSIONS
QUANTITIES ($Gg\text{-}ECO_2$)	2327.36	26819.55	207.94	-15 275.83	14 079.18
%	7,9	91,4	0,7	-52	47

ii) Comparison of emissions (1998 and 2005 in Gg- ECO_2)

Type of Emissions	**1998**	**2005**
CO_2	2288.81	2327.36
CH_4	0.13	0,16
N_2O	17 234.03	26 819.55
NOx	-2998.06	-15275.83
CO	105.35	207.94
Total Emissions	16 630.26	14 079,18

Comments on the inventory results

- The total emission is : 14 079.18 Gg- ECO_2
- The agriculture is the main source of emission of N_2O and CH_4
- The energy sector is the main source of CO_2
- The Forestry is a well of CO_2 emissions
- The emissions of 2005 are low than 1998 emissions: the reason is the reduction of the fire bush within that year.

ii) Mitigation Studies

- The Scenarios of reference have shown that all sectors sources of GHG: energy sector, agriculture, Use change and forestry, industry process and waste will increase their emissions from 2005 to 2050.
- The mitigation measures identified with the mitigation scenarios from 2010 to 2050 are

i) Birth planning, ii) Reforestation, iii) zero grazing, iv) clean technology, v) renewable energy and the reuse of organic waste.

Mitigation studies(cont)

A Mitigation Action plan has been proposed

- It suggests 8 specific objectives:

1.Clean technology to protect environment,

2. Promotion of Solar energy,

3. Promotion of economic oven to make charcoal and promotion of wood household in rural area,

4. Increasing of Hydropower station,

Mitigation Studies (cont)

5. Reduction of fuel oil boiler and promotion of hydropower boiler
6. Increasing of forestation and reforestation activities,
7. Promotion of organic waste treatment,
8. Promotion of clean technology in industry process.

The cost of the implementation of action Plan is estimated at 704 146 000 USD.

iii) Adaptation and vulnerability studies

- The data of climate parameters used in this section spread on 1974-2003,
- The Burundi NAPA results are taken into account in this section,
- The projections of climate parameters until 2050 have been used to assess the impacts of climate change in the vulnerable sectors: Water resources, energy, Agriculture and livestock, ecosystems and health.

iii) Adaptation and vulnerability studies (cont)

- Magic Schengen is the model used for climatic projections,
- Four main stations BUJUMBURA (Plain-low altitude) GISOZI (high altitude), MUSASA and KIRUNDO (depressions North-East and South-East) have been identified for the study,
- The Temperature in all regions is increasing from the 90’s.
- Regions in high altitude are more sensitive to high temperature than others.

Vulnerability of Agriculture sector

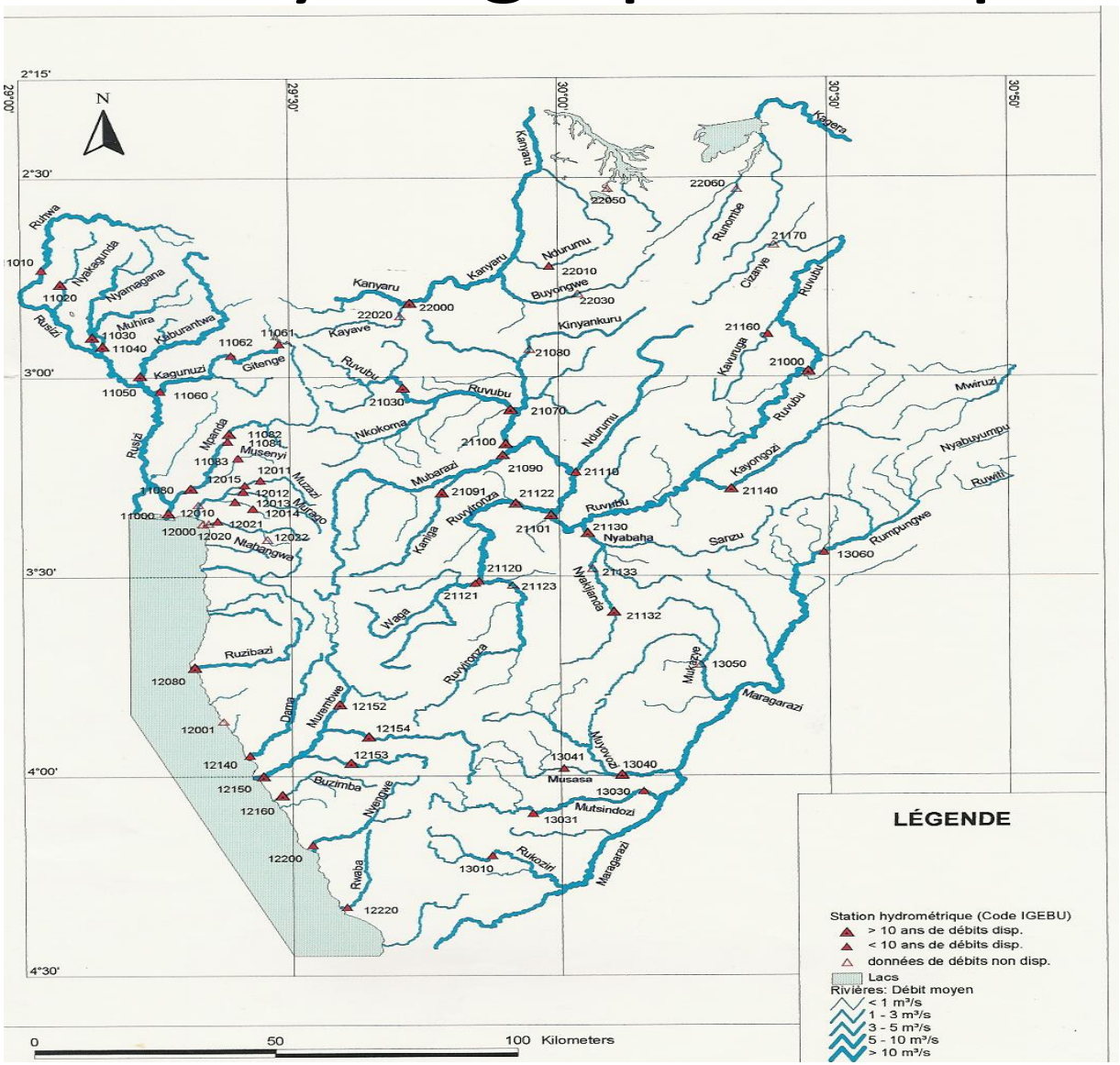
- The agriculture has lost the productivity because the climate change leads to the modification of agricultural calendar.
- The drought and floods unexpected reduce the yield of plants (crops).
- That situation leads to death, hunger

  and degradation of the soil especially in BUGESERA natural region in north-east and in Rusizi plain in the north-west.

Vulnerability of Water Resources

- According to the National Water Master Plan, surface waters amount approximately to 10 billion cubic m for the whole country:
- Lake Tanganyika: 32,600 Sqkm; 2,634SqKm for Burundi, second depth after Baikal Lake,
- Inland lakes in the North East among them are lakes Rwihinda : 39, 220 cubic m and Cohoha: 56,180 cubic m,

Hydrographic Map



Vulnerability of Water Resources balance for Average year

Rainfall	Evapotranspiration	Rate of flow	Runoff
1274mm/year	872mm/year	299mm/ year	103mm/year
1011m^3/s	692m^3/s	237m^3/s	82m^3/s
100%	68%	23%	9%

Vulnerability of water resources(cont)

- The lack of rain shows a gradual reduction in the levels and flows of the rivers and lakes in the country
- Adaptation efforts must be done in that sector because **rainfall deficit or dryness** for a long time and **more heavy rainfall** in a short time are respectively cause of:

- Food insecurity and water shortage,
- destructive floods, landslides and contamination of water supplies

Vulnerability of energy sector

- **Climate change affects hydropower resources and wood-energy:**

- The hydropower resources are dependant on the flows of the various rivers which dicrease In the dry period,

-Woods constitute the energy resource, the most consumed at the national level (95%), but that resource is in disappearance in arid areas.

Vulnerability of human health

- Human health is very sensitive to the variations in temperature and rainfall conditions,
- With rise of temperature, vectors of certain diseases like malaria become more favourable,

(extension of malaria in the area of Burundian central Plateaus),

Vulnerability of human healthy

- The wettest periods also correspond to a recrudescence of the waterborne and diarrheal diseases,
- The falls of temperature in their turn , are responsible of acute respiratory infections,
- The dry periods correspond on the other hand, to recrudescence of diseases like meningitis and diseases that result from the deficit in food production(malnutrition) but also the lack of basic hygiene and sanitation.

Vulnerability of ecosystems

- **Terrestrial ecosystems** are affected of aridity and soil degradation,
- In Eastern Burundi, acute aridity cause very important loss of the biomass wildlife. In that region termites become uncontrollable,
- In the West, exactly in Rusizi plain, climate change and the vegetation in disappearance will induce the installation of desert,
- The dryness will worsen the scope of bush fires and aggravation of desertification

Vulnerability of ecosystems(cont)

- The high temperature on **wet ecosystem** like lakes should be subjected to an eutrophication which have substantive incidence on the composition of biodiversity especially fish fauna,
- With heavy rainfall, lakes and rivers are full of water . The principal treat is related to over-silting in lower valley following intensive erosion on steep slopes.

Desertification: illustrative photos

Consequence of premature drought

Water in Lake Tanganyika going back during a lengthy drought

A starving child during a lengthy drought

Starving children at the hospital

Flood on the road after a torrential rain

A destroyed bridge after repetitive floods

Land slide after torrential rain

Flood in the valley

Adaptation Strategies

An adaptation strategy is annexed on the SNCCC.

The objective of that strategy is to promote a sustainable management of natural resources, a sustainable development of socioeconomic sectors, to fight against poverty and to reduce natural disasters.

That adaptation strategy is conform with the National framework of Poverty Reduction adopted in 2006.

Adaptation strategy (cont)

- The specific strategies are:
- To reinforce the institutional framework to support sectors in charge of environmental matters,
- To insure the best knowledge and the information exchange on scientific, technical and economic aspects of the vulnerability and the adaptation on the climate change,

Adaptation strategy(cont)

- To integrate climate change in the national and regional policies and programs of sustainable development and disaster reduction,
- To elaborate and implement specific measures of adaptation related to the vulnerable sectors in particular: i)Energy, ii) Water resources,

iii) Agriculture and livestock, iv) ecosystems and health.

- The cost of the adaptation Plan is estimated at 79 084 000 USD.

iv) Other Information

- **Integration of climate change in national development policies:**

- A code of environment exist but still needs an application law on climate change,
- Organics structures to implement the UNFCCC exist (Ministry in charge of environment with an Environment department and a Geographic institute which are national focal points of the UNFCC Convention.
- The first national communication and NAPA are being implemented,

iv) Other Information

- The public is sensitized and a manual of information and sensitization has been developed in the SNCCC process to reinforce the public awareness in climate change matters.

- **Transfer of technologies**

- The Burundi Geographic institute has a meteorological and an hydrological system to supply data on climate change and an internal system of communication, but it

- It needs enough executives and trained technicians,
- It also needs an international exchange within the WHYCOS System,
- Burundi research on climate system needs to be improved in general,
- Burundi needs to promote renewable energy to protect trees which are used like wood energy and charcoal by 95% of the population.

iv) Other Information

- **Lacunae and constraints,**

- lack of application texts of the Code of Environment related to climate change,

-there is a need of enough financial and material capacities to enable the Ministry of Environment to implement the adaptation and the mitigation measures.

iv) Other Information

- **Financial Needs and capacity building**

- Needs in financial resources to reinforce activities under the mitigation and the adaptation because the national resources is still very low,

-Needs capacity building in using climatic tools, in particular models to assess the mitigation measures and to assess the socio economic impacts of the climate change

iv)**Other Information**

- **Contribution of Bilateral and Multilateral sources**

- There is a need to improve the accessibility of financial resources and clean technologies for developing countries Parties including BURUNDI to implement measures and projects Identified in mitigation and in adaptation studies.

IV. Lessons learnt

- The carrying of the SNCCC has involved all sectors sources of greenhouse gas and vulnerable due to climate change impacts.
- It become easy for those sectors to integrate climate change in their policy.
- The training organized in Pretoria for the coordinators of the national communication was helpful to make progress in the project implementation.
- The lack of trained experts is another cause of the weak implementation of the mitigation and the adaptation projects.

Lesson Learnt

- The translation in English of the executive summary of the national communication could be improved:

-We suggest an additional budget to translate the whole document in English.

This could permit to be understood by many partners and Parties. We hope that it could be a possible way to improve the implementation of national communications.

V. NEXT STEPS

- After this COP16:

- We wish to get the permission by the secretariat to use the balance of the SCNCC budget to translate the communication in English,
- We wish to use that balance to organize a workshop for sensitization on the COP16 outcomes.
- We expect to prepare the third Communication PRODOC from January,
- We also have to start the first PRODOC to implement NAPA BURUNDI.

How to obtain the BURUNDI SECOND NATIONAL COMMUNICATION on climate change?

THE WHOLE Document could be downloaded on the UNFCCC WEB SITE.

THANK YOU FOR YOUR ATTENTION!