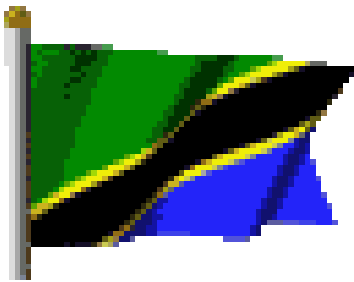


IMPACT OF CLIMATE CHANGE IN THE KILIMANJARO REGION OF TANZANIA



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(TAWIRI)**

Head Office, Arusha, Tanzania

A WARM WELCOME TO TANZANIA



7/16/2012

Map of Africa showing the location of Tanzania



CLIMATE CHANGE TRENDS IN TANZANIA

- **Tanzania, like other countries is impacted by climate change and climate variability**
- **Floods and drought are the two major extreme climate events in Tanzania**
- **In recent years (2009-2011), heavy rains accompanied with strong winds have left thousands of people displaced and without food in Muleba, Kilosa, Mpwapwa, Kongwa, Kilombero, Same and Dar es Salaam**
- **Heavy rains and floods have resulted into loss of life, livestock and crops; an increase in vector and water-borne diseases; food shortages, internal displacement, and increased disease transmissions, damage to properties, destruction of the environment and economy, etc**

IMPACTS OF CLIMATE CHANGE: FLOODS

- **The 3 weeks of above normal rainfall busted Mkondoa river causing floods in 7 wards in Kilosa in 2010**
- **50,000 people were affected, 23,980 residents evacuated, 10,000 homeless, water & sanitation system destroyed**
- **10,294 accommodated in 839 makeshift huts in Kilosa, Mazulia and Kimamba camps**
- **In the same period, Mpwapwa and Kongwa districts experiences floods, affecting over 19,000 persons**
- **439 people hosted by communities in Kongwa and Mpwapwa districts**
- **5,100 Ha of crops (maize, rice, bananas, cassava, sesame, etc) destroyed and a agricultural land covered with soil, mud, sand, etc**
- **133 shallow and 4 deep wells destroyed, affecting 32,750 users**
- **3,850 households in total were affected in the three districts**



CLIMATE CHANGE TRENDS IN TANZANIA

- **In December 2011, the capital city of Dar es Salaam experienced the heaviest rains since 1954, causing floods in most of its parts**
- **The rainfall reached 156-260 mm per day, the highest per day since 1954**
- **The floods resulted into loss of about 40 people**
- **Other regions affected were Mbeya, Kilimanjaro and Dodoma**
- **Mwanza was faced by floods in Nov 2011, causing Mwanza airport to be closed for more than 6 hours**
- **Floods occurred again in Dar es Salaam in March 2012 affecting several areas of the City**





IMPACTS OF CLIMATE CHANGE: DROUGHTS

- **In six droughts of 1980-2008, 7.96 million people were affected, losing life, livestock, crops, etc**
- **>1 million people in Tanzania were food insecure following droughts from 2008-2012, and there has been crippling drought since 2008 in various areas**
- **The major impacts of drought include famine, loss of life, crop failure, lower water availability and quality, electricity rationing, etc**
- **Droughts have severely compromised food security in the country, livestock deaths have reached thousands**
- **Food supply/support to communities has been an annual event (Mwanga, Mbulu, Kiteto, Simanjiro, Longido, etc)**

CLIMATE CHANGE TRENDS IN TANZANIA

- **In October 2009, northern Tanzania lost between 3,000 and 4,000 cattle in a decade's worst drought**
- **Similarly, the severe drought of 2007/2008 which was followed by abnormal heavy rainfalls resulted in an outbreak of Rift Valley Fever epidemic in Tanzania**
- **Although the impacts of climate change are global, the most vulnerable are the poor and marginalized people from developing countries who depend most directly on their ecosystems for livelihood; these are the same people who have the least capacity to mitigate and adapt to climate change (WHO, 2008)**

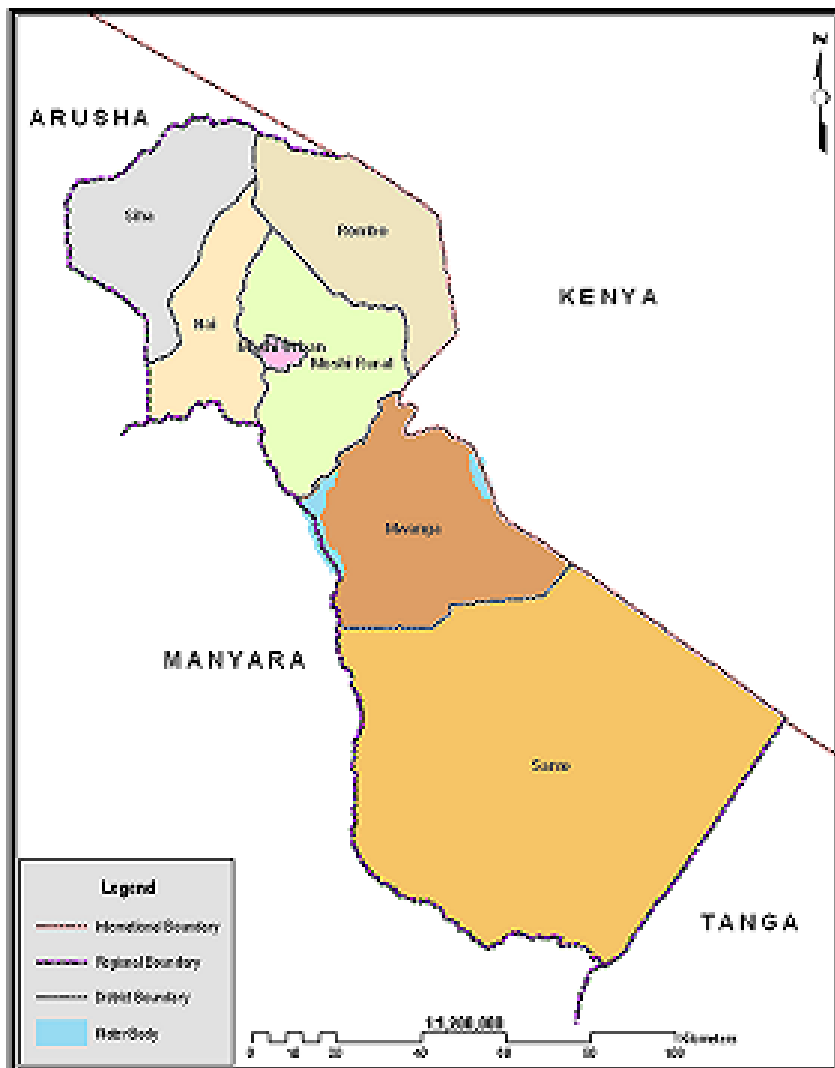
CLIMATE CHANGE TRENDS IN TANZANIA

- **During the past three to five decades, there has been a steady increase in temperature, adversely affecting almost all sectors of the economy in Tanzania**
- **Several droughts have been recurrent while water levels in Lakes Victoria, Tanganyika, Rukwa, Manyara and many other small lakes have dropped significantly**
- **Rise in sea levels has been experienced, with Islands of Maziwe (off Pangani) and Fungu la Nyani (on the Rufiji River estuary) been already submerged due to rise in sea level**
- **It is predicted that islands of Zanzibar and Mafia are likely to be submerged by 2100 following rise in sea level caused by melting of polar ice (Urama & Ozor, 2010)**

INTRODUCTION TO THE KILIMANJARO REGION

- **The Kilimanjaro region is located in northern eastern part of Tanzania**
- **Its name is derived from the presence of the highest Mountain in Africa, the Kilimanjaro**
- **Mt. Kilimanjaro is a free standing tropical equatorial mountain with the highest point at 5,895 metres (19,341 ft) asl**
- **Mount Kilimanjaro has unique ecosystem supporting various biodiversity and is also important for livelihoods of the communities in the region**

KILIMANJARO



Area: 13,209 km²

Population: 1,381,149

Density: 104 people per km²

Districts: 6

Agricultural land: 48.7%

Income: Tshs 755,037 vs
627,787



INTRODUCTION TO MT. KILIMANJARO

- **Over centuries, like many other higher tropical mountains, its top has been known for its vast coverage of glacier, which has attracted people for tourism**
- **When going on top of the mountain, you pass through various zones as follows:**
 - **Dense montane rain forest (1890-2340m)**
 - **Sparse montane rain forest (2760m)**
 - **Transitional zone between rainforest and subalpine heathland (3170m)**
 - **Subalpine heathland (3630m)**
 - **Alpine with limited vegetation (4050-4570m)**
 - **Bare rock (4970-5470m)**
 - **Ice field (5800-5895m)**

TEMPERATURE AND HUMIDITY ACROSS ALTITUDINAL PROFILES

- **The overall mean temperatures varies along the altitudinal vertical profiles from 11.5°C (range 8.4-14.8°C) in the montane forests to -6.2°C (range -9.4 to -2.0°C) in the ice fields**
- **The relative humidity varies along the altitudinal vertical profiles from 97.7% in the montane forests to 54.4% at the ice fields**

ECOSYSTEM SERVICES FROM MT. KILIMANJARO

- **The vast base of the mountain is covered by a tropical ecosystem**
- **The tropical forest ecosystem is the most important part of the ecosystem as it provides direct support to livelihoods of communities in the region**
- **It is the source of fresh water down to communities for domestic use, agriculture and hydropower generation**
- **The forest ecosystem is essential for filtering and storing water and for collecting cloud water**

OBSERVED CHANGES ON MT. KILIMANJARO

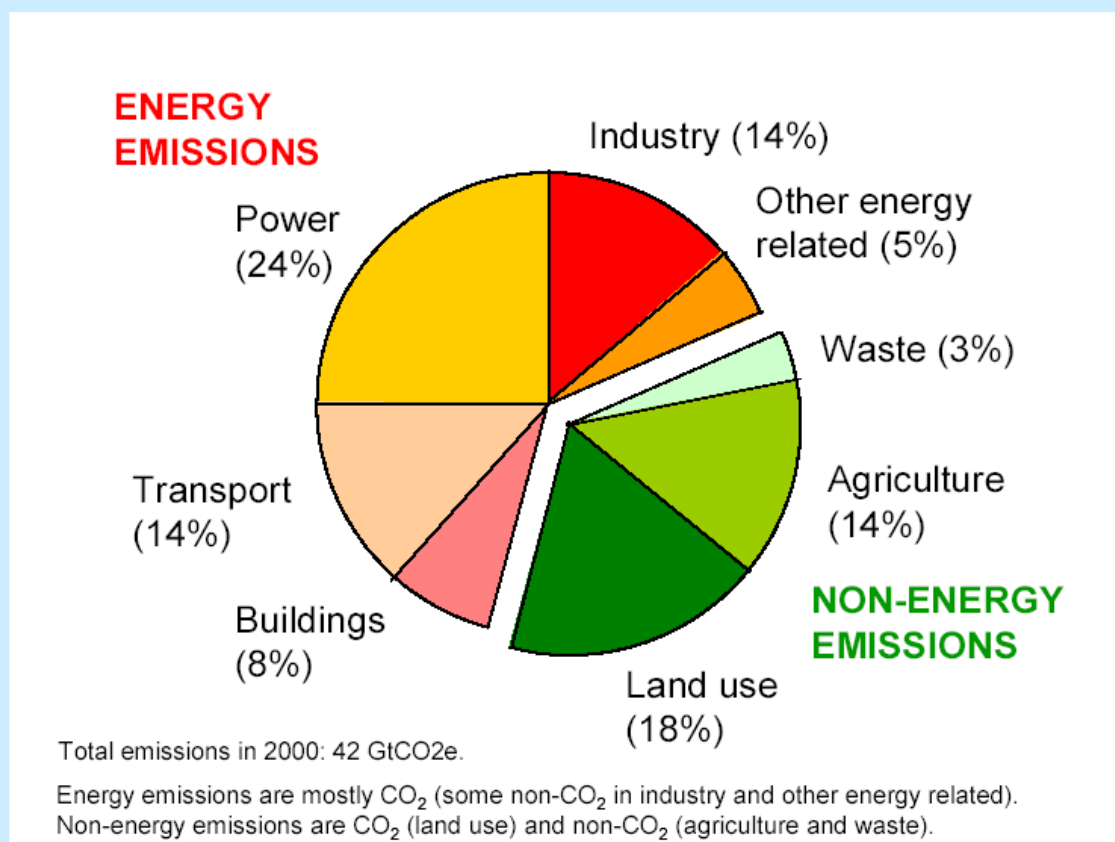
- **The ice cap plays an important part of the region both in terms of stabilizing the temperature of the region and for operating as a reservoir for the slow flow of water reaching the forest**
- **However, it has been observed that various changes are taking place, denoting the impacts of climate changes on the mountain ecosystem, and therefore in the region**
- **Changes which have been observed are reduction of ice cap and reported glacier vertical retreat (reduced thickness of glaciers)**
- **The snow-caped mountain is losing its glacial top at an astounding rate; and it is expected that within the next 10-20 years, the summit will be bare (Thompson et al., 2007)**

CLIMATE CHANGE: CAUSES AND OBSERVATIONS

- **Reduction of ice cap on Mt Kilimanjaro, glacier retreat and other long-term observations confirm that our climate is now changing at a rapid rate**
- **The causes of climate change are mainly human activities, specifically increases in anthropogenic greenhouse gas which is disrupting the climate system**
- **Most people now agree that human-induced climate change poses a serious threat to society and the Earth's ecosystems**

What is responsible for elevated CO₂

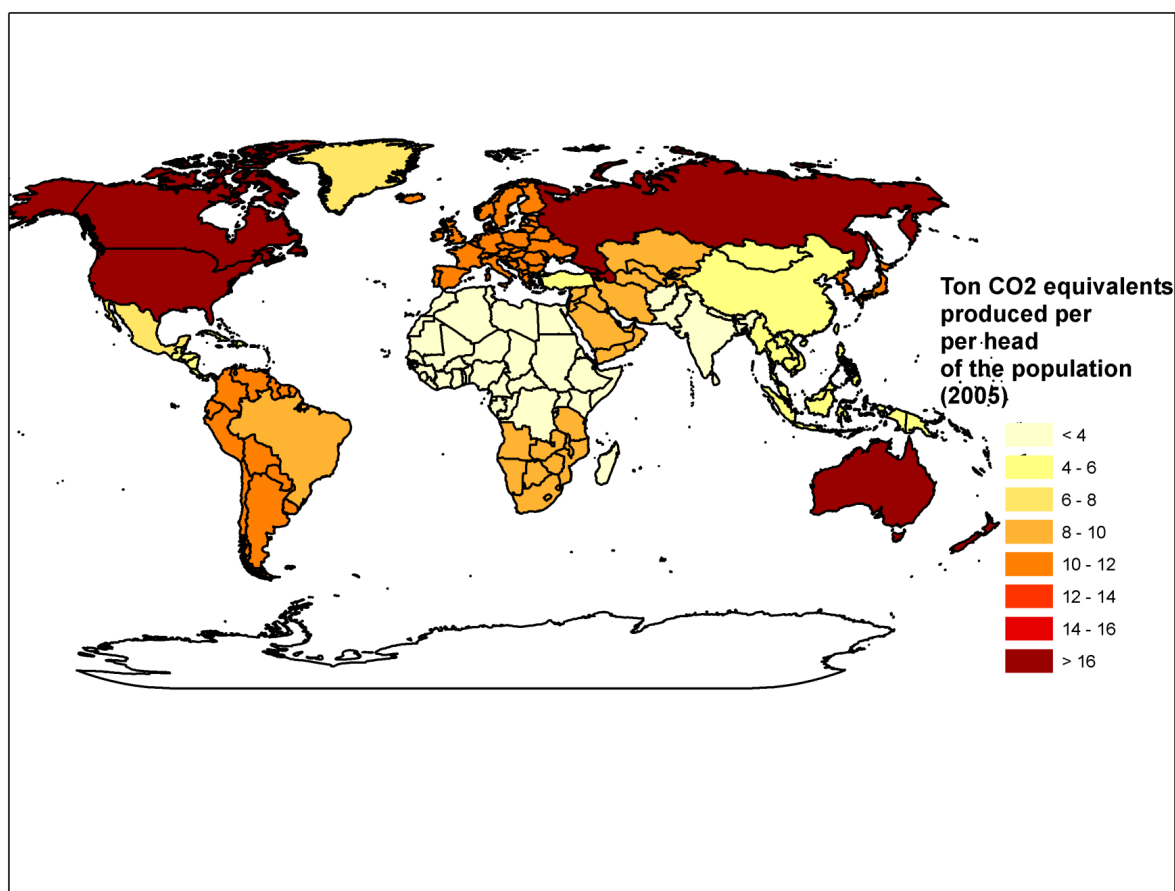
Figure 1 Greenhouse-gas emissions in 2000, by source



Source: Prepared by Stern Review, from data drawn from World Resources Institute Climate Analysis Indicators Tool (CAIT) on-line database version 3.0.

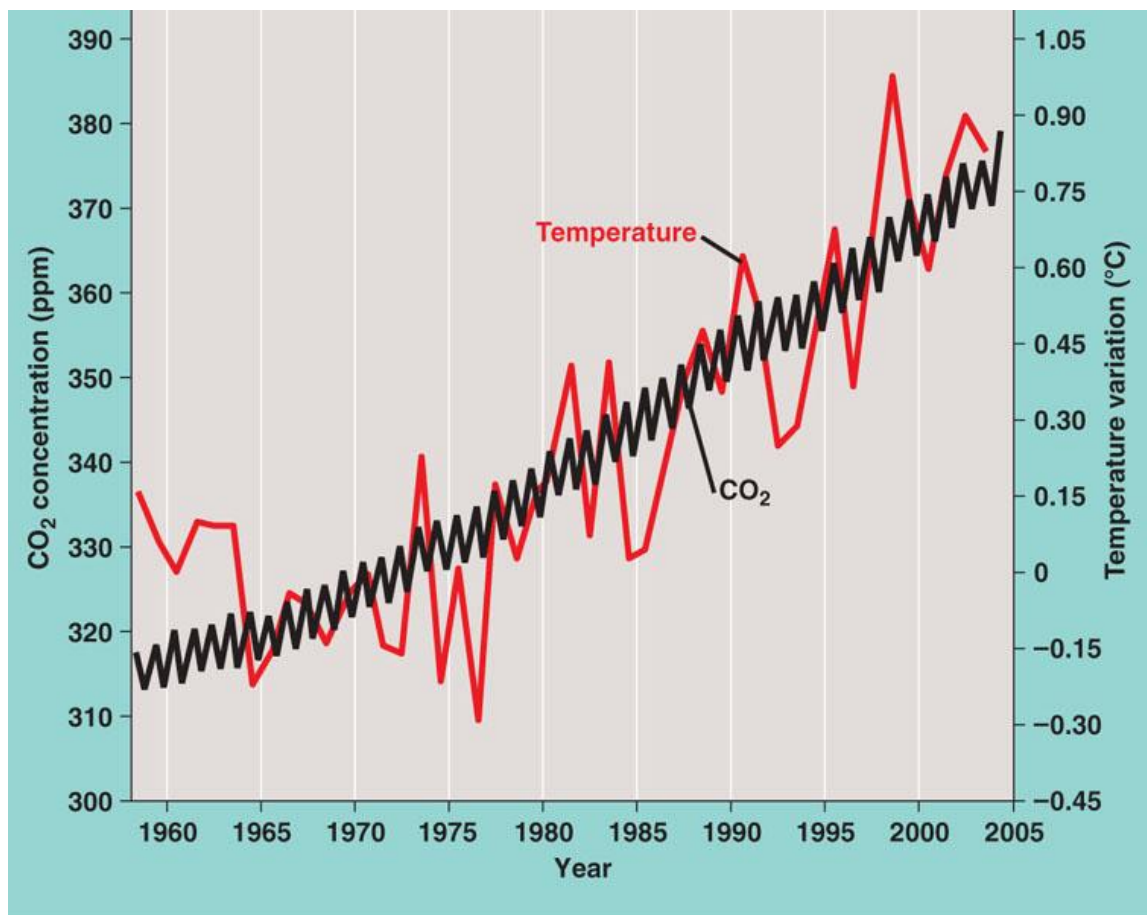
Who is responsible for elevated CO₂

CO₂ emissions per person 2005



How is the global climate changing until now?

➔ **Strong increase in CO₂ and temperature for the last 50 years**



Campbell & Reece 2005

CLIMATE CHANGE AND VARIABILITY IN KILIMANJARO REGION

The Kilimanjaro region experiences:-

- Retreat of Mount Kilimanjaro glaciers
- Increase in frequency and intensity of drought and flood events
- Temperature increasing trends has been noted at some stations
- Disappearance of Lake Jipe in Same District

MOUNT KILIMANJARO GLACIERS

- **The glaciers have been present at the summit for at least 11,700 years (Thompson *et al.*, 2002)**
- **Kilimanjaro glaciers began shrinking towards the end of the 19th century**
- **The total ice-covered area dropped nearly by 90% from approximately 20km² to 2.5km² in 2000**
- **Over the next 9 years, glacier area shrank by another ~30%, the glaciers are also getting thinner**
- **Shrinkage will certainly continue, and Mt. Kilimanjaro could be without glaciers within several decades (2025??)**

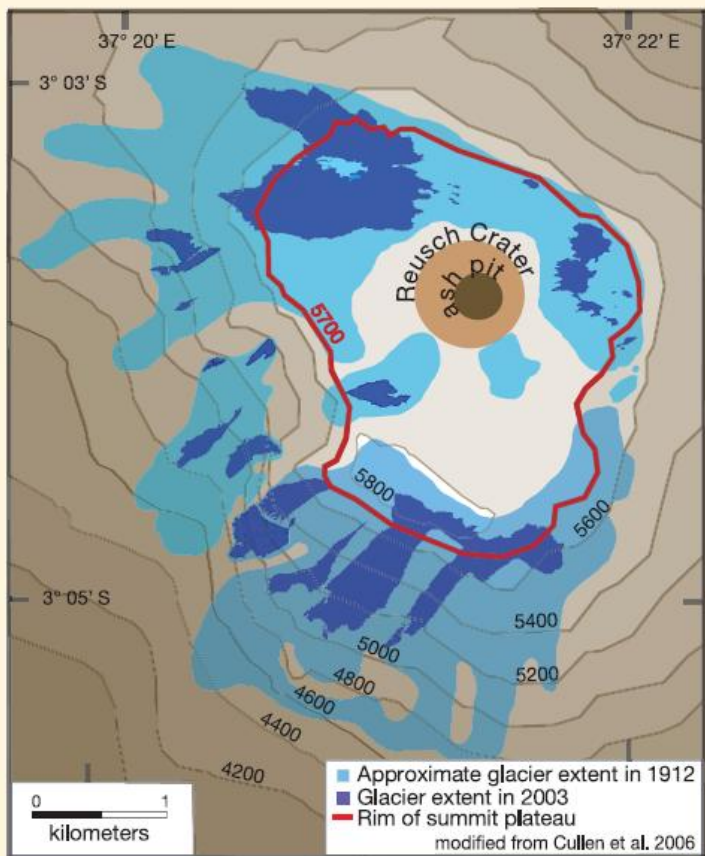
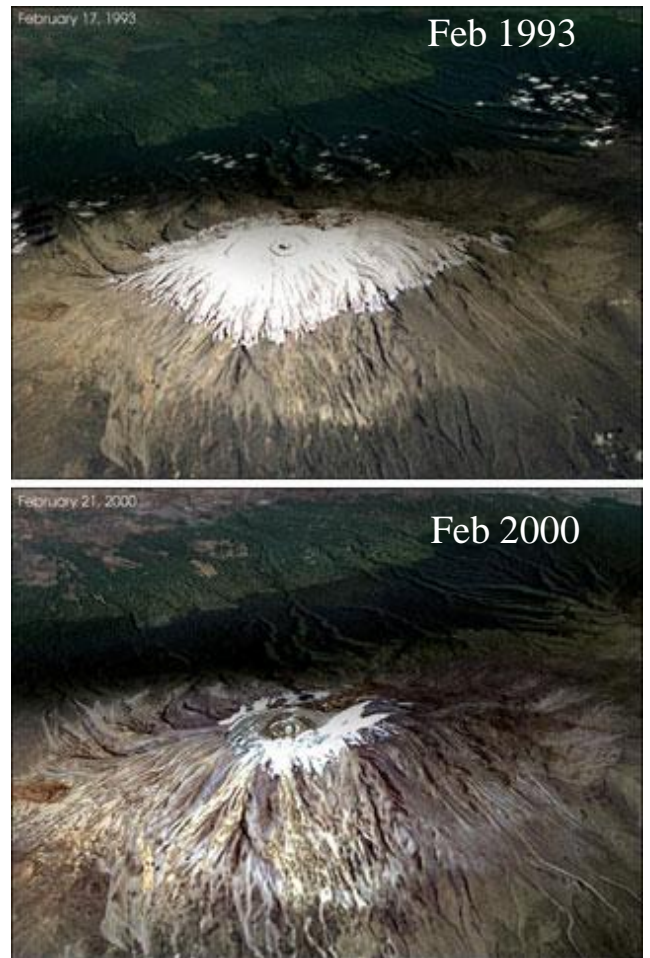


Figure 9.2. Decrease in surface area of Mt. Kilimanjaro glaciers from 1912 to 2003 (modified from Cullen et al., 2006).

Source: IPCC 4th assessment report, 2007



Source: NASA

CAUSES OF DECREASING GLACIERS

- Several findings have been presented to explain the causes, including global warming, solar radiation intensity, inadequate precipitation, melting and sublimation
- Continuing research has led to *near-universal* agreement that decreasing precipitation is causing the glaciers to shrink/retreat
- If Kilimanjaro glaciers are shrinking due to decreasing precipitation, what is the role of global warming?
 - *Precipitation changes are linked to changes in the Indian Ocean temperature patters (Hardy, unpublished)*
 - *Warming of the Indian ocean is primarily linked to human activities, particularly green house gases (Co₂, Methane) and aerosol emissions, resulting in decreasing rainfall in East Africa (Funk, 2011)*

INCREASED FREQUENCY OF DROUGHTS

- **Short rains were a complete failure in Kilimanjaro region in 2000, 2005, 2008, 2010, 2011 and 2012**
- **56 districts in 16 regions faced acute food shortage in 2011 in Tanzania**
- **7 districts in 3 regions were severely affected in including Same, Mwanga and Rombo of Kilimanjaro region in 2011**
- **Other districts were Simanjiro, Longido, Kiteto, and Ngorongoro**
- **13,901 food beneficiaries have been in extended drought and 2,760 households needed food for > 2 months**





LIVESTOCK LOSS DUE TO DROUGHTS IN KILIMANJARO

- **Droughts have seriously impacted the pastoral system in Tanzania including Kilimanjaro region**
- **The 2009 drought, the worst in the past 40 years caused pastoralists to lose 70% of their livestock**
- **Arusha region lost 700,000 livestock due to drought spell in the Northern zone from 2009-10**
- **316, 437 cattle, 236,359 goats and 92,640 sheep died in the 7 districts of Arusha**
- **Drought caused death of wildlife in Hai and Longido districts**
- **Drought also caused water scarcity, disappearance of natural springs, drying of pan dams, loss of grass, etc**



LIVESTOCK LOSS DUE TO DROUGHTS IN KILIMANJARO

- **Cash disbursement done targeting female headed house holds**
- **Price of animals went down (thin and sick), movement of animals to Kilosa, Kilindi and Kiteto districts as well as in National Parks**
- **Migration and increasing conflicts(with farmers, rebuilding herds through raiding/rustling)**
- **Only 5% of households have enough food for the whole year**
- **Cattle restoration program is ongoing in various districts through the Government and NGOs**

FLOODS AND LANDSLIDE IN KILIMANJARO REGION

- **In Nov 2011, floods occurred in Same district in Kilimanjaro region**
- **The floods were coupled with a landslide in Goha village at Mamba-Vuta ward which killed 24 people**
- **The Same floods coincided with floods in Dar es Salaam (9 Dec 2011), Arusha, Mwanza (Nov 2011) and Kilombero (2011)**
- **On 3-7 Dec 2011, a landslide also occurred in Usangi in Lambo village and Msangeni Ward, 2 people killed, 4 houses buried,**
- **In Jipe division, 333 Ha of 7 different crops were destroyed (parallel to landslides in Mto wa Mbu and Karatu areas where 1 person died, 1 missing and many injured)**

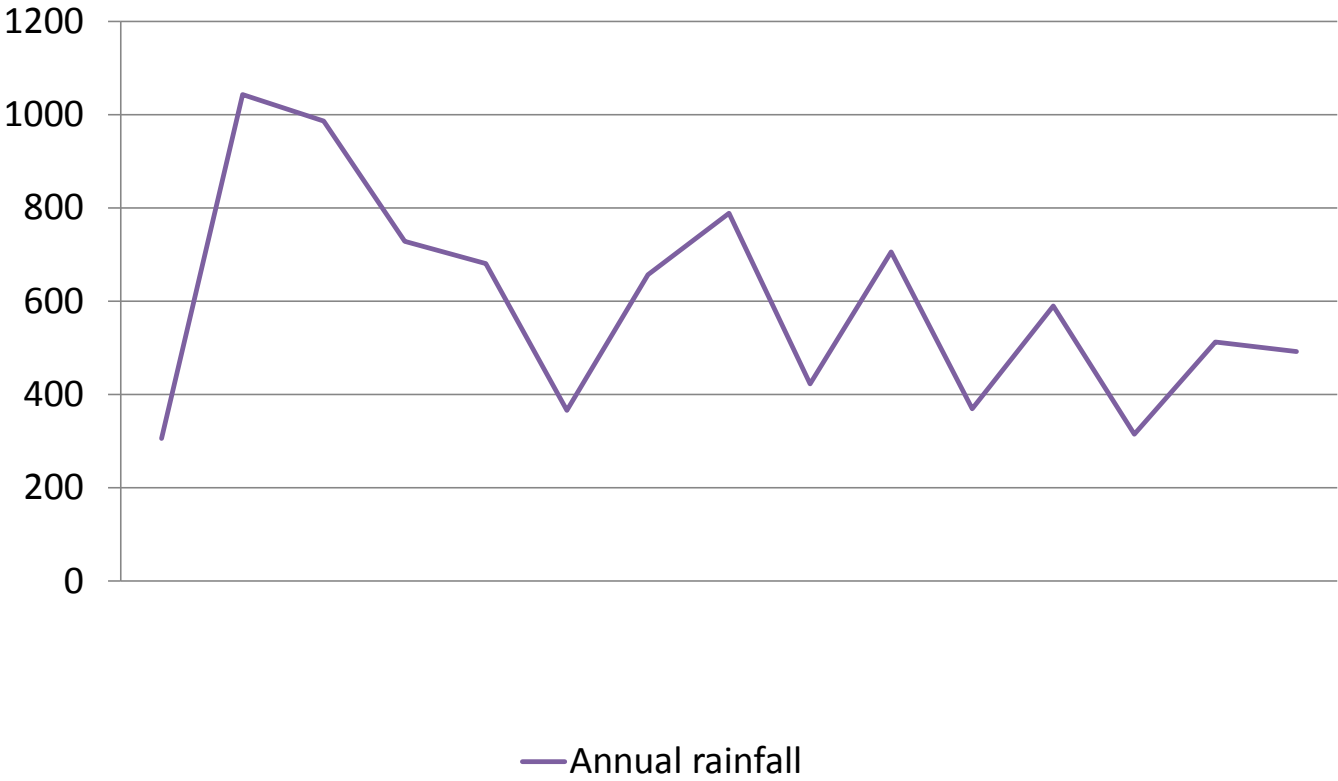


IMPACTS OF CLIMATE CHANGE IN KILIMANJARO

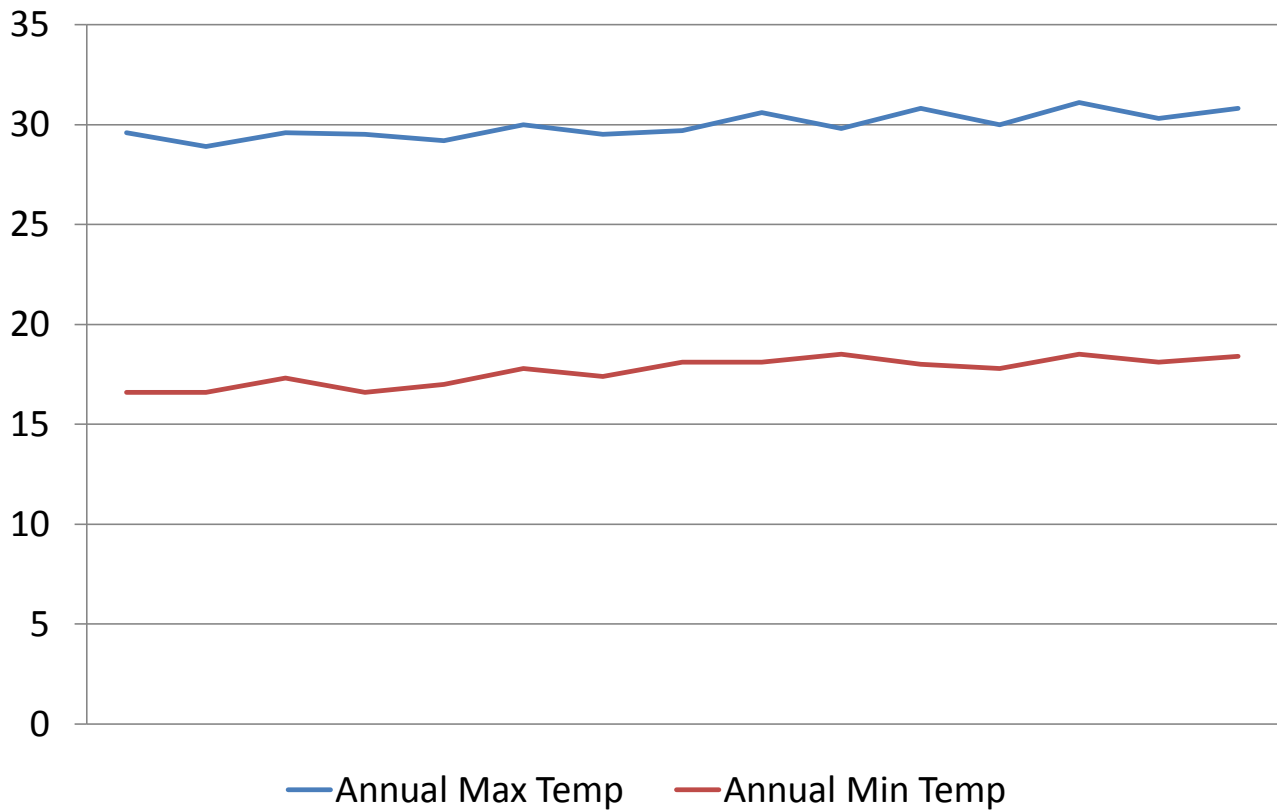
- **Disappearance of Lake Jipe**
- **Inadequate electricity/power black out/electricity rationing**
- **Closure of fishing activities at Nyumba ya Mungu dam**

- **The increased frequency of drought and floods observed in East Africa in the past 20 years is likely to continue as long as global temperatures continue to rise**
- **There is terrible drought and famine currently impacting a large portion of the Horn of Africa and East Africa**
- **The number of rain days per year is declining, but rainfall is becoming heavier when it comes**
- **There are changes in the timing of rainfall, rain comes late than expected**

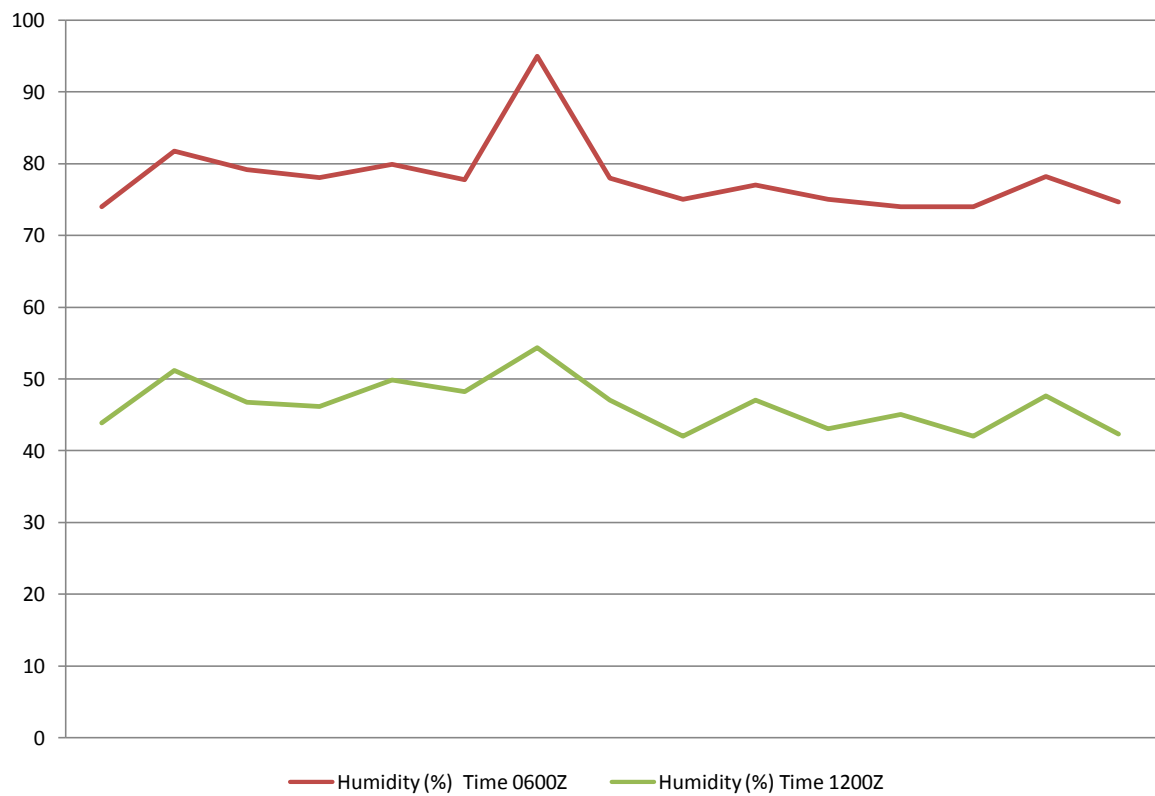
Annual rainfall (mm) -KIA- 1974-2011



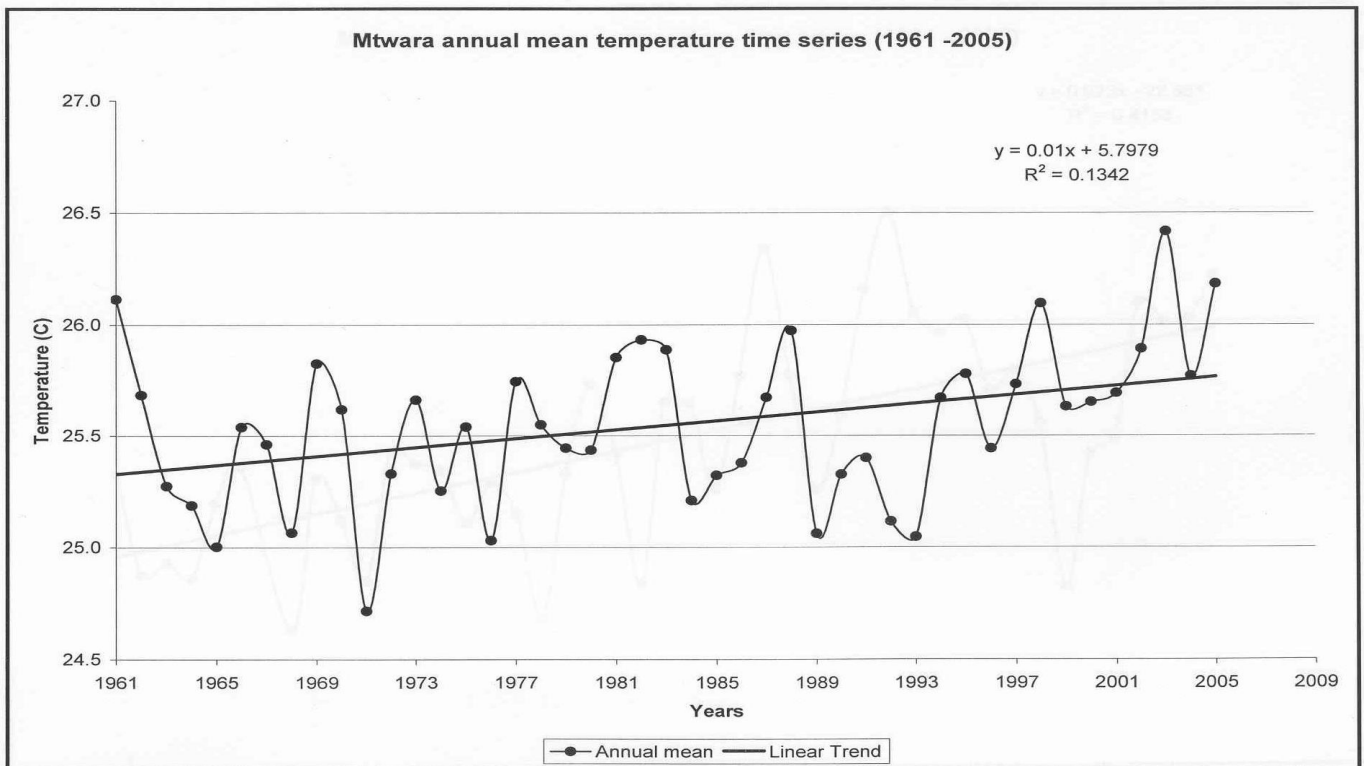
Mean Temperature (°C) -KIA- 1974-2011



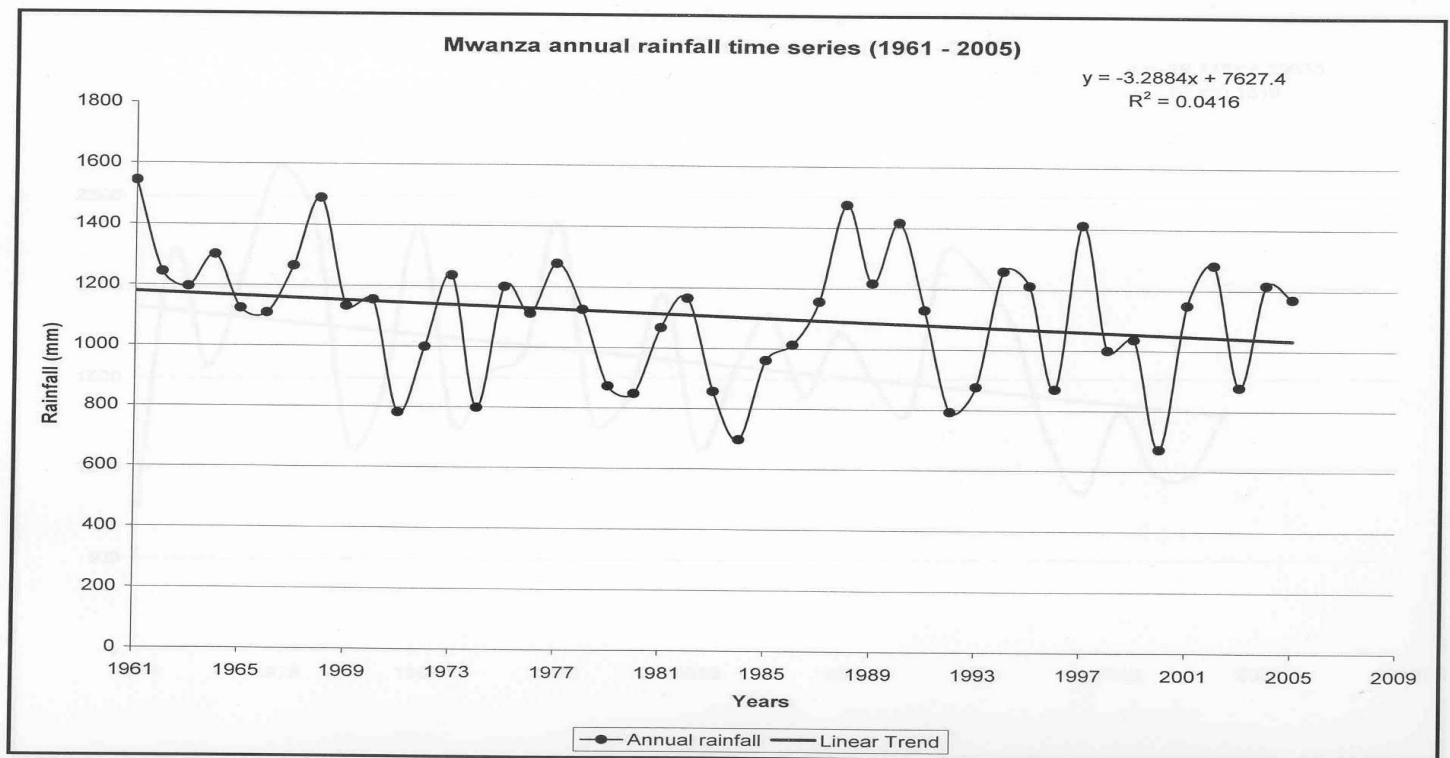
Humidity(%) -KIA- 1974-2011



Mtwara Annual Mean Temp time series



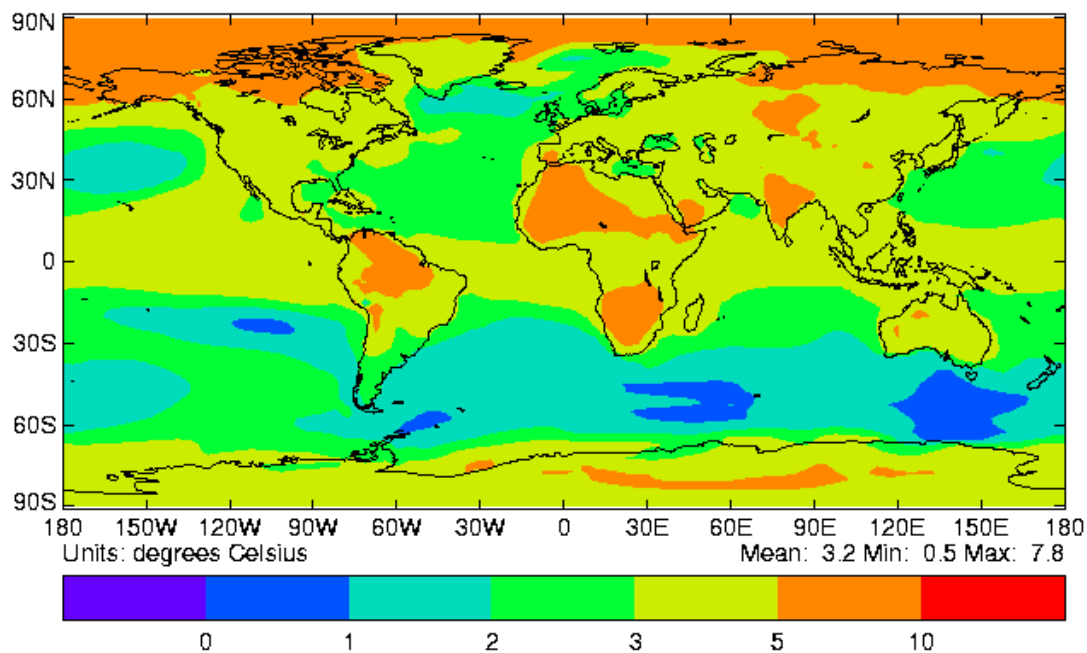
Mwanza Annual Rainfall time series



What are the climate predictions for East Africa?

➔ Temperature increase with 3-5 °C over next 70 yrs

Change in annual average surface air temperature
from 1960–1990 to 2070–2100 from HadCM2 IS92a

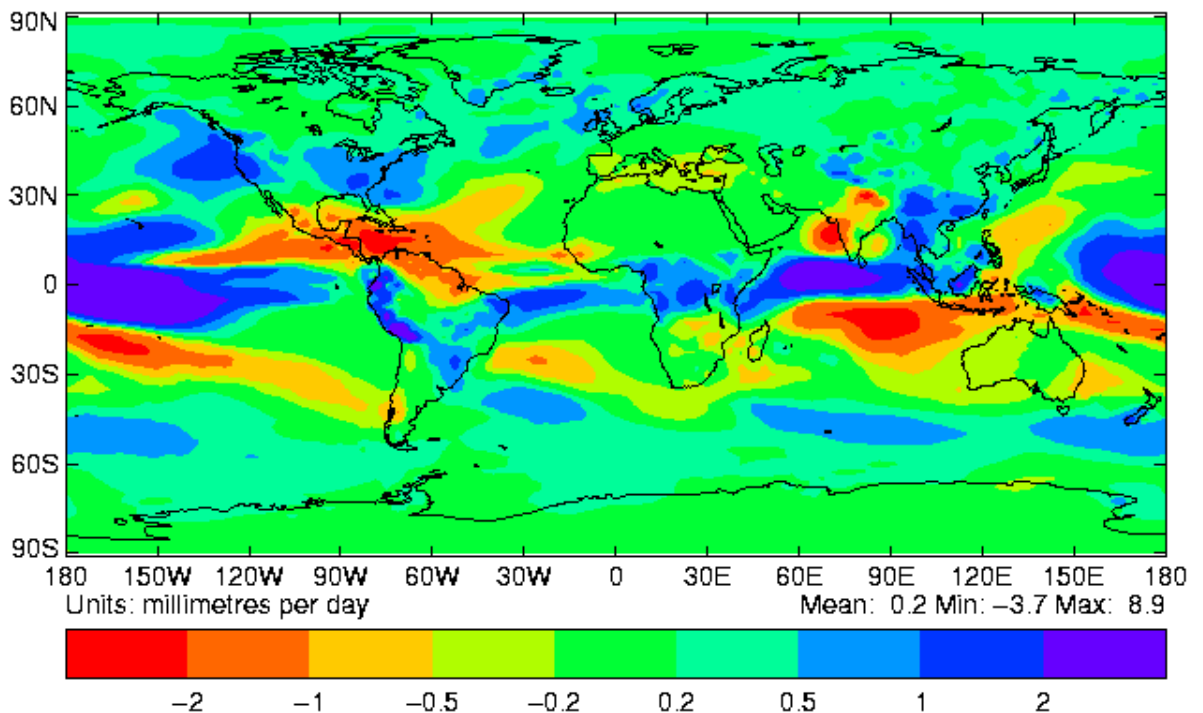


Hadley Centre for Climate Prediction and Research, The Met. Office

What are the climate predictions for East Africa?

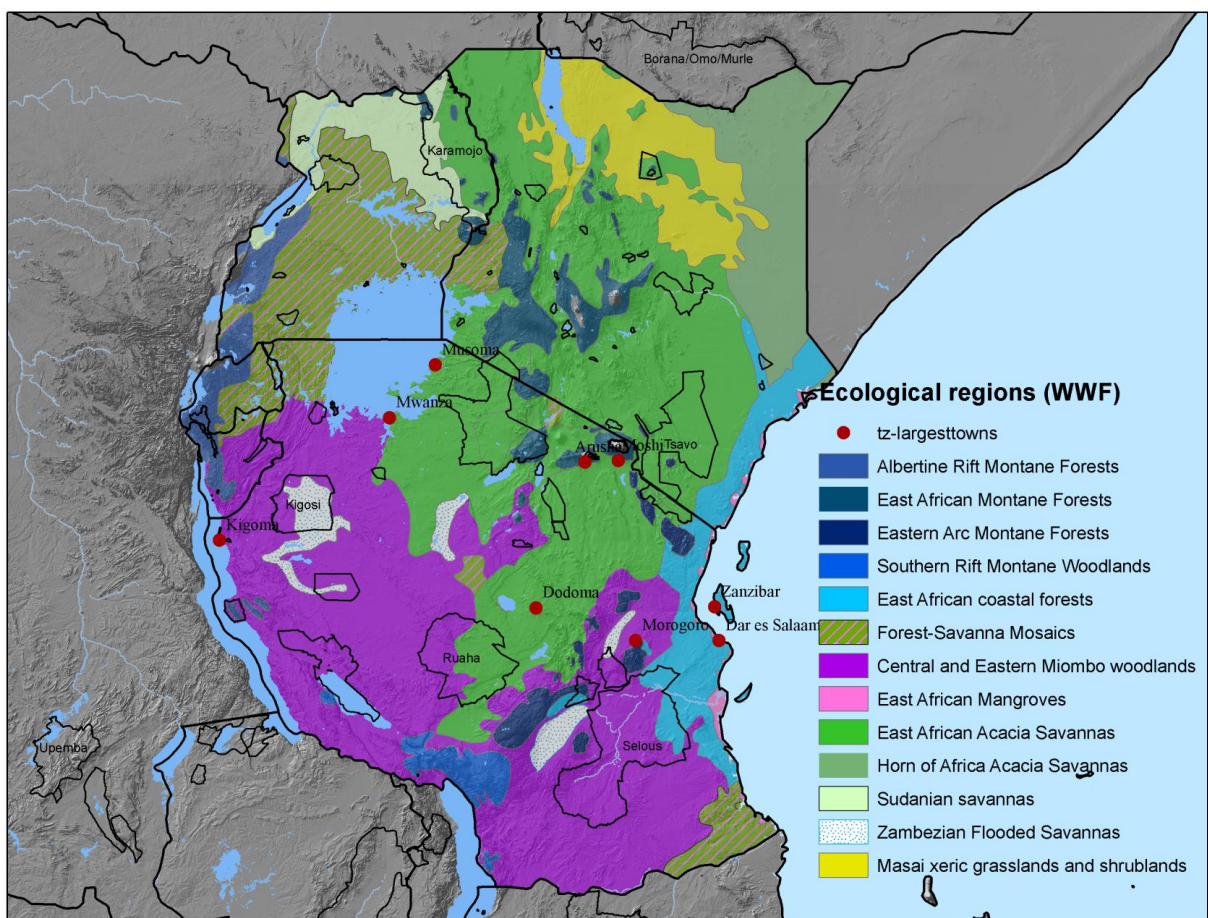
➔ **Rainfall increase with 150 – 300 mm/yr over next 70 yrs
..... but with more extreme dry seasons!**

Change in annual average precipitation
from 1960–1990 to 2070–2100 from HadCM2 IS92a



Hadley Centre for Climate Prediction and Research, The Met. Office

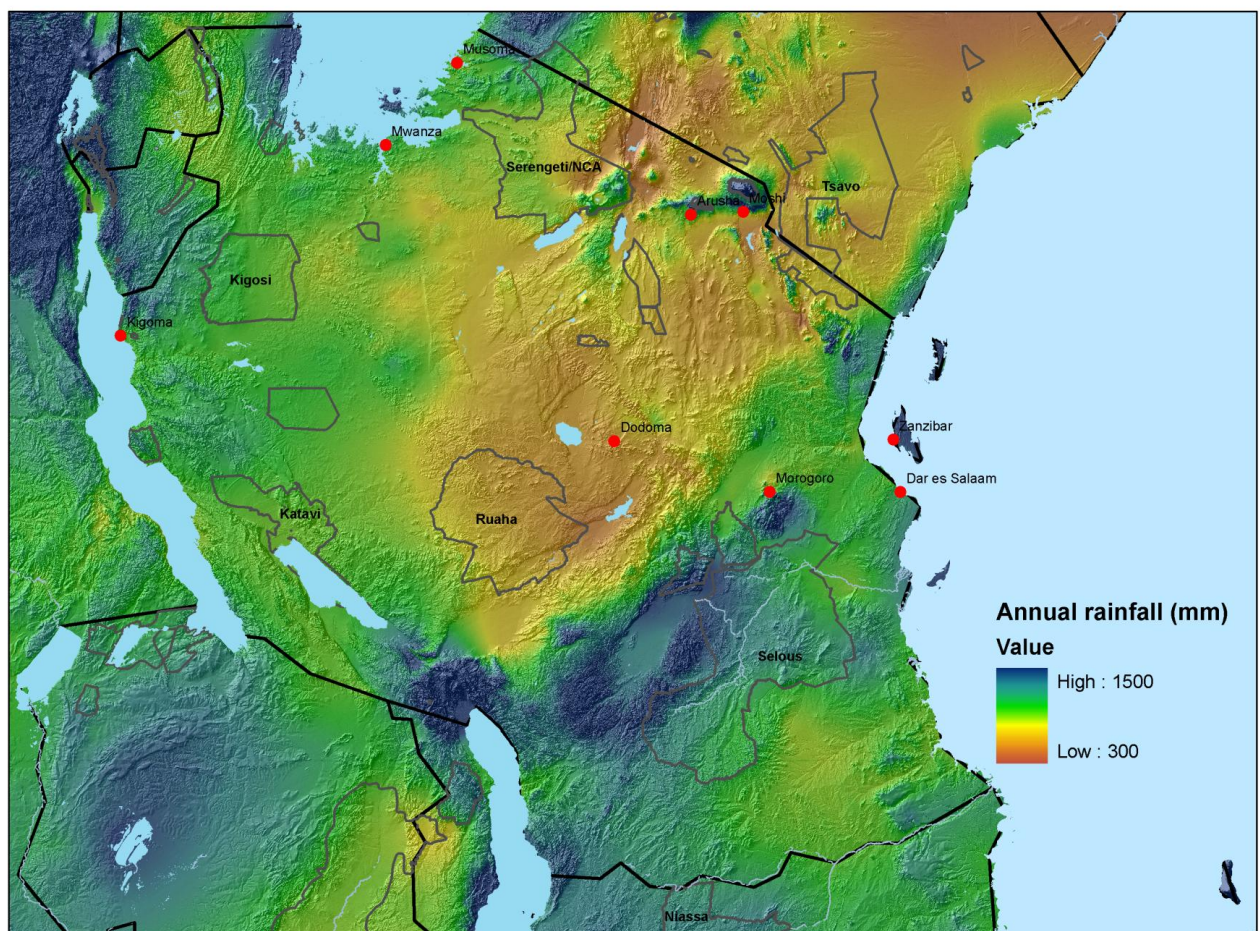
How does the current climate affect natural systems and humans?
→ **Current main ecological zones**



Data: WWF Eco-regions database

Which habitats and ecosystems are mostly threatened?

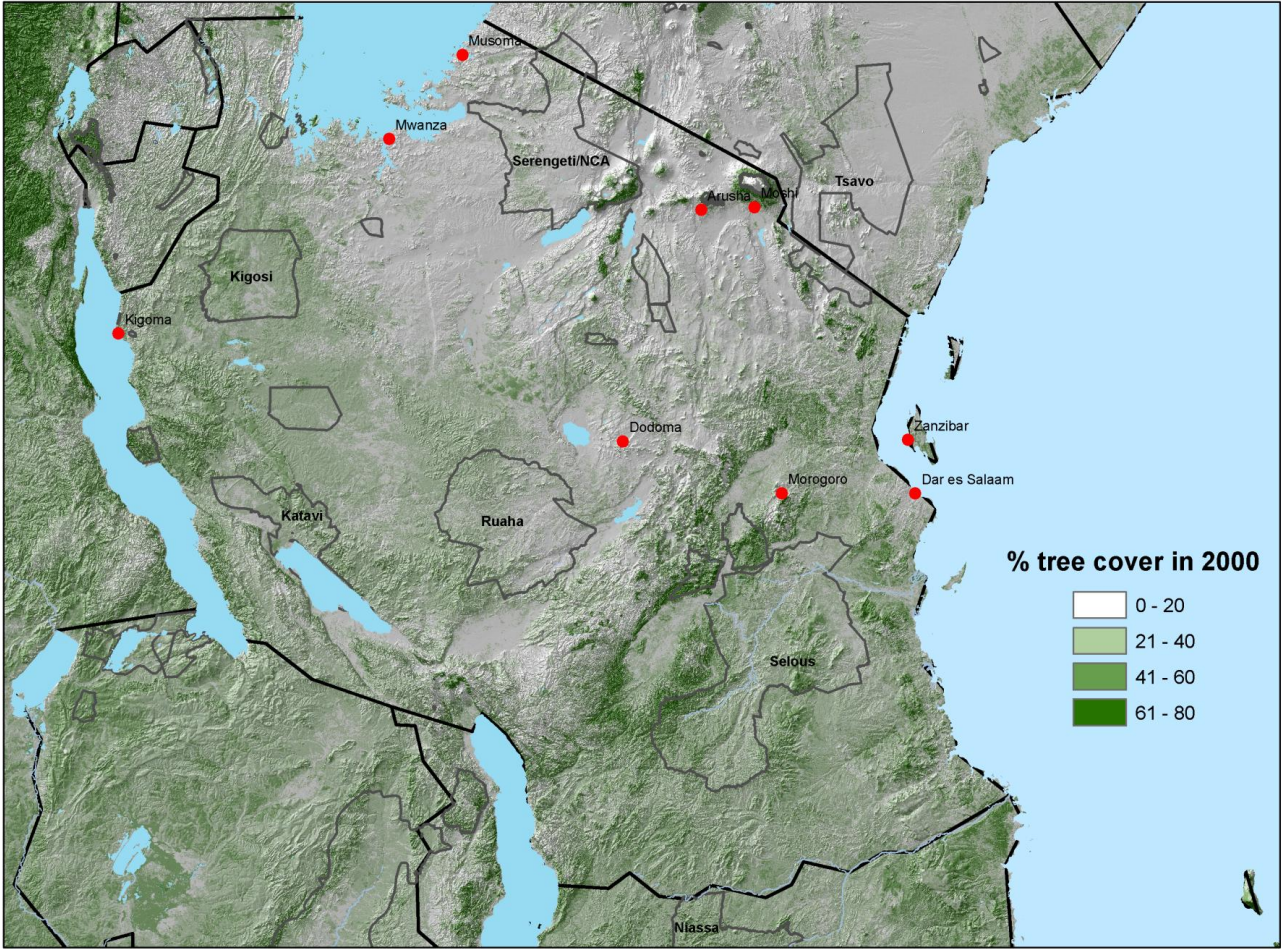
➔ **Long-term rainfall (1960-1990)**



Data: Worldclim database

Which habitats and ecosystems are mostly threatened?

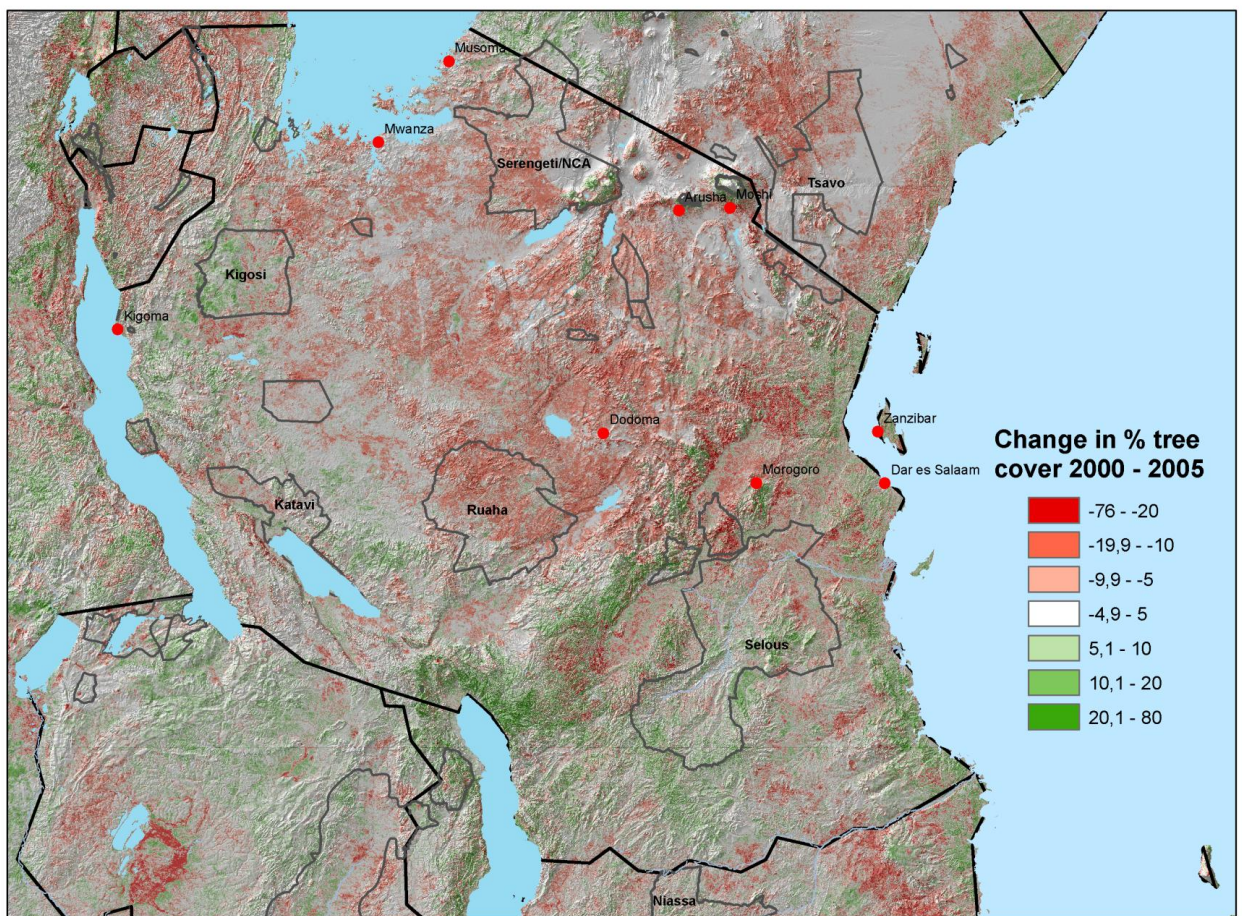
→ **Woody vegetation cover in year 2000**



Data: Hansen et al. 2007 Vegetation Continuous Fields Collection 4 / GLCF

Which habitats and ecosystems are mostly threatened?

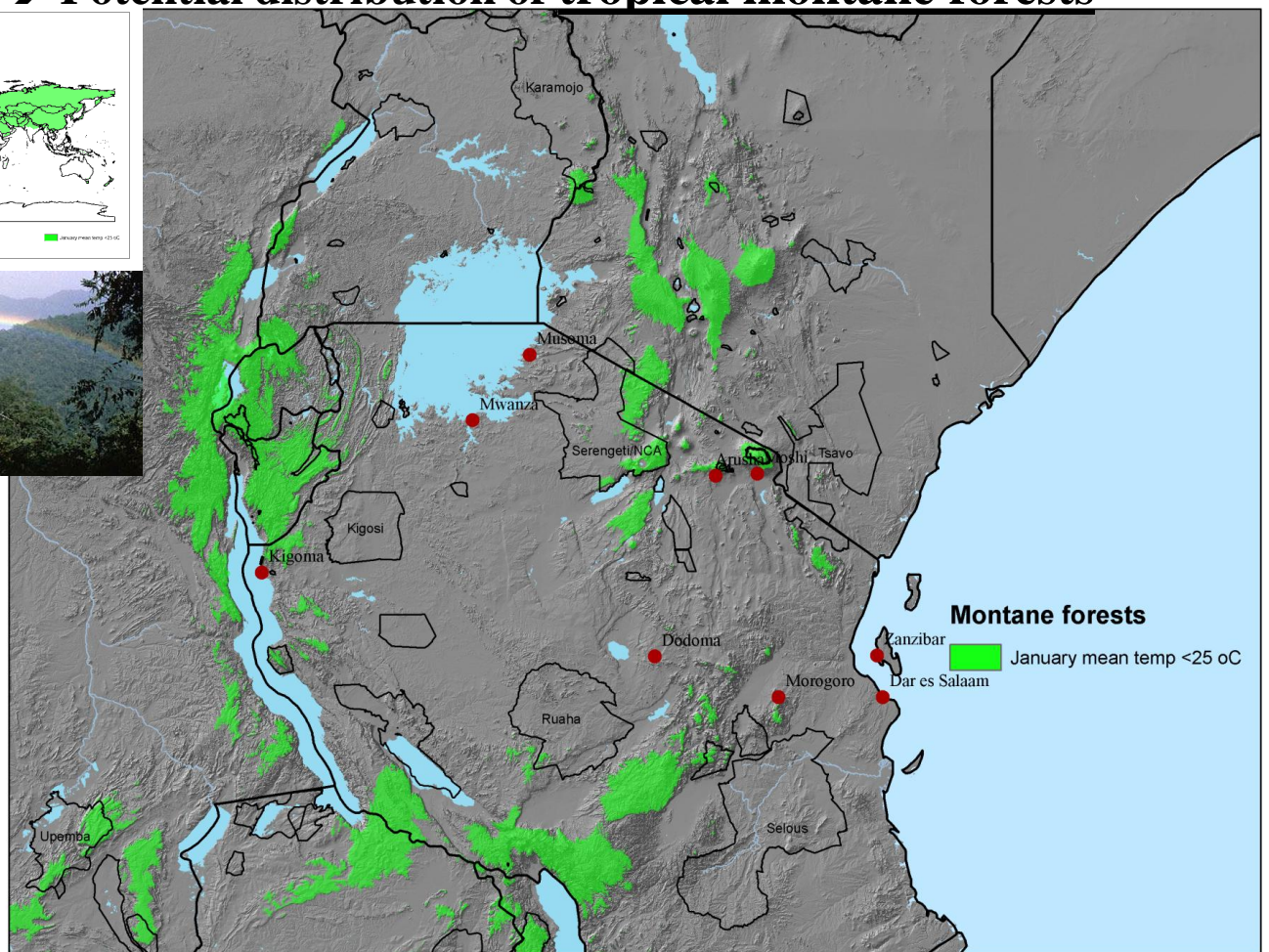
→ **Woody vegetation change from 2000 - 2005**



Data: Hansen et al. 2007 Vegetation Continuous Fields Collection 4 / GLCF

Which habitats and ecosystems are mostly threatened?

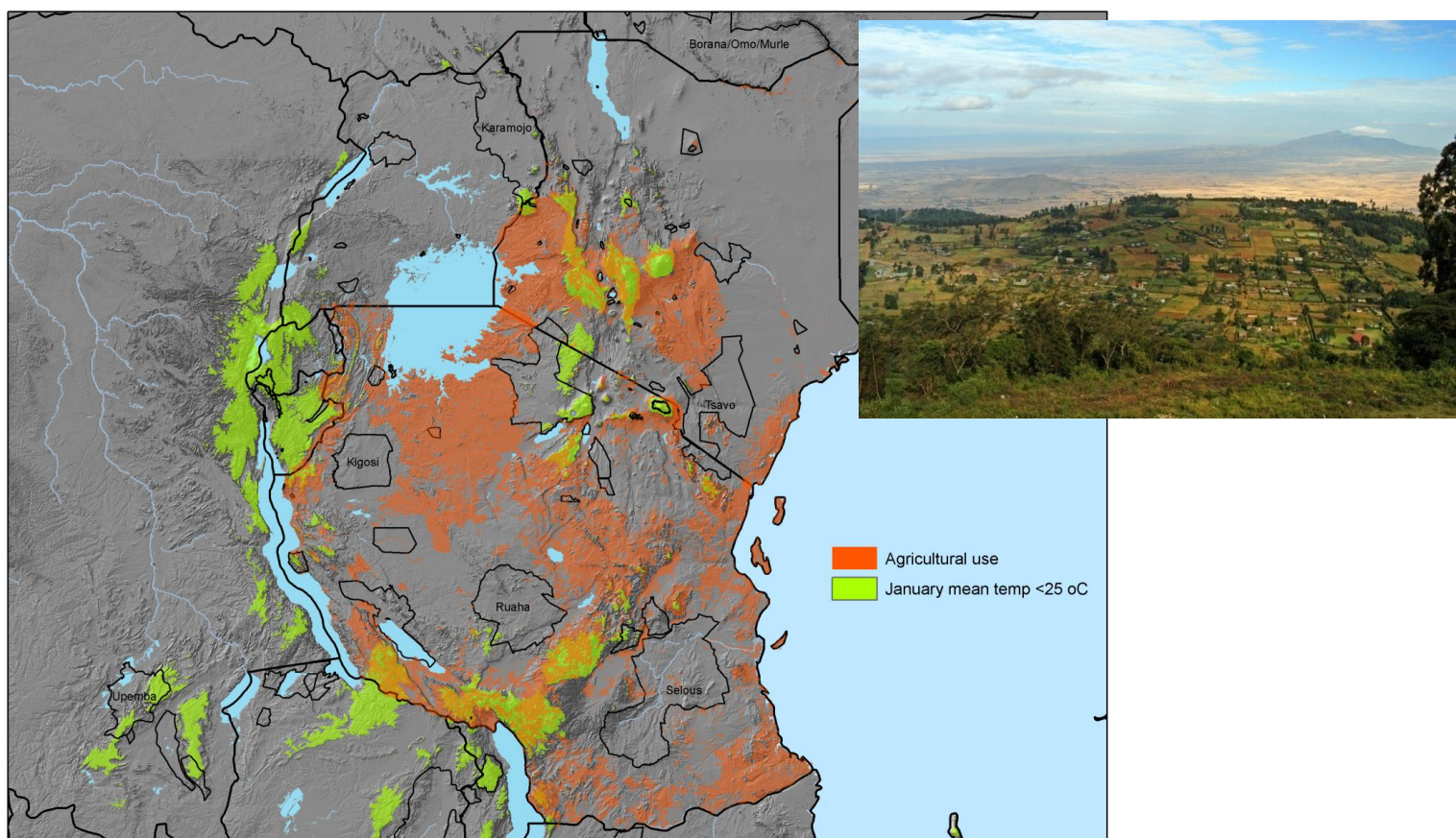
→ **Potential distribution of tropical montane forests**



Which habitats and ecosystems are mostly threatened?

Tropical montane forests

→ **Current loss due to conversion to agriculture**



Data temperature: Worldclim
Data landuse: FAO Africover

CLIMATE CHANGE AS A CRISIS FOR SPIRITUALITY, ETHICS AND LIFE STYLE

- When there is hunger, food shortage, displacement, conflicts, migration, etc due to climate change; this means:-
 - Reduced worship/fellowship
 - Reduced evangelism
 - Reduced witnessing
 - Reduced witnessing
 - Changed life style/eating habits
 - Reduced tithe and offerings
 - Increased moral hazards/increased immorality
 - Reduced keeping of the commandments, etc
- Hence increased Pastoral care challenges!!!

CONCLUSIONS

- The development and implementation of a successful climate change adaptation strategy will need to employ an iterative adaptive management approach, incorporate significant stakeholder engagement, and promote sharing of knowledge among experts and the community
- Climate change is a reality, so we should continue to reduce greenhouse gases to salvage our ecosystems; and conduct scientific studies to understand the drivers and propose mitigation and adaptation measures
- **LET US ACT NOW**

THANK YOU

ASANTENI SANA

**CHILDREN DO NOT HAVE
ENOUGH TO EAT:-
UNDERNUTRITION.**

16th July, 2012

MY NAME IS TODAY.

- “ We are guilty of many errors and many faults, but our worst crime is abandoning the children, neglecting the foundation of life. **Many of the things we need can wait. The child cannot.** Right now is the time his bones are being formed, his blood is being made and his senses are being developed.
- “ To him/her we cannot answer "Tomorrow". His/Her name is "**Today**".

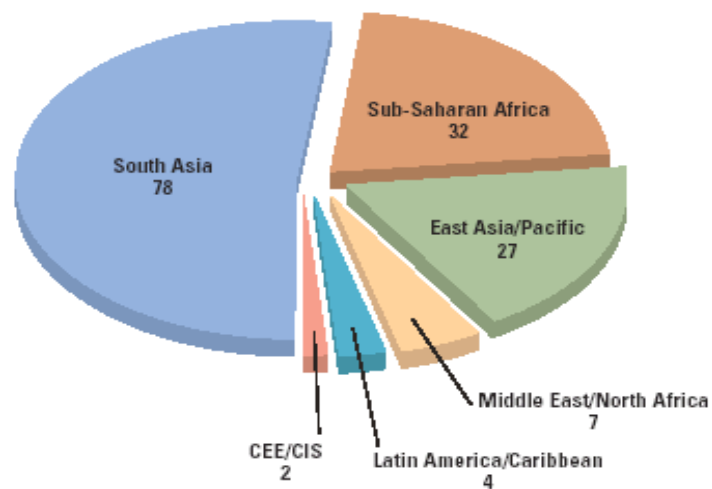
Gabriela Mistral; Chilean, 1948

150 million children malnourished.

150 million children in developing countries are still malnourished

More than half of underweight children live in South Asia

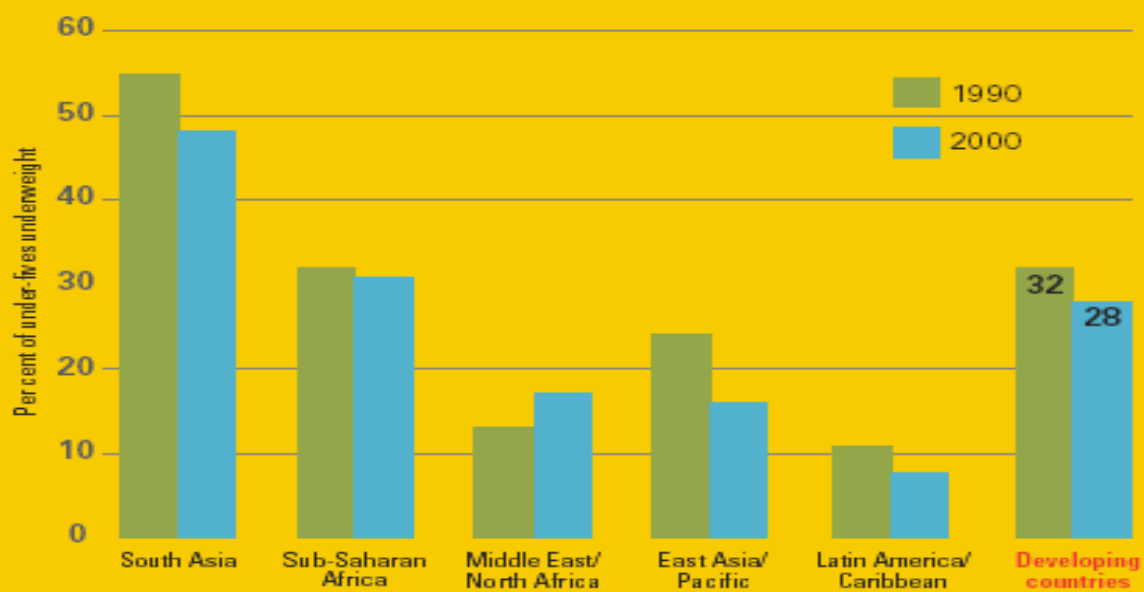
Figures in millions



Nutritional status: Africa not changing

NUTRITIONAL STATUS IMPROVES

Percentage of under-fives underweight, 1990 and 2000



CEE/CIS region is not included in this graph because of insufficient 1990 data.

Per cent of under-fives underweight, 1995-2000

Sub-Saharan Africa

Botswana	19
Zimbabwe	19
Congo	34
Lesotho	36
Mauritius	36
Sao Tomé and Príncipe	36
Gambia	37
Senegal	38
Cameroon	31
Côte d'Ivoire	31
Guinea	33
Guinea-Bissau	33
Kenya	33
Mali	33
Central African Rep.	34
Cote d'Ivoire	35
Ghana	35
Madagascar	35
Togo	35
Zambia	35
Mozambique	36
Somalia	36
Uganda	36
Nigeria	37
Sierra Leone	37
Chad	38
Rwanda	39
Rwanda	39
Tanzania	39
Regional average	30
Madagascar	33
Paraguay	34
Congo, Dem. Rep.	34
Niger	40
Mali	43
Ethiopia	44
Burundi	45
Ethiopia	47

Old data or no data

Sub-Saharan Africa: Angola, Cape Verde, Equatorial Guinea, Gabon, Liberia, Namibia, Seychelles, South Africa, Swaziland

Middle East/North Africa: Cyprus, Morocco

East Asia/Pacific: Brunei Darussalam, Cook Islands, East Timor, Fed. States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Republic of Korea, Samoa, Singapore, Solomon Islands, Thailand, Tonga, Tuvalu, Vanuatu

Latin America/Caribbean: Argentina and Barbados, Argentina, Bahamas, Barbados, Belize, Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, Saint Vincent/Grenadines, Suriname, Trinidad and Tobago

CEE/CIS: Estonia, Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Tajikistan, Turkmenistan

Middle East/North Africa

Lebanon	3
Occupied Palestinian Territory	4
Turkey	4
Jordan	5
Libya	5
Algeria	6
Qatar	6
Saudi Arabia	6
Kuwait	18
Iran	17
Egypt	12
Syria	13
Saudi Arabia	14
United Arab Emirates	14
Regional average	15
Iraq	18
Sudan	17
Djibouti	18
Oman	24
Yemen	48

East Asia/Pacific

China	18
Mongolia	13
Regional average	17
Malaysia	18
Indonesia	28
Philippines	28
Viet. Nam	38
Myanmar	38
Laos People's Dem. Rep.	48
Cambodia	48
Korea, Dem. People's Rep.	68

South Asia

Bhutan	79
Sri Lanka	39
Pakistan	38
Maldives	49
Regional average	46
Nepal	47
India	47
Bangladesh	48
Afghanistan	48

Latin America/Caribbean

Chile	1
Chile	4
Jamaica	4
Costa Rica	5
Dominican Rep.	5
Paraguay	5
Uruguay	5
Venezuela	5
Brazil	6
Colombia	6
Paraguay	7
Regional average	6
Mexico	6
Pera	6
Bolivia	10
El Salvador	11
Cuba	11
Nicaragua	11
Ecuador	15
Guatemala	24
Honduras	25
Haiti	28

CEE/CIS

Croatia	1
Yugoslavia	2
Armenia	3
Georgia	3
Moldova, Rep.	3
Russian Federation	3
Ukraine	3
Turkey and Azerbaijan	4
Kazakhstan	4
TRM Macedonia	6
Regional average	7
Turkey	8
Kyrgyzstan	11
Albania	14
Azerbaijan	17
Uzbekistan	19

28%
Underweight

Per cent of under-fives underweight, 1995-2000

Sub-Saharan Africa

Botswana	13
Zimbabwe	13
Congo	14
Lesotho	16
Mauritius	16
Sao Tome and Principe	16
Gambia	17
Senegal	18
Cameroon	21
Côte d'Ivoire	21
Guinea	23
Guinea-Bissau	23
Kenya	23
Mauritania	23
Central African Rep.	24
Comoros	25
Ghana	25
Malawi	25
Togo	25
Zambia	25
Mozambique	26
Somalia	26
Uganda	26
Nigeria	27
Sierra Leone	27
Chad	28
Benin	29
Rwanda	29
Tanzania	29
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Madagascar	33
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Ethiopia	47

Middle East/North Africa

Lebanon	3
Occupied Palestinian Territory	4
Tunisia	4
Jordan	5
Libya	5
Algeria	6
Qatar	6
Bahrain	9
Kuwait	10
Iran	11
Egypt	12
Syria	13
Saudi Arabia	14
United Arab Emirates	14
Regional average	15
Iraq	16
Sudan	17
Djibouti	18
Oman	24
Yemen	46

East Asia/Pacific

China	10
Mongolia	13
Regional average	17
Malaysia	18
Indonesia	20
Philippines	28
Viet Nam	33
Myanmar	36
Lao People's Dem. Rep.	40
Cambodia	40
Korea, Dem. People's Rep.	60

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Latin America/Caribbean: Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, Saint Vincent/Grenadines, Suriname, Trinidad and Tobago

CEE/CIS: Belarus, Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Tajikistan, Turkmenistan

TANZANIA AMONG TOP COUNTRIES WITH MALNUTRITION WORLDWIDE

Where chronic malnutrition is highest

Countries where stunting in
under-fives is 40 per cent or more

Korea, Dem. People's Rep.	60
Zambia	59
Burundi	57
Nepal	54
Afghanistan	52
Yemen	52
Ethiopia	51
Madagascar	49
Malawi	49
Cambodia	46
Guatemala	46
India	46
Nigeria	46
Bangladesh	45
Congo, Dem. Rep.	45
Lesotho	44
Mauritania	44
Tanzania	44
Rwanda	43
Comoros	42
Lao PDR	41
Bhutan	40
Niger	40

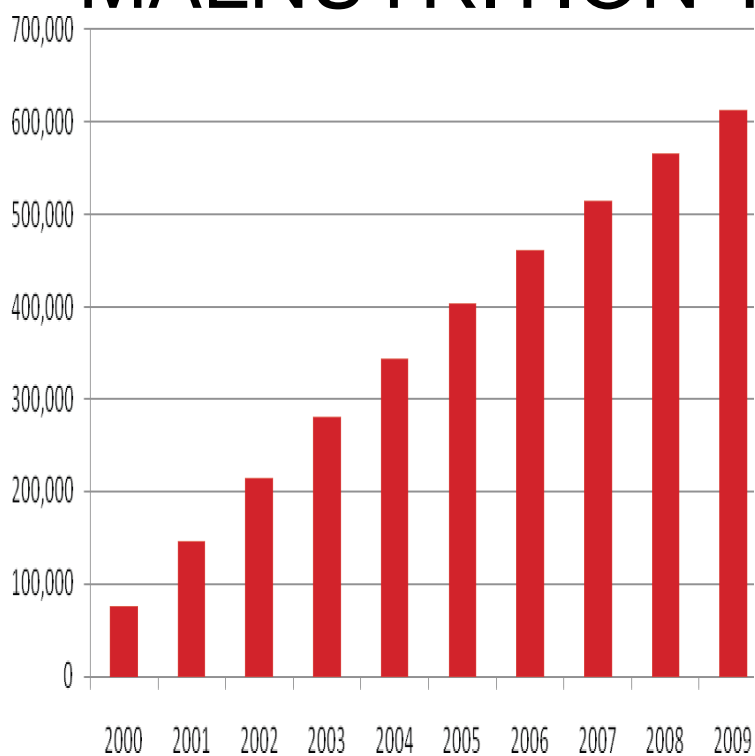
Source for all charts, graphs and tables: UNICEF, 2011.

How can
religious
institutions
assist to half
stunting in
Tanzania?

CAUSE OF INADEQUATE FOOD.

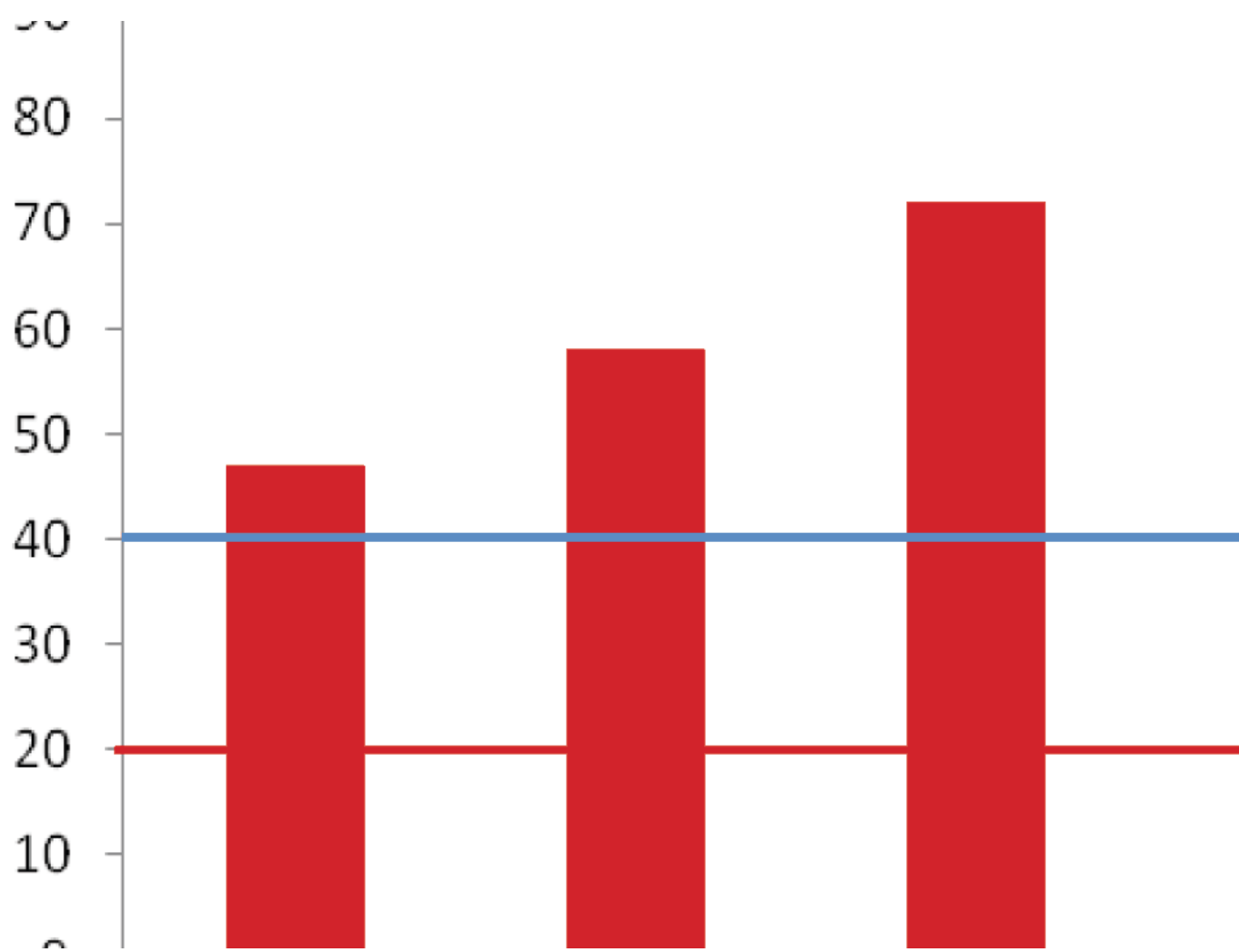
” See hand out

CUMLATIVE CASES OF MALNUTRITION TANZANIA.

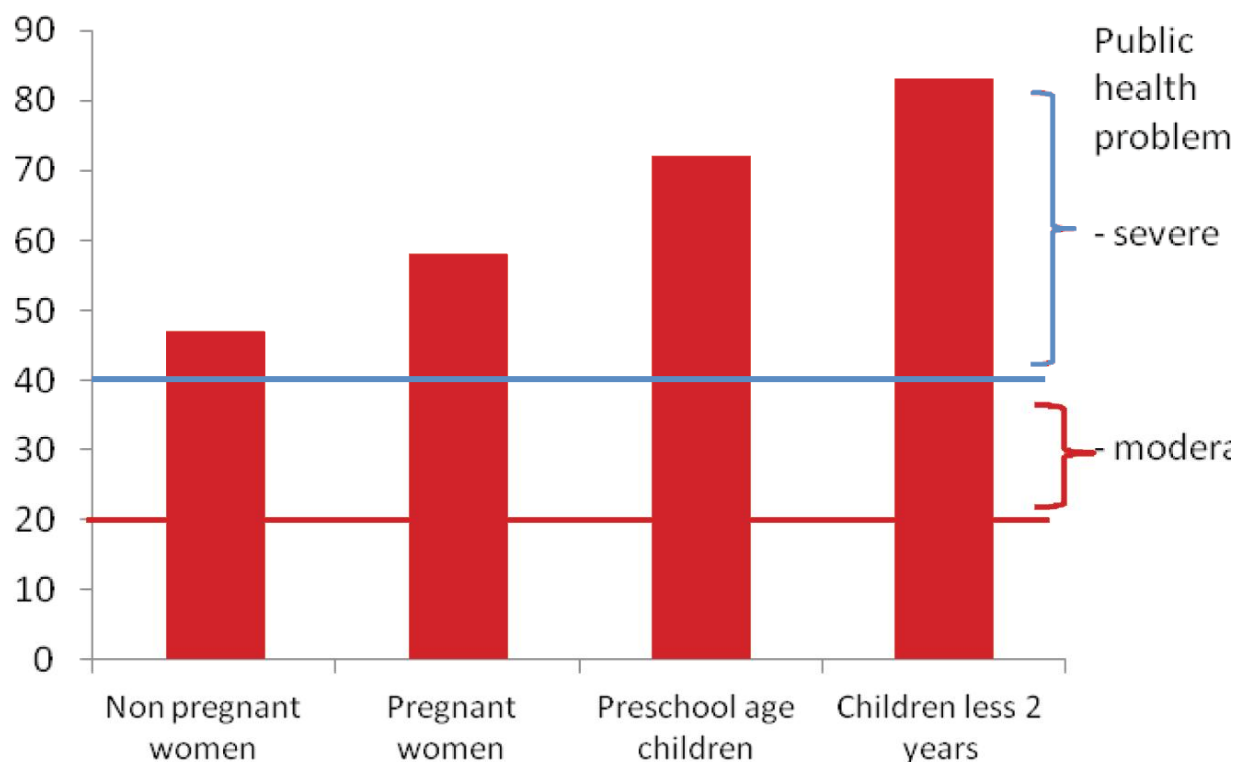


“ No observable decrease of cases of malnutrition

“ Calculated from DHS 1995-2005 and 2006 projections



EXTENT OF ANAEMIA



PROBLEM

- “ Children die prematurely due to malnutrition

Top 10 of interventions with the highest cost-benefit ratios

“ Solution Challenge

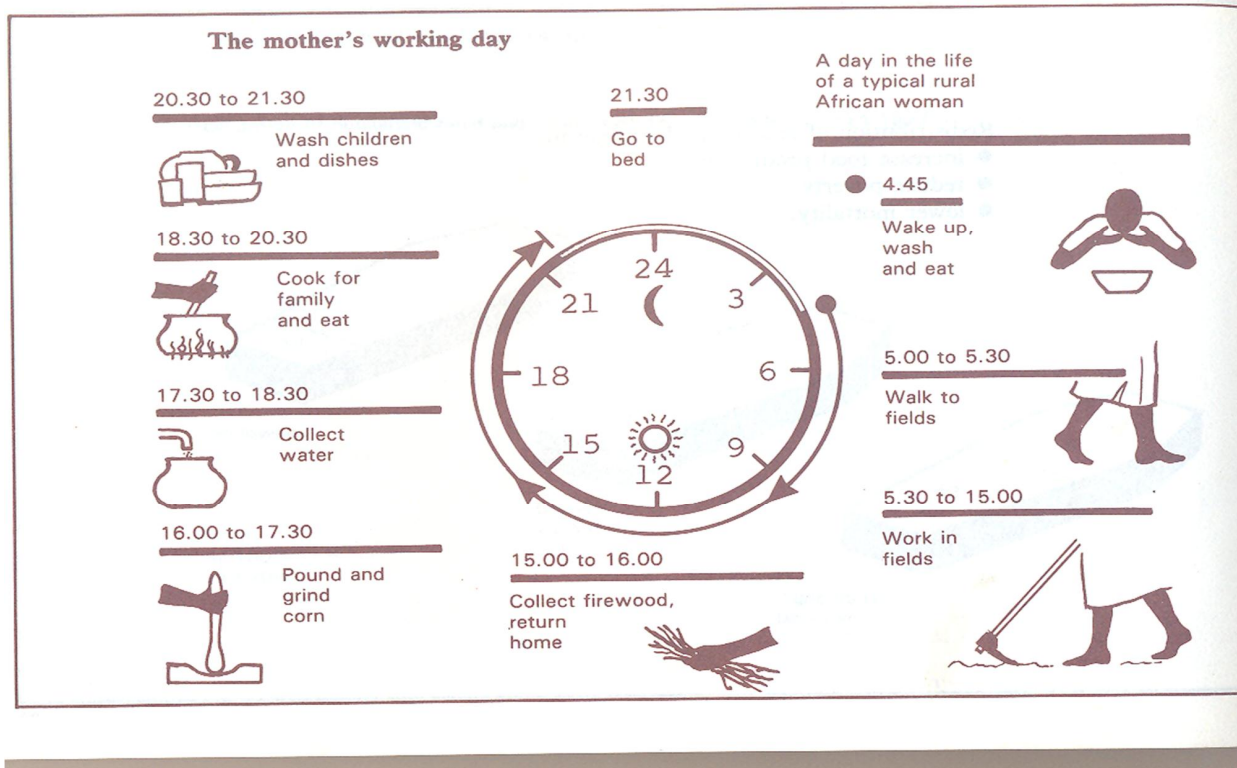
- “ 1 Micronutrient supplements for children (vitamin A and zinc) Malnutrition
- “ 2 The Doha development agenda Trade
- “ 3 Micronutrient fortification (iron and salt iodization) Malnutrition
- “ 4 Expanded immunization coverage for children Diseases
- “ 5 Biofortification Malnutrition

- 6 Deworming and other nutrition programs at school Malnutrition / Education
- 7 Lowering the price of schooling Education
- 8 Increase and improve girls's schooling Women
- 9 Community-based nutrition promotion Malnutrition
- 10 Provide support for women's reproductive role Women

Source: Copenhagen Consensus 2008. Available at www.copenhagenconsensus.org

" T

THE MOTHER IS TOO BUSY TO CARE FOR THE CHILD PROPERLY



From my Name is Today by Morley D and Lovel H.

WOMEN AND CLIMATE CHANGE

A PERSPECTIVE FROM NICARAGUA



Prof.
Brenda
Consuelo
Ruiz

SIPCC
Seminar
on Caring
for
Creation,
Caring
for
People.

Tanzania,
July 15-
21, 2012

Through the ages, there has been a strong association between women and nature.

- Story of creation in Genesis.
- Women as healers.
- The Chipco Movement in India.



■ Consequences of climate changes in the world.

“ Migration due to climate changes will increase dramatically: 1.5% of the total population.

“ During the last 20 years, 98% of all victims of natural disasters are from «developing» countries.

“ A great deal of environmental degradation in the South is created by companies from the North.

“ The will be diminishing natural resources which will lead to serious socio-political unrest.

■ Climate changes in Central America.

- “ Greenhouse gas emissions in Central America accounted for 0.5% of total gas emissions, but the region is already experiencing severe effects of global warming.
- “ Central America is one of the most vulnerable regions to climate change.



“ 55% of the population in Central America live under the poverty line.

“ The population is expected to grow from 35 million in 2005 to 68 million in 2050.

“ We suffer all the consequences of climatic changes Tanzania is experimenting: Droughts, floods, landslides, rivers and lagoons drying up, epidemics, raising temperatures, diminishing productivity, etc.



“ In addition, we have an increasing number of hurricanes and other geological events like volcanic eruptions, earthquakes, etc. The consequences of them all being worsened by other human made disasters like war and government corruption.



■ How climate changes affect the lives of women in the world.

“ They affect women the worst because they are the majority of the 1.5 billion people who live with less than one dollar a day.

“ Women are the most affected because of gender gaps and inequalities: As the majority of the poor and as single mothers, they more likely to live in poor housing in more marginal areas, vulnerable to floods, hurricanes and elevation of sea levels.



- “ During natural disasters women are more likely to be killed. For each man who dies in a natural disaster, four women die.
- “ Women bear a disproportionate load during rehabilitation after a disaster, often at the cost of their own health, mental and physical.
- “ Women are more vulnerable to violence after a disaster: i.e. rape or sexual abuse in refuge centers, domestic violence.
- “ Women often suffer the brunt of migration provoked by natural disasters.

■ What women in Nicaragua are doing about climate change.

Case 1. Candida Escalante.

Candida lives in Chinandega. She grew up carrying water from a nearby creek for her family. The children were often sick. This creek often flooded during the rainy season but eventually dried up.

The men in her family left for Costa Rica trying to find jobs.

Candida led a reforestation project with other women in her community and other development projects. She represented Nicaragua in the United Nations Conference on Sustainable Development in Rio+20.



Case 2. Adelina Rodriguez

Adelina and her two girls, 11 and 8 years old, pick cans, glass bottles, paper, plastic, cardboard and metals which she will later sell to the recycling company so she can feed her family. With the organic garbage she and other women process compost. The oldest girl says with a smile: “When I sell what I have picked today, I can even buy my notebooks for school”.

Adelina and her daughters are part of the 25 thousand heads of family who survive through picking the garbage and selling what they find. Some are able to generate an income equivalent to US\$1 a day.



Case 3: The women from Posoltega

During Hurricane Mitch in 1998, the town of Posoltega was erased from the map as the heavy rains created a huge volcano slide that destroyed 10 entire communities, killed over 3 thousand people and created much environmental damage in just a few minutes.

Even though they still suffer from post-traumatic stress syndrome, women are now involved in rebuilding houses, growing plants for the reforestation of the area, cultivating organic vegetable gardens and cooking community kitchens every day to help families who have malnourished children.




CONCLUDING REMARKS:

1. It is important to recuperate our ancestors' view of the earth as our Pacha Mama: Mother Earth, and to commit ourselves to change our attitude towards it.
2. As churches we need to develop our prophetic role in making accountable those who should be made accountable.
3. People in the South need to come together and find ways to be heard about climate change issues.
4. In the elaboration of policies regarding climate changes, it is important to include gender specific analysis on how these impact men and women differently.

5. As climate change affects women the most, women's voices should also be heard and they should be equally involved in decision making processes regarding climate change.
6. Aside from being seen as the administrators of natural resources and food producers, women are also seen as the caretakers, innovators, educators, in possession of essential knowledge and organizers. They play a key role in keeping families together after a disaster and should be supported in that role.
7. Women should be prioritized for counselling.





**MUCHAS
GRACIAS**



Centro Evangélico de Estudios Pastorales en Centro América

CEDEPCA'S DISASTER MINISTRY

An example of pastoral care and
counseling in disasters
- and questions for reflection



Educación que transforma. Rom 12:2



Educación que transforma. Rom 12:2

CONFERENCE QUESTIONS

- “ How can we be aware of the concerns of people who are suffering from drought, increasing lack of water, floods and the reduction of basic natural resources? **How can we be with them?** Which measures must be taken to reduce their suffering?
- “ Which theology gives us new ideas to relate the endangered creation to God the creator? How do religions respond to the situation of endangerment?
- “ **Which ecclesiastical development political measures have priority in this situation?**
- “ Which new ethics do we need how can we develop new lifestyles to sustain creation?
- “ How can we deal with the helplessness we repeatedly feel in the light of these dangers?

...we want to confront them from the point of view of **pastoral care**, theology and **developmental aid**



c e d e p c a

sipcc

TERMS:



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MITIGATION

VS

ADAPTATION



GUATEMALA



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GUATEMALA



Educación que transforma. Rom 12:2



GUATEMALA



Educación que transforma. Rom 12:2



GUATEMALA



Educación que transforma. Rom 12:2



cedepca

GUATEMALA



Educación que transforma. Rom 12:2



DISASTERS AND CLIMATE CHANGE



Educación que transforma. Rom 12:2



CEDEPCA



Educación que transforma. Rom 12:2



CEDEPCA



Educación que transforma. Rom 12:2



Disaster Ministry



- Psychosocial and spiritual care
- Risk reduction and meeting basic material needs



COMMUNITY-BASED PSYCHOSOCIAL SERVICE



Educación que transforma. Rom 12:2

“[assisting] affected people to attain stable life and integrated functioning, to restore hope, dignity, mental and social well-being and a sense of normality... The foundation of all community-based psychosocial work is the belief in the affected community’s capacity for recovery and resilience (CBPS Facilitator’s Guide, p. 2-2).”

- Directly in Communities
- Training church leaders

<http://www.svenskakyrkan.se/tcrot/lutherhjalpen/psychosocialservices/pdf/psychosocialservices.pdf>



COMMUNITY-BASED PSYCHOSOCIAL SERVICE



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- Increasing highlighting of importance within humanitarian aid
- Medium-term presence
- Establish empathy
- Groups by age and sex
- Weekly meetings
- Gender sensitivity



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COMMUNITY-BASED PSYCHOSOCIAL SERVICE



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Techniques:

- Telling our stories
- art
- music
- Breathing techniques
- relaxation techniques
- Handicrafts
- songs and tongue twisters



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COMMUNITY-BASED PSYCHOSOCIAL SERVICE



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- Dream about what participants want their lives to be like, and what actions they need to take to make those desired changes



RESILIENCE



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Educación que transforma. Rom 12:2

PSYCHOSOCIAL RESILIENCE

Why do some people survive trauma with little long term damage and others struggle for months and years? This quality is known as resilience. There seem to be three sets of characteristics that contribute to resilience:

1. Innate and learned skills including independence, social ability, a feeling of being valuable, creativity, the ability to master difficult challenges etc.
2. Family relationships around the person.
3. Network in which people relate.

(CBPS p. 5-4)

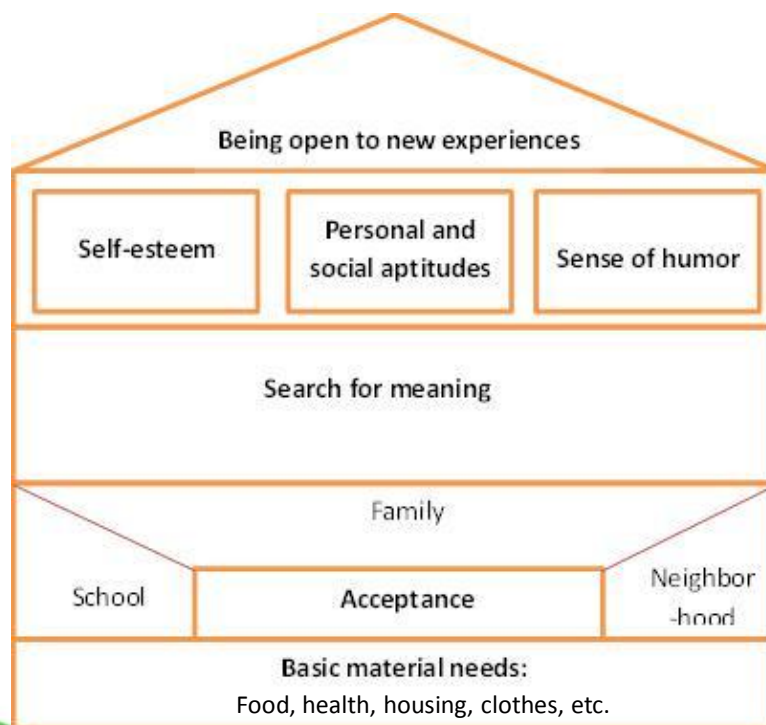


c e d e p c a



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HOUSE OF RESILIENCE



GROUP DISCUSSION: RESILIENCE



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How does my church or organization contribute to the resilience of its communities?

“ In skills, family relationships, and wider community relationships?

“In spiritual and psychosocial resilience?

“In terms of protecting basic needs?

“In terms of ecological health?



c e d e p c a

BEST PRACTICES: PRINCIPLES OF CONDUCT



Educación que transforma. Rom 12:2

1. The humanitarian imperative comes first.
2. Aid is given regardless of the race, creed or nationality of the recipients and without adverse distinction of any kind. Aid priorities are calculated on the basis of need alone.
3. Aid will not be used to further a particular political or religious standpoint. Humanitarian aid will be given according to the need of individuals, families and communities.
4. We shall endeavor not to act as instruments of government foreign policy.
5. We shall respect culture and custom.



BEST PRACTICES: PRINCIPLES OF CONDUCT



Educación que transforma. Rom 12:2

6. We shall attempt to build disaster response on local capacities.
7. Ways shall be found to involve program beneficiaries in the management of relief aid.
8. Relief aid must strive to reduce future vulnerabilities to disaster as well as meeting basic needs.
9. We hold ourselves accountable to both those we seek to assist and those from whom we accept resources.
10. In our information, publicity and advertising activities, we shall recognize disaster victims as dignified humans, not hopeless objects.





Educación que transforma. Rom 12:2

GROUP DISCUSSION: CODE OF CONDUCT

What are we doing well as churches/organizations in terms of the principles of conduct in our outreach? Where could we improve?

Consider especially these following:

- Recognize role and needs of women
- Aid is not to further political or religious standpoint
- Responses should involve beneficiaries and strengthen capacity
- In response, avoid environmental damage and avoid creating long-term beneficiary dependence.
- In actions and in publicity, recognize disaster victims as dignified humans, not hopeless objects.



c e d e p c a

COMMUNITY-BASED PSYCHOSOCIAL SERVICE

- Spiritual care
- Initial resistance to psychologist



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BEST PRACTICES: REMEMBERING GENDER



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Women are especially vulnerable in disasters because:

- Less access to resources
- Less ability to migrate because of domestic duties
- Increase in number of female-led households as men migrate, meaning more economic duties
- Increased domestic burden with inadequate facilities
- Increase in domestic and sexual violence following disasters

