

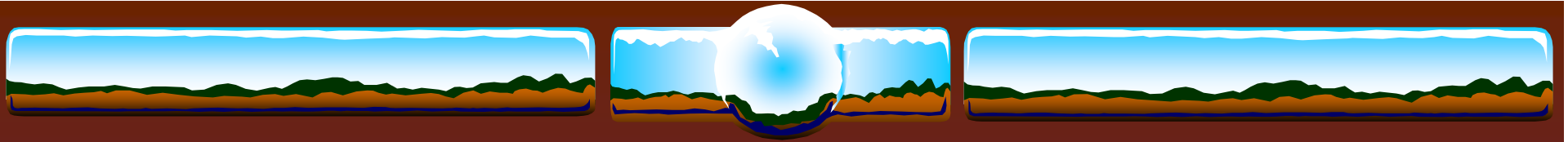
BIODIVERSITY, NBSAPs and THE WAY FORWARD: THE ETHIOPIAN SCENARIO

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The National Herbarium, Science Faculty,
Addis Ababa University, NBSAPs Workshop,
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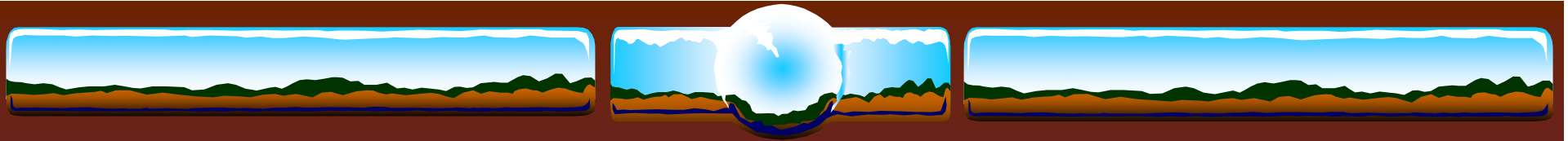
OUTLINE

- ❖ **1. WHAT IS BIODIVERSITY?**
- ❖ **2. ETHIOPIAN BIODIVERSITY**
- ❖ **3. NBSAPs PROCESSES (PRESENTED)**
- ❖ **4. MILLENIUM DEVELOPMENT GOALS**
- ❖ **5. THREATS TO ETHIOPIAN BIODIVERSITY**
- ❖ **6. INSTITUTIONS AND CONVENTIONS**
- ❖ **7. ??? QUESTIONS**
- ❖ **8. THE WAY FORWARD**



1. WHAT IS BIODIVERSITY?

- ❖ Biological diversity or “biodiversity” has been defined by the Convention on Biological Diversity (CBD) as: “the variability among living organisms from all sources including *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems”. In short, **biodiversity** refers to **the variety of life on earth**. This variety provides the building blocks to adapt to **changing environmental conditions in the future**.



2. ETHIOPIAN BIODIVERSITY

2.1. Physiography, altitudinal variation, and diversity

- ❖ **Location:** between 3° and 15°n latitude and 33° and 48°e longitude in the horn of africa and covers a land surface of over 1.11 million km².
- ❖ **Altitudinal variation:** an area with 110 m below sea level at the Afar depression on the NE part to an area with 4600 m asl in the Simen in the northern part of the country
- ❖ **Vegetation** from semi-desert to afroalpine

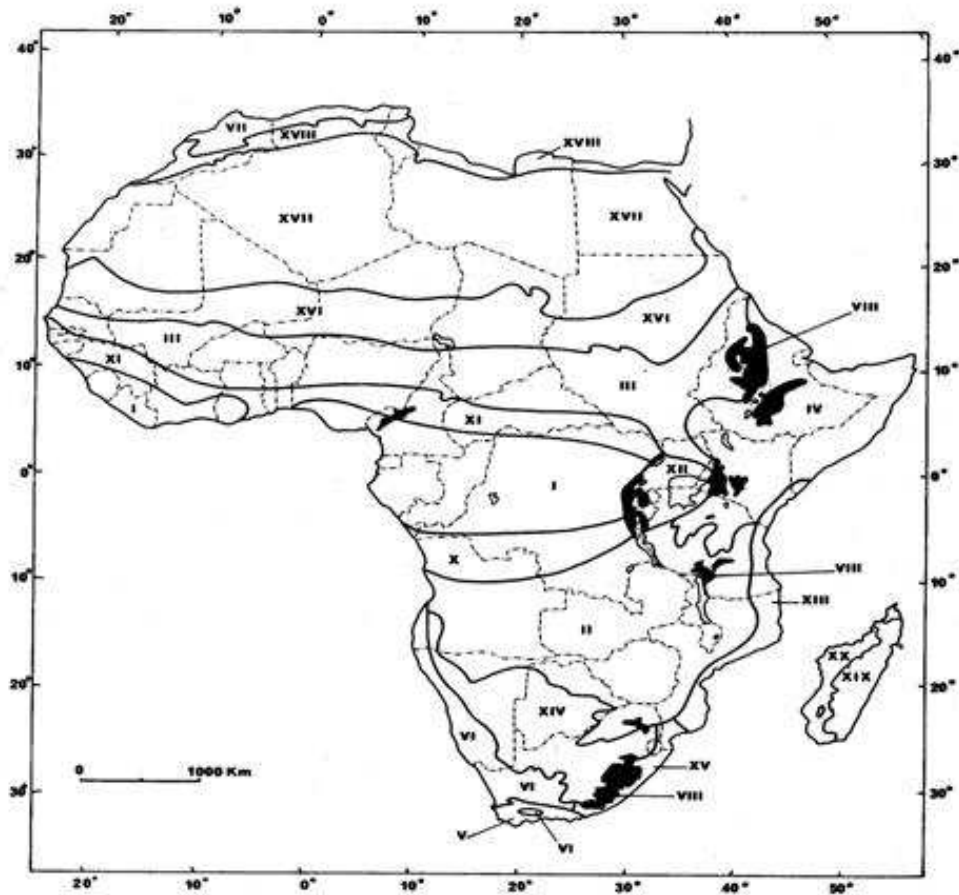
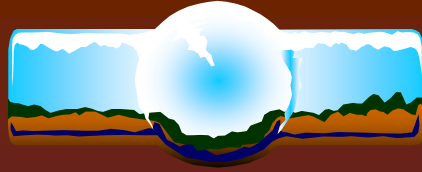
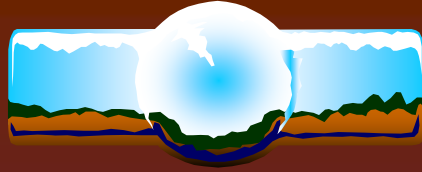
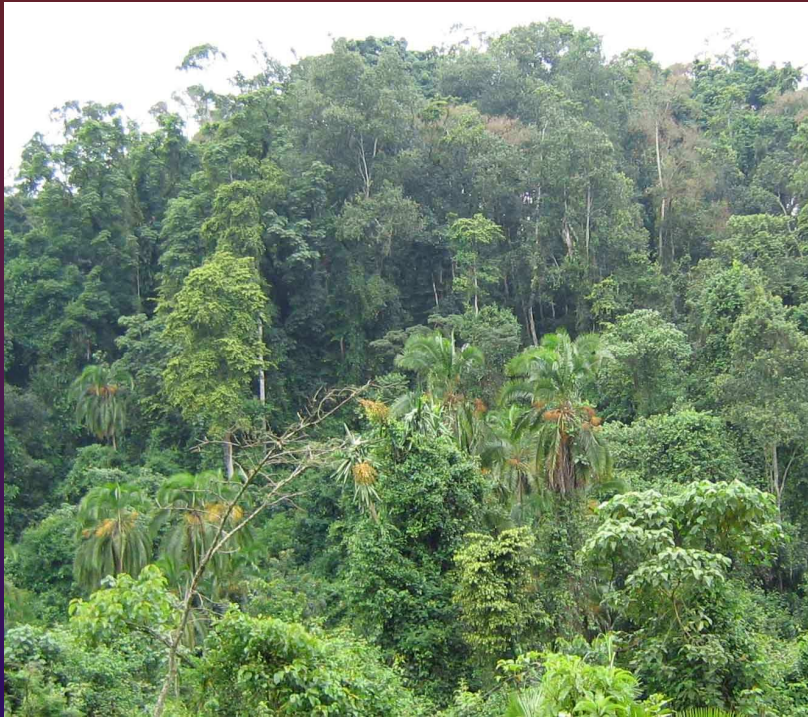
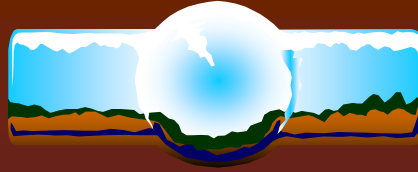


FIG. 4. Main phytochoria of Africa and Madagascar

I. Guineo-Congolian regional centre of endemism. II. Zambesian regional centre of endemism. III. Sudanian regional centre of endemism. IV. Somalia-Masai regional centre of endemism. V. Cape regional centre of endemism. VI. Karoo-Namib regional centre of endemism. VII. Mediterranean regional centre of endemism. VIII. Afrotropical archipelago-like regional centre of endemism, including IX, Afroalpine archipelago-like region of extreme floristic impoverishment (not shown separately). X. Guinea-Congolia/Zambesia regional transition zone. XI. Guinea-Congolia/Sudanian regional transition zone. XII. Lake Victoria regional mosaic. XIII. Zanzibar-Inhambane regional mosaic. XIV. Kalahari-Highveld regional transition zone. XV. Tongaland-Pondoland regional mosaic. XVI. Sahel regional transition zone. XVII. Sahara regional transition zone. XVIII. Mediterranean/Sahara regional transition zone. XIX. East Malagasy regional centre of endemism. XX. West Malagasy regional centre of endemism



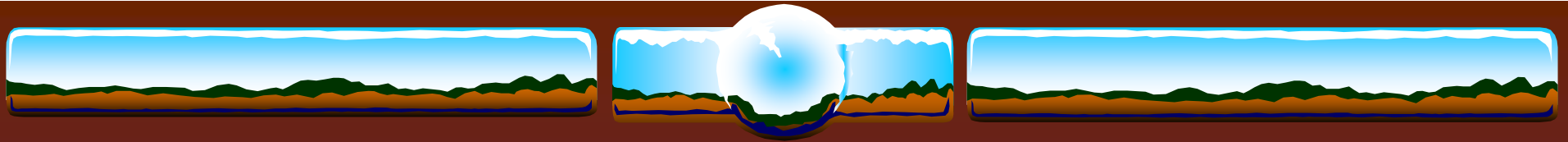






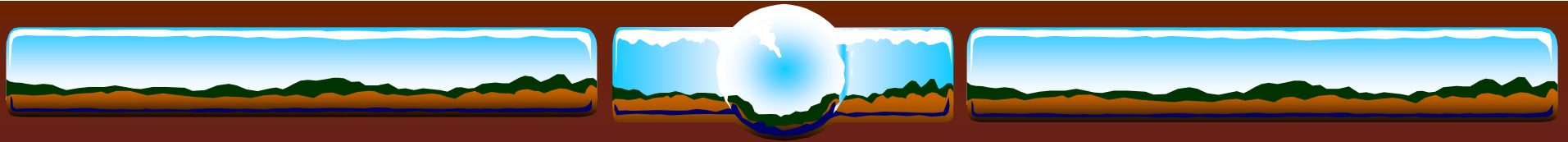
Diversity of Ethiopian Flora & Fauna

<u>GROUP</u>	<u>No.of Species Endemics</u>	
Higher plants	6000	600
Mammals	277	29/31
Birds	861	16
Reptiles	201	10
Amphibians	633	4
Fresh water fish	180	37-57
Insects	Poorly Known	



4. MILLENNIUM DEVELOPMENT GOALS

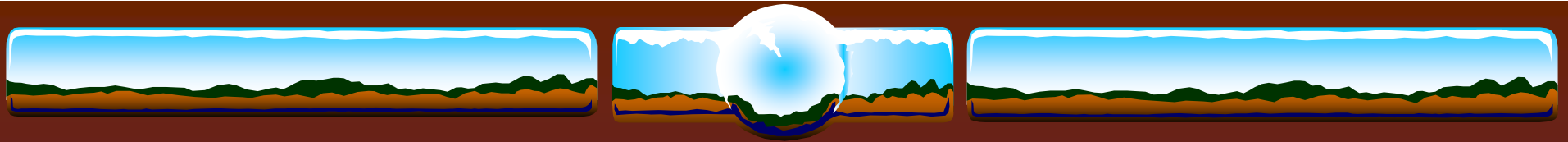
- ❖ Goal 1: **Eradicate extreme poverty and hunger**
- ❖ Goal 2: Achieve universal primary education
- ❖ Goal 3: **Promote gender equality and empower women**
- ❖ Goal 4: Reduce child mortality
- ❖ Goal 5: Improve maternal health
- ❖ Goal 6: Combat HIV/AIDS, malaria and other diseases
- ❖ Goal 7: **Ensure environmental sustainability**
- ❖ Goal 8: **Develop a Global Partnership for Development**



EXAMPLES:

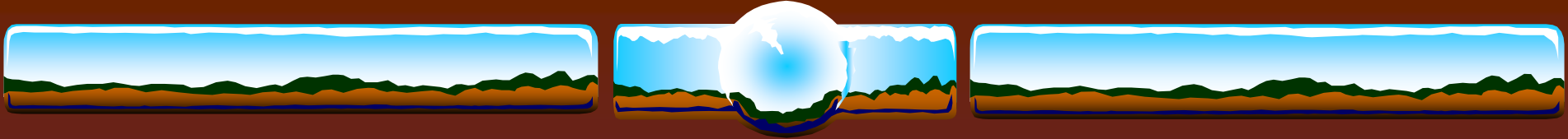
FOREST AND WOODLAND RESOURCES

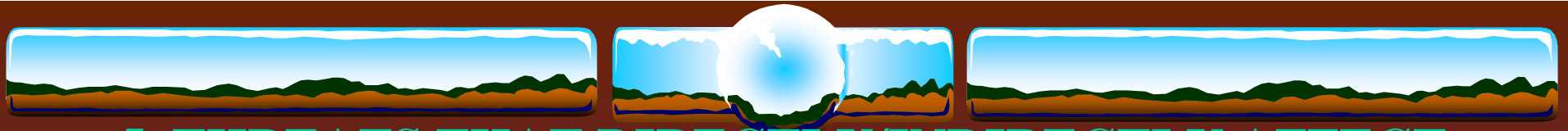
- ❖ The Ethiopian forests and woodlands are depositories and gene pools for several domesticated and/or important wild plants and wild relatives of domesticated plants. For example Coffee (*Coffea arabica*) is found in the wild in the moist evergreen montane forests.
- ❖ Forests in addition to helping the complex interactions they make with other organisms to build up and/or maintain the complex fabric of biodiversity, but also prevent erosion and for affecting the climate in a positive way.



FIELD CROP RESOURCES

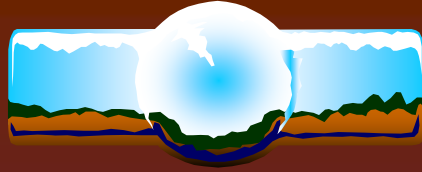
- ❖ Ethiopia is one of the main centres of origin/diversity for several cultivated crops and their wild weedy relatives.
- ❖ Ethiopia is one of the twelve Vavilov Centers of crop diversity.
- ❖ Ethiopia is considered as the primary gene center for field crops such as Noug (*Guizotia abyssinica*), Teff (*Eragrostis tef*), and Ethiopian mustard (*Brassica carinata*). Introduced field crops have developed wide ranges of genetic diversity under local ecological conditions and agricultural practices.
- ❖ The indigenous landraces of various crop plants species, their wild relatives, and the wild and weedy species are all highly prized for their potential value as sources of important variations for crop improvement programmes. Among the most important traits that are believed to exist in these landraces are, disease and pest resistance, nutritional quality, resistance to drought and other stress.

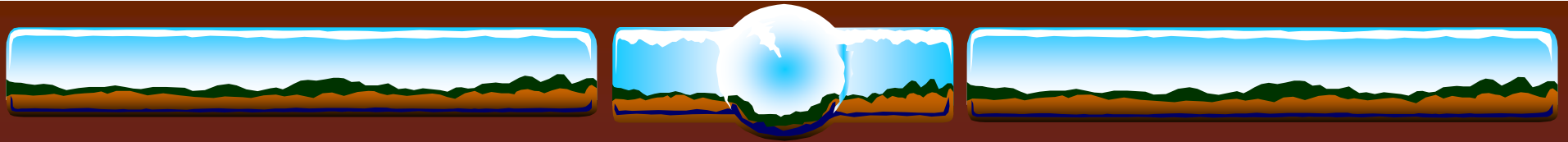




5. THREATS THAT DIRECTLY/INDIRECTLY AFFECT BIODIVERSITY

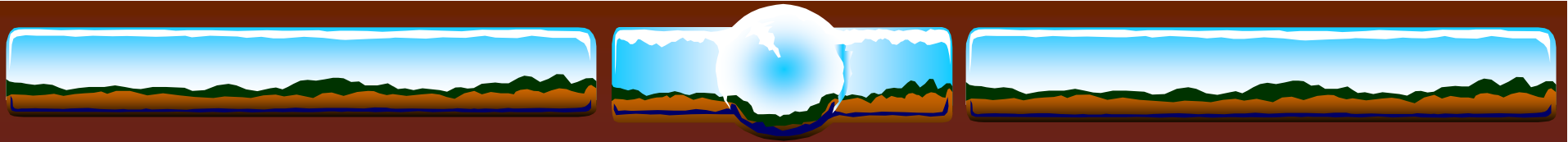
- ❖ The rapid increase in human population that puts pressure to the natural resources
- ❖ Ethiopia's population grew from about 30 million in the 1960's to over 67 million by 2003 and is expected to reach 130 million by 2020.
- ❖ In the year 2002, out of a total of 67.22 million, 56.9 million (84.7%) were rural and 10.3 million (15.3%) were urban dwellers i.e. **ca 90% is rural**.
- ❖ As a consequence of the increased population pressure, areas that were previously under vegetation cover are being cleared for cultivation
- ❖ The pressure on land is so great that steep slopes that were not previously cultivated are now being cultivated
- ❖ The result being more erosion and **degradation**; the top fertile soil being continuously lost.





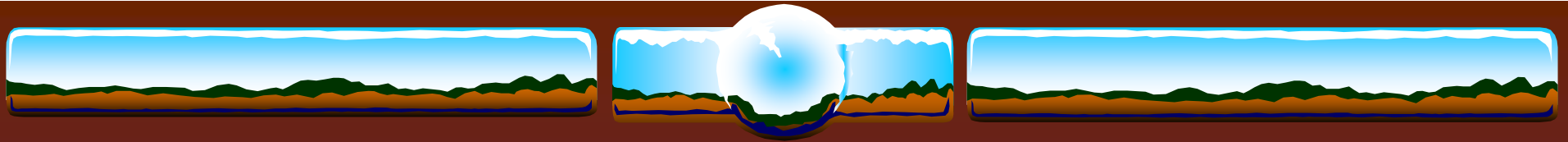
Threats contd ●

- ❖ In the last decades the environment is changing. areas that rarely were flooded are being flooded. areas that previously had adequate moisture failed to have enough moisture to grow crops. This of course is associated with the global climate change, to which Ethiopia and the rest of Africa are succumbing, although Africa has little to do in starting or exacerbating the climate changes.
- ❖ There is also:
 - ❖ An increase in desertification in arid and semi-arid areas;
 - ❖ Reduced agricultural production.
- ❖ In these changing climates what kind of crops do Ethiopian need to grow, those indigenous crops adapted to the environment or new monoculture crops that require fertilizer (chemical input) which are also becoming very expensive beyond the reach of framers.



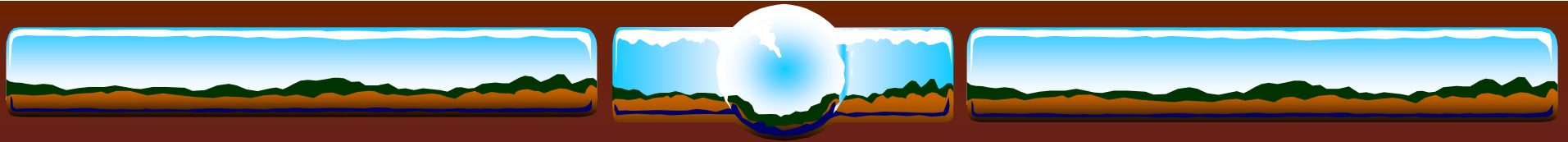
6. INSTITUTIONS & CONVENTIONS

- ❖ Institute of Biodiversity Conservation (**IBC**) has been established to take care of issues related with biodiversity and its conservation – CBD
- ❖ The Environmental Protection Agency was established in to take care of the environment – UNFCCC/UNCCD
- ❖ The Meteorology Agency was established to collect and synthesize data on climate and climate change



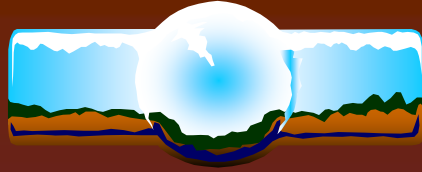
7. ?????? QUESTIONS

- ❖ Do we know the current biodiversity (nationally)? Is there any need for capacity building to document the national biodiversity?
- ❖ What were the reasons that Ethiopian/African Farmers were better off in the 1960's than they are to day?
- ❖ What do the national institutions and UN Conventions (CBD, CCD, FCC, RAMSAR) do to help the poor farmers in Ethiopia/Africa so that they have FOOD on the table to their family, and their life is not continuously affected by environmental degradation and climate change?
- ❖ Do the concerned national institutions and the UN Conventions work in harmony and create synergies to improve the life of poor farmers in REALITY in addition to plans/agreements on paper?
- ❖ Do we have national laws (and international understanding) that allow farmers and communities to manage their natural resources?
- ❖ Do we have national laws (and international understanding) that allow farmers and communities to use and maintain their indigenous germplasm without interventions/pressures from national authorities and international financial bodies?



8. The way forward to achieve the NBSAPs in Ethiopia

- ❖ Documenting the national biodiversity – focus on GTI
- ❖ The problem of poor farmers and local communities becoming the central theme of the NBSAPs and related conventions
- ❖ Policies that allow communities to have control over their resources including the management
- ❖ Understanding CBD, CCD, FCC, RAMSAR etc. cannot work in isolation, but to work together, in practice, not only during CBD and other similar meetings
- ❖ harmonization of activities by national institutions (for example IBC, EPA, MA, etc. in Ethiopia) on climate and other environmental issues
- ❖ Reaching out to other national institutions such as universities, research centers which at times hold more information than the institutions mandated to take care of the biodiversity, environment, etc. this does not have to be for meetings but as a continuous process.



THANK YOU