EAST AFRICAN COMMUNITY

HEADS OF STATE RETREAT ON FOOD SECURITY AND CLIMATE CHANGE

NGURDOTO MOUNTAIN LODGE
Arusha , Tanzania
2ND DECEMBER 2010

REPORT OF THE RETREAT

EAC SECRETARIAT
Arusha, Tanzania
December, 2010

1.0 INTRODUCTION

(a) Rationale for the Retreat

The EAC region is frequently affected by food shortages and pockets of hunger although the region as a whole has a huge potential and capacity to produce enough food for regional consumption and a large surplus for export to the world market. There are many factors leading to this state of affairs but the most critical are: (i) inadequate food exchange/trade between periods and/or places of abundant harvest on one hand, and those with deficit on the other; and (ii) high variability in production caused by high variability of weather which is becoming worse due to climate change.

In that regard, the 11th Summit Meeting of Heads of State of the EAC Partner States, which was held in Arusha, Tanzania on 20th November, 2009 *directed the urgent development of a climate change policy and strategies to address the adverse impact of climate change, including determining how surplus food in one country can be shared in countries that are worst hit. The Summit further directed that a special food security and climate change Summit be organized quickly and should involve all key stakeholders.*

In that regard, the EAC Heads of State Retreat on Climate Change and Food Security was held on 2nd December 2010, Arusha, Tanzania. EAC Partner States and resource persons made presentations of regional perceptive on food security and climate change impact. Also the Retreat received three documents revolving around food security and climate change. These are EAC Food Security Action Plan, EAC Climate Change Policy and Declaration of the Summit of EAC Heads of State on Food Security and Climate Change.

The documents mentioned above lay a foundation for the development of a harmonized approach for enhancement of food security in the East African region. They will also guide Partner States and other stakeholders on the implementation of collective measures to address Climate Change in the region which include those for adaptation and mitigation, while assuring sustainable social and economic development.

The report of the Retreat is expected to feed into the 12th Summit Meeting of Heads of State of EAC Partner States to be held on 3rd December, 2010, Arusha, Tanzania.

(b) Retreat Theme

The theme of the Retreat was ***'Transforming Agriculture through Innovations'***.

(b) Participation

The participants included the EAC Heads of State, Ministers, and Permanent Secretaries of various relevant Ministries from the EAC Partner States, Ambassadors and senior government officials. Representatives of Regional

Economic Communities, International Conference on Great Lakes Region, officials and experts from African Union, United Nations, World Bank, International and local Development Partners, Private Companies, East African Farmers Federation, East African Business Council, Non-Governmental Organizations, universities amongst others attended the meeting. The meeting was chaired by His Excellency President Jakaya Mrisho Kikwete of the United Republic of Tanzania and Chairperson of the Summit of Heads of State. The full list of participants is hereto attached as **Annex I.**

2.0 OBJECTIVES OF THE RETREAT

The purpose of the Retreat was to consolidate regional efforts in addressing food security in light of the climate change challenges faced by the EAC Partner States.

Specifically the objectives were to:

a) Endorse the EAC Food Security Action Plan (2010-2015) and EAC Climate Change Policy;
b) Share experiences across the region in addressing food security and climate challenge effects; and
c) Receive draft Declaration of the Summit of the EAC Heads of States on Food Security and Climate Change.

3.0 RETREAT METHODOLOGY

The Retreat used a combination of methods in the deliberations as outlined below:

a) Presentations by each EAC Partner State on current status of national food security and climate change impact;
b) Presentations by resource persons of regional perceptive on food security and climate change impact;
c) Presentations on scaling up of agricultural innovations in Africa with special focus on the EAC region; and
d) Focused plenary discussions.

4.0 OPENING REMARKS

(a) Welcoming Remarks by the Secretary General

The EAC Secretary General welcomed all at the Retreat and emphasized the importance of food security to the region and noted that the climate change challenge has overcome some of the regions drought coping mechanisms especially in the dry lands. He thanked all the invited resource persons for accepting the invitation including; Prof. Nuhu Hatibu of Kilimo Trust, Prof. Calestous Juma of the Harvard University Kennedy School, USA, Prof. Laban Ogallo of IGAD Climate Prediction and Application Centre (ICPAC) and Ms. Rhoda Tumusiime, Commissioner, Rural Economy and Agriculture of AU Commission.

(b) Introductory Remarks by Chairperson of the Council of Ministers

The Chairperson of the Council of Ministers, Hon. Hafsa Mossi from the Republic of Burundi, emphasized on the importance in addressing food security issues and the climate change challenges including the negative impacts. She noted that this is the first time that the region is discussing these two issues at Summit level. This is in recognition of the fact that climate change, if not addressed, can roll back or even undo the painstaking progress we have made on many fronts of our socio-economic development. She thereafter, welcomed the Chair of the Summit to address the participants.

(c) Statement by Chairperson of Summit

The Chairperson of the Summit, H. E. President Jakaya Mrisho Kikwete, started by welcoming all their Excellencies the Presidents of the EAC Partner States and their representatives as well as other invited guests to Tanzania. He noted that erratic rainfall and prolonged dry spells had negatively impacted on the United Republic of Tanzania's production performance of the agriculture sector as well as availability of adequate water for cattle.

He further noted that due to frequent and prolonged droughts some areas of the EAC region have repeatedly experienced recurrent food shortages. He emphasized the need for exploring adaptation and mitigation measures in addressing the negative effects of climate change.

He called for the use of good agricultural practices that are environmental friendly. He also paused the question, 'Can the EAC Partner States be food secure'? His answer was, yes but with good planning, investment and commitment. He noted the need for effective use of agricultural inputs to enhance food production.

(d) Heads of State Statements

The Republic of Kenya

In his statement, H. E. President Mwai Kibaki thanked the people of Tanzania for their hospitality. He also congratulated H. E. President Jakaya Kikwete on his re-election and the people of Tanzania for holding successful elections.

The President called for effective and decisive actions to address food security and climate change adverse effects. He observed that the EAC is well endowed with land resources. The President called for movement of food from surplus areas to deficit areas and harmonization of staple foods standards in the EAC.

The President noted that food security is a basic human right that must therefore be addressed. He shared some of the experiences in Kenya for effective management of natural resources and increased agricultural production for food security, including; conservation agriculture, re-afforestation and forestation, agro-forestry to improve tree cover, development of drought tolerant and early maturing crops, and investment in livestock development projects amongst others.

Furthermore, the President emphasized on regional approaches in addressing food security and climate change challenges. He noted that together we can effectively address adverse climatic changes. The President observed that free flow of agriculture produce (food) will go a long way in contributing to food security. He reiterated that the Government of Kenya is committed to implementation of the EAC Food Security Action Plan and EAC Climate Change Policy.

The Republic of Uganda

Hon. Sam Kutesa, Minister of Foreign Affairs on behalf of H. E. the President of the Republic of Uganda started his remarks by thanking the Chairperson of the Summit, the Government and People of the United Republic of Tanzania for hosting the Retreat on food security and climate change. He congratulated President Jakaya Kikwete on his re-election in the recently concluded general elections.

Hon. Kutesa noted that the Retreat was coinciding with the ongoing climate change conference in Cancun Mexico. He further noted that climate change has negative impact to several sectors which are the backbone of our economies. Agriculture is one sector that is impacted negatively by climate change while it plays a major role in the economy and livelihood of Ugandans. Recent landslides in highland areas had also resulted in loss of lives and displacement of people. Devastating impacts on livestock and crops production have also resulted in conflicts, displacements and cross border raids.

Hon. Kutesa proposed some critical roles which the region could undertake in order to address food insecurity and climate change effects. These include: sustainable utilization and management of natural resources, water conservation, research and development and agro-processing and value addition to improve prices, promote exports and create employment.

Hon. Kutesa concluded his remarks by informing the Retreat that Uganda was committed and would support a regional approach to address issues of food security and climate change.

The Republic of Burundi

H. E. the President of the Republic of Burundi pointed out that climate change has adverse impact specifically on land, water and biodiversity and that people affected are mostly the rural population that depends heavily on those natural resources. His remarks focused on the Millennium Development Goals (MDG's) and the conclusions of the Hague Conference on Agriculture, Food and Climate Change by observing that, the world population which is estimated to reach 9 billion in 2050 will place tremendous stress on utilization of natural resources. At the same time, the population of EAC countries will grow by an average of 3% while the GDP by about 5%, meaning that the population will still face famine and hunger. Therefore, ther e is need to deal with this situation by adopting

effective regional policy in order to achieve the MDG's specifically on eradicating poverty, increasing food production and addressing climate change impact.

The President also pointed out that 75% of the world's poor are living in the rural areas and most are involved in farming. Furthermore, he noted that the World Report of 2010 estimated that climate change may increase the number of under-nourished people in 2050 to 170 millions and therefore, there is need for comprehensive approach to address the situation.

The Republic of Rwanda

On behalf of the President of the Republic of Rwanda, the Prime Minister, Rt. Hon. Bernard Makuza, congratulated H. E. President Jakaya Mrisho Kikwete for being re-elected for the second term. The Prime Minister congratulated H. E. President Pierre Nkurunziza for his re-election and as an incoming Chairperson of the Summit. Further, he congratulated H. E. President Mwai Kibaki and the people of Kenya for conducting a successful referendum on the new constitution.

The Prime Minister said the Treaty for the establishment of the East African Community call upon Partner States to undertake measures that aimed at promoting and enhancing the complementality and sustainability in agricultural and food security.

He noted that in 2007, Rwanda embarked on crop intensification program which has registered great achievements in food security in the areas where the program was implemented. In the area of climate change the Prime Minister said this is the global environmental challenge of the 21st century and all countries are now experiencing adverse impacts and the EAC region is not exempted.

The Prime Minister noted that, in order to tackle the food insecurity and the effects of the climate change, there is need to ensure investments in sustainable agriculture production systems with particular focus on climate change adaptation, reduce deforestation, promote afforestation and agro-forestry for improved nutrition and the use of organic and inorganic fertilizers to improve soil fertility and sustainable performance.

The Prime Minister reiterated the commitment of the Government of Rwanda to support the regional efforts to address the climate change and the establishment of the EAC Climate Change Fund specifically to support the trans-boundary related projects.

The Heads of State' remarks are hereto attached as **Annex II.**

5.0 PRESENTATIONS

a) Partner States Presentations

The presentations highlighted the importance of the agriculture sector in their respective Partner Sates and noted the challenges they are facing in addressing the climate change effects. The EAC Partner States also shared experiences in applying various measures being undertaken to address food insecurity and adverse climate change. It was noted that although EAC Partner States produce minimal amounts of green house gases (GHG), they are nevertheless some of the biggest victims. The adverse effects of the climate change effects have exacerbated the food shortage in the region and affected many other sectors including infrastructure, health amongst others.

The Partner States presentations were made by Dr. John Mngodo, Director Food Security, United Republic of Tanzania, Hon. Aggrey Bagiire, Minister of State for Agriculture, Republic of Uganda, Mr. Mambakiza, Tabu Abdulaa, Principal Advisor, Economic Affairs (Councieller Principal au Bureau Charge des questions Economiques) Republic of Burundi, Dr. Romano Kiome, Permanent Secretary Ministry of Agriculture, Kenya and Dr. Theogene Rutagwenda, Director General RARDA, Ministry of Agriculture and livestock, Rwanda. Partner States' presentations are hereto attached as **Annex III.**

b) Presentations by Resource Persons

The following invited resource persons made presentations:

1) Ms. Rhoda Tumussime, Commissioner, Rural Economy and Agriculture of AU Commission, Food Security and Climate Change Impact at Continental level.
2) Prof. Nuhu Hatibu, CEO, Kilimo Trust, Regional Perspective on Food Security.
3) Prof. L. A. Ogallo Director, IGAD Climate Prediction and Applications Centre (ICPAC), Climate Change Impact in the Region.
4) Prof. Calestous Juma, Harvard Kennedy School, USA, Agricultural Innovation in Africa.

Resource persons' presentations are hereto attached as **Annex IV.**

6.0 DELIBERATIONS ON THE KEY ISSUES FROM PRESENTATIONS

The Heads of State and other participants deliberated on the key issues emerging from presentations under two broad themes of *food security* and *climate change* mindful of the interlinkages between the two themes and other related cross cutting issues and made the following observations:

1. Considering the status of food security in the EAC, a number of key ingredients to enhance efficiency and productivity in the agricultural sector were identified as availability of water, high yielding seeds, fertilizers, pesticides/herbicide, skilled farmers, effective agriculture extension services, effective marketing system reliable infrastructure and related industries. Concerted efforts have to be made to ensure their realization.

2. There is need for adequate financing for investments by private and public sector throughout the region for increased agriculture production.

3. Considering the negative impacts of climate variability and change including the increase in the occurrence and severity of drought and floods, there is a need for an integrated approach in policy formulation and programming for disaster risk reduction and climatic change adaptation and mitigation.

4. Collaborative action over and above individual country efforts and initiatives is pertinent and urgently required to ensure that the developed EAC Food Security Action Plan and the EAC climate change policy are implemented.

5. Food security and climate change strategies and actions need to have in-built gender considerations.

6. Considering the severity of the negative impact of livestock keepers in the arid and semi arid lands; deliberate efforts should be made to address water and animal feed availability.

7. Climate change is a challenge but also an opportunity for sustainable development.

8. There is need for strengthening market access and information service.

9. Wetland and other vulnerable ecosystems in the EAC regions should be sustainably managed.

10. There is need to create innovative university models that link with respective sector industries to foster faster development in the EAC Region.

11. There is need for capacity building in the area of carbon trading in order for the region to take advantage of existing global funding mechanisms.

12. There is need for increasing water harvesting and relevant infrastructure capacities in order to boost irrigation for high agricultural production.

13. The EAC Partner States Agriculture and Livestock research institutes/organizations should be restructured and reconstituted to operate at regional level.

7.0 EAC FOOD SECURITY AND EAC CLIMATE CHANGE POLICY

The EAC Food Security Action Plan (2010-2015) and the EAC Climate Change Policy were endorsed by the Retreat. These documents above lay a foundation for the development of a harmonized approach for enhancement of food security in the East African region. They will also guide Partner States and other stakeholders in the implementation of collective adaptation and mitigation

measures to address Climate Change impacts in the region while assuring sustainable social and economic development.

The EAC Food Security Action Plan (2010-2015) and EAC Climate Change Policy are hereto attached as **Annex V and VI.**

The draft Declaration of the Summit of the EAC Heads of State on Food Security and Climate Change was also presented to the Retreat for consideration. It was decided that it should be instead considered for approval by the 12th Summit on 3rd December, 2010. The draft Declaration is hereto attached as **Annex VII.**

8.0 LAUNCHING OF THE BOOK "NEW HARVEST-AGRICULTURAL INNOVATION IN AFRICA" BY PROF. CALESTOUS JUMA, HARVARD KENNEDY SCHOOL, USA.

The Chairperson of the Summit, H. E. President Jakaya Mrisho Kikwete officially launched the book titled "New Harvest–Agricultural Innovation in Africa" By Prof. Calestous Juma of Harvard Kennedy School, USA published by Oxford.

The book contains case studies from within Africa and success stories from developing nations around the world. It outlines the policies and institutional changes necessary to promote agricultural innovation across the African continent. The book suggests multiple ways that individual African countries can work together at regional level to develop local knowledge and resources, harness technological innovation, encourage entrepreneurship, increase agricultural output, create markets, and improve infrastructure.

The author is a Professor of the Practice of International Development and Director of the Science, Technology, and Globalization project at Harvard University.

9.0 WAY FORWARD

The Chairperson of the Retreat H. E. President Jakaya Mrisho Kikwete thanked all participants for the data and information provided which will assist the Secretariat to prepare a coherent background document and key issues for deliberation during the 12th Summit of Heads of State scheduled for 3rd December, 2010.

Signed on this 2nd day of December, 2010 by the respective Heads of State as below:

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.....

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.....

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.....

H. E. YOWERI KAGUTA MUSEVENI
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.....

Annex I

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Annex II

Presidents' Remarks

EAST AFRICAN COMMUNITY

HEADS OF STATE RETREAT ON FOOD SECURITY AND CLIMATE CHANGE, ARUSHA 2ND DECEMBER 2010

Introductory Remarks

Ngurdoto Mountain Lodge Arusha, Tanzania
2nd December, 2010.

By

Chairperson of the Council of Ministers

EAC SECRETARIAT,
Arusha, Tanzania,
December, 2010

Excellencies,
Honourable Ministers;
Ambassadors;
Permanent Secretaries;
Secretary General, EAC;
Distinguished Delegates,
Ladies and Gentlemen,

First, allow me to take this chance to welcome all of you to Tanzania and Arusha in particular for this important Heads of State Retreat on Food Security and Climate Change. This meeting was conceived by the 11th Ordinary Summit in November 2009 in recognition of the food insecurity facing our region in the wake of a devastating drought which was attributed to climate variability. The impacts of the drought can still be felt especially by the pastoral and farmer communities who respectively lost most of their livestock and crops. Despite the improved rains since last year which have resulted in surplus production in a few pockets within EAC, the region is still not food secure due to other factors including weak systems in post harvest storage, infrastructure and distribution.

Although, the EAC region is frequently affected by food shortages and pockets of hunger, the region as a whole has a huge potential and capacity to produce enough food for consumption and a large surplus for export to the world market. There are many factors leading to this state of affairs but some of the most critical are:

a) High variability in production caused by weather/climate variability which is becoming worse due to climate change;
b) Limited investments in Agriculture; and
c) Inadequate food exchange within Partner States and between Partner States.

Excellencies,
Ladies and Gentlemen,

This Retreat will consider and discuss three documents revolving around food security and climate change. These are "EAC Food Security Action Plan", "The EAC Climate Change Policy" and "Draft Declaration of the Summit of EAC Heads of State on Food Security and Climate Change". In addition, resource persons will make presentation of regional perceptive on food security and climate change impact. The documents mentioned above lay a foundation for the development of a harmonized approach for enhancement of food security in the East African region. They will also guide Partner States and other stakeholders on the implementation of collective measures to address Climate Change in the region which include adaptation and mitigation, while assuring sustainable Social and Economic development.

I would like to take this opportunity to thank the technical teams from the EAC Secretariat and the Partner States for their tireless efforts to develop these documents which outlines in considerable detail what our region needs to do in order to be food secured, and the measures required to cope with the changing climate.

Excellencies,
Ladies and Gentlemen,

I would like to note that this is the first time that the region is discussing these two issues of food security and climate change at this level. This is in recognition of the fact that climate change, if not addressed, can roll back or even undo the painstaking progress we have made on many fronts of our socio-economic development. It is also in recognition that food security is a basic human right. East Africans, therefore, expect momentous decisions which will be followed up by action. This is the task ahead of us, and it is with this understanding that we place great hopes on this Retreat.
I believe the recommendations and decisions reached here today will contribute to taking the EAC to greater heights of achievement, peace, unity as well as social and economic development.

With these remarks, I thank you for your attention and wish to invite the Chairperson of the Summit to address the Retreat.

Thank you.

SPEECH OF HIS EXCELLENCY THE PRESIDENT OF THE REPUBLIC OF BURUNDI DURING THE RETREAT OF EAC HEADS OF STATE ON THE FOOD SECURITY AND CLIMATE CHANGE POLICY

ARUSHA, 2nd DECEMBER 2010

EAC HEADS OF STATE RETREAT ON FOOD SECURITY AND CLIMATE CHANGE,

ARUSHA 2ND DECEMBER 2010

Opening Remarks

By EAC Summit Chairperson H.E Jakaya Mrisho Kikwete.

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1) This retreat was conceived at the 11th Ordinary Summit of EAC heads of State in November 2009 out of grave concern about:

- the insecurity over food and nutrition facing different parts of the EAC region – with some parts faced with perpetual and chronic crisis;
- Climate Change which, not adapted to and mitigated, would make the food insecurity situation worse than it presently is.

2) Heads of State would recall that we directed the EAC Secretariat to come up with :

- *Policy and strategies to address the adverse impact of climate change;* and that,
- *a determination* be made on *how best surplus food in one country can be shared in countries that are worst hit.*

3) This retreat is therefore about primarily finalizing a plan to deal with these two challenges, partly at nation-state level, but importantly at regional level, as EAC. In short, we are here to articulate:

i) A policy that would guide the EAC to act as a block in adapting to climate change in all spheres of economic and social life;

ii) A strategy and action plan to ensure that the EAC region, as a block, attains a higher level of food and nutritional security for its people;

iii) A plan to put to full use achievements so far realized in regional cooperation through the custom union and the common market in dealing with food and nutrition security as well as how to mitigate and adapt to climate change; and

iv) The priorities for regional level actions and a plan for harmonization of such actions at national levels so as to eliminate duplication of efforts and costs.

4) Let me start with **Food Security** because as the Chinese adage goes, *a person without food has only one problem ... while a person who is food secure has many problems*". In other words, a person who is hungry only thinks about where his or her next meal will come from and is thus not able to focus on other aspects of human development. Let me pose a number of relevant scenarios:

a) By 2050, global population is expected to reach 9 billion; much of this growth will take place in China, India and Africa.

b) But, largely because of water scarcity, China and India could see reduction in wheat and rice production by 30-50% by 2050.

c) To meet the food demand of this population, global food production will have to increase by 70-100% from current levels.

d) The US Department of Agriculture ***Report on Hunger Trends, 2010***, records that without improved local agriculture in Sub-Saharan Africa, the number of "food insecure" people, that is those who consume less than 2,100 calories a day, will exceed by 500 million in 2020, about half Africa's population today.

e) Major agricultural producing countries of food grains, like the US, are increasingly using grain, mainly maize, to produce ethanol. In 2009, the US used 30% of its corn to produce ethanol, double the amount used in 2006.

f) Yet, in 2007-2008, global grain resources had declined to their lowest levels in 30 years leading to doubling of prices of most staples.

g) The tragedy is that given current soil technology and climate change as well as environmental impacts and concerns, increased food production can only take place using largely the current amount of arable land. This raises the question: where then would the increased food production come from? The answer seems to be that Africa would be agriculture's "final frontier"!

h) So how does Africa then become the "savior" of what appears to be a global food apocalypse? A number of factors need to be considered:

- Africa itself is in crisis about food. In Maputo, in 2003, it resolved at the African Union Summit to spend 10% of each nation's budget on agriculture. Few of us have done so. Have we in the EAC?

- Africa no longer gets the same level of aid to support its agriculture. ODA for agriculture is down to the 1975 level of US 1.2 billion, compared to US$ 3.4 billion in 1984. As a result, Africa and ourselves in the region have failed to address feeder roads infrastructure to connect production areas to markets. Indeed, Africa has instead been importing food.

- The Global Community seems to be challenged by what is foreboding. At the G 20 meeting last year, there was a pledge for US$ 22 billion for 3 years to support agriculture development in poor countries. We have to wait and see if the commitment will be honoured. In April this year, a Global Agriculture and Food Security Trust Fund was established with support of some rich countries and the Bill Gates Foundation to support agricultural development in Africa. So far, only US$ 880 million has been contributed, too little to have an impact.

-Clearly, Africa will have to take more serious measures to ensure its own food security and think about exports as well. Indeed, we are here to basically exchange views on this particular question. What must we do?

5. I think we need to think along the following ideas:

i) how do we increase irrigation of our agriculture? Presently only 5% of our arable land is irrigated;

ii) for how long shall we resist application of science, notably biotechnology, in our agriculture?

iii) the application of hybrid seeds; these presently account for less than 30% of the maize grown in Africa. Yet they can bolster harvests by as much as 2-4 times.

iv) increasing deployment of fertilisers from present one tenth the level in Asia and Latin America to at least 50% that level.

v) Reduce the current levels of wastage of harvests due to moisture and pests which range from one third to half.

vi) Improving crop markets which presently are incapable of quickly absorbing and distributing food harvests. Can we promote border markets and how do we manage them?

6. In the context of the EAC region, some data may help us to focus better on the challenges we face.

A) UN statistics estimates that, on average, around 37% of the EAC population are affected by poor nutrition and/or chronic hunger;

B) The same statistics show that an average of about 22% of children under the age of 5 are underweight, an indicator of chronic malnutrition;

C) A staggering 52% of all pregnant women in the region suffer from anemia;

D) In the last 10 Years, the EAC Region is reported to have received food aid at an average of 625,000 tons per year, an unacceptable high level of food aid dependency; and

E) The 2010 Global Hunger Index puts the EAC member states between a score of 38 (extremely alarming hunger) - and 15 (serious hunger). Our worst performing member state deteriorated from a score of 32 (in 1990) to 38 (in 2010).

Yet we also know that that our region has a **huge potential and capacity** to produce enough food for consumption and a large surplus for export to the world market. Yes, *we cannot eat potential*, but let me quote a few statistics to elaborate our potential:

i) **Land** – Land suitable for agriculture in the EAC is estimated at 83 million hectares (or 0.6 ha/capita) compared to that of China of only 0.1ha/capita.

ii) **Water** – the EAC is home to several major rivers, and many lakes - including Lake Victoria and Lake Tanganyika which are among the largest lakes in the world.

iii) **Labour** – EAC has one of the most youthful populations in the world, at an average of less than 20 years.

IV) **World Leader** – On the basis of average world prices of commodities, the EAC, taken as a block, would rank as world's:

- ✓ Second (2^{nd}) largest producer of Bananas and plantains combined;
- ✓ Second (2^{nd}) largest producer of sweet potatoes;
- ✓ Fifth (5^{th}) largest producer of Cassava;
- ✓ 10th largest producer of maize - and 2^{nd} in Africa; and
- ✓ 15th largest producer of beef - and 1st in Africa.

v) **With respect to internal market** - if the EAC were a single country it would be the tenth (10^{th}) largest "country" in the world by population.

vi) Often the foods (plantains, sweet potatoes, traditional fruits and vegetables) that we are leaders in producing are **NOT accessed by the hungry.** This is mainly because of uninformed food preferences, and inadequate exchange and trade in perishable food stuffs which is in turn caused by lack of low processing and preservation of such commodities.

7. In this retreat dialogue a number of other questions, therefore, need to be posed. These include:

i) Why is the potential for producing key sources of food and nutrition in the EAC Region

so underutilized at the moment, and what will it take to achieve optimal and environmentally sustainable utilization to produce food commodities and products from all sources including crops, livestock, fishery and marine resources, and forestry systems?

ii) How do we implement the best models to accelerate regional trade in food commodities and products in ways that ensure utilization of our comparative advantage in food production and supply?

iii) How do we structure our food and agricultural production systems with respect to optimizing the combinations of: smallholder vs large scale, crops vs livestock systems, rain fed vs irrigated systems, and production for export vs for local consumption?

iv) How do we balance public support to farm productivity (of which we have made substantial investment already in terms of breeding, agronomy and husbandry improvement, extension, irrigation development, etc) vs support to post-harvest processing and value-addition?

v) What agricultural financing models should we adopt to accelerate local investments and FDIs in food supply and value chain systems – from production to consumption?

vi) What do we need to do to fully exploit the expanding world demand and high prices for food products?

vii) What measures should be taken to enhance the resilience to weather variability and adaptation to Climate Change by our food systems?

Viii) Is population growth an issue in addressing the state of food security in our region?

xi) What should the role of science in agriculture be? Is GMO a taboo ?

x) Why are the potential sources of food and nutrition in the EAC Region so underutilized at the moment, and what will it take to achieve optimal and environmentally sustainable utilization of such potential?

XI) What will it take to move from un-nutritious diets based on a very narrow selection of food types, so that the region can effectively utilize all sources of foods including crops, livestock, fishery, aquatic and marine resources, and forestry systems – to ensure both nutrition and food security?

XII) How do accelerate regional trade in food commodities and products in ways that ensure utilization of comparative advantages in food production and supply?

XIII) How do we structure our food and agricultural production systems with respect to optimizing the combinations of:

- smallholders with large scale farming?

- crops with livestock and fishery systems?
- rain fed with irrigated systems? and
- production for export vs for local consumption?

XIV) How do we balance our public sector investments (in research, training, extension, inputs supply and rural finance) between:

a) Enhancing farm productivity and production of commodities; and

b) Supporting the development of a thriving sector in postharvest processing, value-addition, and structured trade in food products?

XV) What agricultural financing models would accelerate local investments and FDIs into food value chains?

XVI) What do we need to do, to fully exploit the expanding world demand and high prices for food, feed and fibre commodities and products?

XVII) What measures should we take to enhance the resilience of our food systems to weather variability and Climate Change?

With respect to the agenda of this retreat on **adaptation to Climate Change** in the EAC Region it should be noted thatthe predicted magnitude of Climate Change will have far-reaching impacts on most aspects of our social, economic, and environmental systems. For example, it is predicted that:

a) Increased variability of weather and extreme events especially with respect to water will significantly disrupt agricultural production and food supplies;

b) Extreme events especially of floods and droughts will cause huge damages to infrastructure, loss of productive assets, and stagnation of economic growth;

c) Poor sanitation will become even worse leading to increased disease epidemics and mortalities; and

d) Degradation of land and other natural resources will be accelerated.

However, we must also note that not all impacts will be negative and that the adaptation strategies need to focus on both the enhancing of resilience to negative ones, as well as exploitation of any positive opportunities arising from Climate Change. Therefore, there is no doubt that adaptation to climate change should be mainstreamed in all our policies and strategies- social, economic or security. However, we should all be concerned that this is not yet the case.

The main reasons for the little progress in adaptation to Climate Change in the EAC include but are not limited to the following:

a) Inadequate understanding of the sensitivity of our development and economic growth agenda to weather variability and climate change;

b) Which leads to: (i) lack of attention to building resilience to extreme climate events into our economic and social systems, and (ii) poor climate risk management; and

c) Both these challenges are caused by low capabilities in the effective use of climate information by our various institutions.

Therefore, at this retreat, we should agree on a policy and strategy for regional collaboration to cost-effectively implement harmonized and coordinated measures of adaptation to climate change.

We should debate and explore answers to the following key questions:

a) How can we build and share the necessary capacities to support public institutions, the private sector, and individuals to MAINSTREAM ADAPTATION to Climate Change in policy making and planning?

b) What kind of a regional framework is needed for building a credible database of climate information, and robust models to support regional, national and institutional efforts on adaptation to climate change?

c) What levels of resources are required to ensure that adaptation to climate change is mainstreamed, and how do we mobilize and manage such resources?

Thank You for your attention. Let us begin the dialogue.

OPENING REMARKS BY H.E. JAKAYA MRISHO KIKWETE, PRESIDENT OF THE UNITED REPUBLIC OF TANZANIA
AND CHAIRPERSON OF THE SUMMIT OF EAC HEADS OF STATE AT THE EAC HEADS OF STATE RETREAT ON
FOOD SECURITY AND CLIMATE CHANGE, NGURDOTO MOUNTAIN RESORT, ARUSHA, 2 DECEMBER, 2010

Excellencies;
Ladies and Gentlemen;

Allow me to begin by welcoming you to Tanzania and in Arusha in particular and to this important retreat of ours, on food security and climate change. Our participation is a clear testimony of the importance we personally, and our respective governments attach to these overarching issues.

During our last ordinary Summit, it became evident that our region needs to have a serious discussion on food security and climate change. Both are important matters of concern to all of us. We have to ensure a sustainable food security situation in our countries. Currently this is not the case. Agricultural productivity and production is in fact too low. Our agriculture is predominantly peasant and remains backward in terms of use of modern techniques and methods of agricultural productions. There is limited use of high yielding seeds, fertilizers, herbicides and pesticides. Moreover, our agriculture is overly dependent on rains and these days availability of rain has become very unreliable. Weather patterns seem to have become less predictable these days. Experience has shown that our region has been experiencing frequent and long periods of drought in recent years and serious problems of post harvest loses. Shortage of food in many parts of East Africa therefore, has become a recurrent problem.

This factor is very much a function of the effects of climate change. That is why it is very opportune, indeed, that we are today discussing food security and issues related to climate change. They are very much related and inseparable. There are today, threats of food security because of climate change. There are problems of climate change partly because of agriculture. We need to address both issues to ensure food security and sound environmental sustainability.

In addressing the challenge of food security and climate change facing our region, we need to look into finding the appropriate solutions. We need to explore how best to increase food production to meet our increasing demand as our population grows; how to address the ever-changing weather patterns; and how to minimize agricultural related activities that are destructive to the environment while maximizing its potential to mitigate climate change. We need to come up with a clear regional policy and implementable action plan that will halt and

reverse the current human actions that are destructive to the environment thereby, enhancing food security in our Region.

Excellencies, Ladies and Gentlemen;

It is my hope that we shall also use today's retreat to explore ways and means of making our Region the "saviour" of what appears to be the global food apocalypse. The question that begs answers is: Can the East African Community countries take a pro-active role to become food self sufficient and a food warehouse for the whole of Africa? I believe we can. Let us put our act together. Let this retreat be the beginning of that steady march towards that noble goal.

Clearly, Africa including the EAC region will have to take more appropriate measures to ensure its own food security and think seriously about food exports as well. We are here to basically exchange views on how to achieve these dual objectives.

We need to consider how to increase irrigation in our agricultural production. Currently only 5% of our arable land is irrigated; we need to do more. We need to ask ourselves about how to leverage modern science and technology to increase food production in our respective countries and the region as a whole.

Our discussions should also be mindful of the fact that Africa no longer gets the same level of aid to support its agriculture. ODA to agriculture in Africa is down to the 1975 level of **US$ 1.2 billion**, compared to **US$ 3.4 billion** in 1984. To make matters worse, even our national budgetary allocation to agriculture does not reflect the importance of the sector to our countries. We need to seriously consider the Lagos Plan of Action of ensuring that at least **10 percent** of our national budgetary allocation goes to agriculture.

Excellencies, Ladies and Gentlemen;

Let me conclude my remarks by posing a number of questions that we should reflect upon in our retreat:

- Why is the potential for producing key sources of food and nutrition in the EAC Region so underutilized at the moment?
- What will it take to achieve optimal and environmentally sustainable land utilization to produce food and food products from all sources including crops, livestock, fishery and marine resources, and forestry resources?
- How do we implement the best models to accelerate regional trade in food commodities and products in ways that ensure utilization of comparative advantage in food production and supply?
- How can we structure our food and agricultural production systems with respect to optimizing the combinations of: smallholder vs large scale, crops vs livestock systems, rain fed vs. irrigated systems and production for export vs. for local consumption?
- What agricultural financing models should we adopt to accelerate local investments and FDIs in food supply and value chain systems – from production to consumption?

- What measures should we adopt to enhance the resilience to weather variability and adaptation to climate change by our agricultural-systems?
- How do we improve crop markets which presently are imperfect and inefficient to absorb and distribute food harvest?

Excellencies, Ladies and Gentlemen;

Let us avail ourselves of this opportunity for fruitful discussions and deliberations for the benefit of our East African Community Region.

After those few remarks, I declare the retreat open, and thank you for listening.

STATEMENT BY H.E. MWAI KIBAKI, CGH, MP, PRESIDENT OF THE REPUBLIC OF KENYA DURING THE EAST AFRICAN COMMUNITY HEADS OF STATE SUMMIT ON FOOD SECURITY AND CLIMATE CHANGE, 2ND DECEMBER, 2010 IN ARUSHA, TANZANIA

Your Excellency, Jakaya Mrisho Kikwete,

Your Excellencies,

Distinguished Guests,

Ladies and Gentlemen,

May I take this early opportunity to thank the Government and people of the United Republic of Tanzania for the warm welcome and hospitality that has been extended to my delegation and I since our arrival in Arusha. I also wish to congratulate my brothers, President Kikwete, President Kagame and President Nkurunziza on their recent re-election.

Food security and climate change are critical concerns facing our region and the world as a whole.The changing ecological and hydrological patterns have adversely effected our agricultural production, water resource management, power generation, livestock and wildlife productivity.

This retreat could therefore not have come at a better time.It is my sincere hope that we will be able to come up with proactive and decisive action plans to deal with the effects of climate change and attain food security for our region.

Excellencies, Our region is endowed with a huge potential and capacity to produce adequate food for local consumption and for export.

However, the uneven distribution of production endowments has resulted in surplus production in some areas and deficiencies in other parts of our region.

We therefore need to make concerted efforts to facilitate the movement of food from surplus areas to deficit regions.

The free flow of agricultural produce across member states will have immense benefits to us all. Producers will stand to benefit from the enlarged market and consumers will have adequate supply of the commodities.

I therefore appeal for faster harmonization of the East African staple foods standards to facilitate trade.

As we encourage the free trading of agricultural commodities, we must however guard against speculators who may seek to manipulate our markets for their own individual benefit. Food is a basic human right and its availability must not be at the will of a few individuals but through strategic interventions and joint efforts by our governments.

Excellencies,

I wish to briefly share with you some of Kenya's experiences in addressing food security and steps taken to mitigate the effects of climate change.

As a government we have promoted the following programmes:

1. Effective and consistent land management practices and wide scale water harvesting;
2. Conservation agricultural technology to improve crop performance and maximize the contribution of agriculture to the fight against climate change;
3. Farm Forestry to improve tree cover crop, increase carbon storage capacity and enhance agricultural productivity;
4. Development of drought tolerant crops and early maturing crop varieties;

6. **D**evelopment of aquaculture by construction of fishponds at countrywide;
7. **L**ivestock programmes geared towards harvesting and storage of fodder as well as development of special livestock insurance schemes;
8. **U**se of alternative sources of energy such as geothermal, solar, wind and bio-fuel energy.

Although we have attained considerable progress with these interventions, more work remains to be done and we intend to build on the success achieved so far.

Your Excellencies,

Climate change cannot be addressed by a single nation. **W**e must lay emphasis on a regional approach since whatever happens in our individual nations affects the entire region.

This means that we must act both individually and collectively, especially in instituting effective and sufficient measures towards mitigation against the adverse effects of climate change.

In conclusion, I would like to reiterate that my government is committed to regional initiatives to implement the **East African Community** F ood Security Action Plan and Climate Change Policy.

I also affirm our commitment to making operational the East African Climate Change Fund.

Finally, I call upon East African Community member states to remove any impediments to the free flow of agricultural produce in our region since enormous benefits will accrue to both producers and consumers.

It is my hope that together, we can effectively manage and control the effects of climate change as well as ensure the production and provision of sufficient, safe and nutritious food for our citizens. **T**he time to act is now.

Thank you and God bless you.

STATEMENT BY HON. SAM KUTESA, MINISTER OF FOREIGN AFFAIRS ON BEHALF OF H.E. THE PRESIDENT OF THE REPUBLIC OF UGANDA AT THE FOOD SECURITY AND CLIMATE CHANGE RETREAT AT NGURDOTO MOUNTAIN LODGE, ARUSHA, UNITED REPUBLIC OF TANZANIA. 2ND DECEMBER, 2010.

H. E. Jakaya Mrisho Kikwete and Chairman of EAC Summit
President of the United Republic of Tanzania

H. E. Mwai Kibaki
President of the Republic of Kenya

H.E. Pierre Nkurunziza
President of the Republic of Burundi

Rt. Hon. Bernard Makuza
Prime Minister of the Republic of Rwanda

Secretary General,
East African Community

Distinguished Invited Guests, Ladies and gentlemen

On behalf of H. E. President Yoweri Kaguta Museveni of the Republic of Uganda, I wish to thank the President, Government and the people of the United Republic of Tanzania for hosting us at this very important retreat.

Your Excellencies,

I wish also to join those who have spoken before me in congratulating your excellence president Jakaya Kikwete upon your victory in the just concluded general elections.
May I also inform you of H.E President Yoweri Museveni's Inability to be with you today, due to unavoidable circumstances. He will however be joining you for the summit tomorrow. The President wishes you fruitful deliberations.

Your Excellencies,

The theme of this retreat is relevant and timely not only to us in East Africa, but the world as a whole as it is coinciding with the World Climate Change Conference in Cancun, Mexico.

Severe changes in Climate affect a number of sectors which sectors are a backbone of those countries economies especially in the developing world.

In Uganda, Agriculture accounts for 75% of employment, 46% of export earnings and 23% of GDP. Therefore, because of the importance of this sector, extreme climatic changes lead to negative impacts on the economies, and impact on the livelihood of the people.

Because of Climate change Uganda is increasingly, experiencing land slides in the highland areas, the most recent example being the catastrophic landslides that displaced 5,800 people and caused 350 deaths in the Mountain Elgon region of Eastern Uganda.

In the cattle corridor which runs from the western to the north eastern Uganda, extended dry periods have had devastating impacts on livestock and crops resulting in conflicts displacements and cross border raids.

Africa as you very well know your Excellencies is not the main contributor to these negative effects of climate change. The industrialized nations being the main polluters of the environment have played a major role in climate change. Our renewed engagement in the United Nations Climate Change negotiations at the Copenhagen meeting and the on-going meeting at Cancun in Mexico, should therefore focus on what we can get as developing countries to mitigate these negative effects. This would include transfer of technology for cleaner and sustainable energy.

Your Excellencies, as we deliberate on matters of Food Security and Climate change in this retreat, as a region we should identify critical roles that we on our part need to singularly and collectively address food security and climate change effects.

Such roles should aim at large scale as well as medium and small scale interventions, including but not limited to the following:

1. **Sustainable Utilization and Management of Natural Resources: for example,**
   - Prioritizing the conservation measures aimed at protecting water towers and other fragile ecosystems.
   - Use of cost effective alternative energy sources such as biogas, geothermal and wind energy.
   - Rural electrification through generation of more hydro-electric power to ease pressure on wood fuel as a main source of energy.
   - Massive sensitization programmes to empower local communities, business concerns, Industrial establishments and Local Governments to promote use of clean energy, environmental conservation and efficient waste management systems.

2. **Water conservation:**
   Development of water conservation measures aimed at water harvesting for irrigation, fisheries and water for production; common management practices to protect the water bodies especially the shared ones.
3. **Research and Development:**
   Guided research has the potential to improve production and productivity by breeding drought resistant crop varieties and high yielding cultivars.
4. **Agro-processing and value addition to improve prices, promote exports and create employment.** This would also require the development of marketing infrastructure that could promote better food distribution.

In conclusion Your Excellencies,

Uganda is committed and will support a regional approach to address issues of Food Security and Climate change.
As we seek external funding, the region needs to mobilize its own resources aimed at mitigating climate change effects.
We need to focus on capacity building to enhance indigenous technical knowledge. It may be necessary to enact legislation that can create a regional carbon trading system. EAC member states will require to harmonize their policies and approach to conform to the regional agenda on food security and climate change. It is important to create capacity at the EAC Secretariat and other EAC institutions to initiate, coordinate and follow up activities for the implementation of this Policy on climate change.

Uganda welcomes this initiative of a regional approach to address food security and climate change effects and wish to emphasize the fact that singularly no country can make it alone. I thank you for your kind attention.

Speech by Rt. Hon. Bernard MAKUZA, Prime Minister of the Republic of Rwanda during the Retreat of EAC Heads of States on Food Security and Climate Change 2nd December 2010, Arusha, Tanzania

Excellencies, Heads of State

Honourable Ministers

Heads of organs and institutions of our Community

Distinguished invited dignitaries

Ladies and Gentlemen

On behalf of His Excellence, President Paul KAGAME who would have wished to participate in this important forum but due to unavoidable circumstances, he was unable to attend; allow me to begin by congratulating His Excellence President Jakaya Mrisho Kikwete for being accorded the second term in office to lead all Tanzanians. I would like to use the opportunity to sincerely thank H.E, President Jakaya Mrisho KIKWETE for the visionary leadership by which he chaired the Community. A special vote of thanks should go to him, the Government and People of Tanzania for their hospitality at this Retreat.

I would like also to seize the occasion to congratulate His Excellency President Pierre NKURUNZIZA for the tenure he was

accorded by the people of Burundi to lead them in the next term of 5 years.

I would also wish to congratulate him for being nominated to lead the Community for the coming chairmanship and let my heartfelt impression be expressed in Kiswahili, nakutakia heri na fanaka.

I cannot forget to congratulate His Excellency President Mwai KIBAKI and the people of Kenya for the successful referendum on the new constitution.

Excellencies,
Distinguished invited dignitaries,
Ladies and Gentlemen

The Treaty for the establishment of East African Community call upon Partner States to undertake measures that aimed at promoting and enhancing the complementarity and sustainability in agricultural and food security programs. To this effect, the Partner States are requested to adopt common policies and tangible actions to develop the food security for our people ensuring an adequate food supply at the national level but also seeking means of securing other Partner States that are drought and insecure to meet the needs of their citizens.

As you may be aware, the agricultural sector in Rwanda contributes 31% to GDP, employs 80% of the population and contributes to 70% of the county's exports. The sector is essential for the GDP growth as it impacts directly on economic growth, improves trade balances, reduces poverty and ensures food security.

Since 2007, Rwanda embarked on a crop intensification program and at that time 18 out of 30 districts were food insecure but now in 2010, we are registering achievements because all the 30 districts attained food security (1200 – 3000 Kcal/person).

To achieve the agricultural improvement, a number of policies were envisaged by the Government. Those policies include among other things:

- Land consolidation, increasing farmer's access to inputs mainly fertilizers and seeds that ensure higher crop yields;
- Addressing soil erosion through terracing and agro-forestry;
- Addressing the family nutrition security through increasing livestock ownership by distributing one cow to a poor family that provides milk and organic manure that increases soil fertility and crop production as well as promotion of small ruminants and kitchen gardens. In addition to a school feeding program that addresses malnutrition among school

going children, the Government of Rwanda introduced one cup of milk per child;

- Improving research and extension in agriculture by developing high producing crop varieties and restructuring extension services to address farmer's needs;
- Market development both domestic and regional.

By adopting the above, Rwanda has recorded tremendous progress in food security. In the areas where crop intensification is done, fertilizer use has increased from 4 kg/ha to 19.9 kg/ha and the number of households using fertilizers increased from 25 to 44%. By availing fertilizers to the farming communities a demand to use them among the poorest farmers has increased.

However, Climate change is a global environmental challenge of the 21st Century and all countries are now experiencing adverse impacts of Climate Change and EAC region is not exempted.
We have witnessed in the last 10 years that the climate change in our region has increasingly impacted on our life:

- Temperature increased with high frequency of warm days exceeding 30°C;
- The number of annual raindays decreased and this is likely to impact negatively on agricultural productivity;

- At the same time the frequency of torrential rain increased with daily rainfall quantity sometimes exceeding the total monthly rainfall; this is natural disasters caused by floods including soil erosion;
- The number of dryspells during rainy season increased affecting poor performance of crops and ;
- We observed late onset of rainfall and/or early rainfall cessation during rainy season and this also affect poor performance of agriculture productivity.

The adverse impacts of Climate Change are a threat to the livelihoods of people in almost all sectors of the economy in our region.

Indeed, the Climate change is a challenge, but also an opportunity to sustainable agriculture practice. Investment in Early Warning System links with meteorological forecasting, improvement of rational marshland development and hillside irrigation as well as climate change proofing for enhanced food security.

In order to sustain the food security and tackle the Climate change impact, there is a need to ensure investments in sustainable agriculture production systems with particular focus on Climate change adaptation. For lasting solution, there is a

Your Excellency JAKAYA MRISHO KIKWETE, President of the United Republic of TANZANIA

Your Excellency MWAI KIBAKI, President of the Republic of KENYA

Right Honorable Bernard Prime Minister oof the Republic of Rwanda

Honorable Ministers,

Honorable Members of the EALA,

Secretary General of the East African Community,

Deputy Secretaries General

Distinguished Delegates from Partner States,

EAC Secretariat Staff,

Ladies and Gentlemen.

1. First of all, allow me to take this opportunity to thank God the Almighty who has guided all of us to this important Summit on the Food Security and Climate Change Policy,

2. As we are all aware, climate change has an impact on land, water and biodiversity.

3. We are all affected by climate change, but the poorest regions are already the first victims. The consequences of climate change in Africa, for example, could be dramatic for this continent, which will reach two billion people over the next forty years.

4. Allow me to build on the Millennium Development Goals (MDG), the World Development Report 2010 and the conclusions of the HAGUE Conference on agriculture, food Security and Climate Change, to make the following observations:

4.1 The world population in 2050 will reach 9 billion people; Africa alone counting 1 billion.

4.2 Within our Community, the annual population growth is about 3 percent, while the average GDP growth is about 5%.

4.3 Although this situation is encouraging, our populations are still facing famine and hunger, some dying as a result of these phenomena.

4.4 We feel there is a need to deal with this situation by adopting a strong regional policy, in order to achieve the Millennium Development Goals, namely by eradicating poverty, increasing food production and addressing Climate Change impacts on food security and our social and economic dvelopment.

Your Excellencies,

Distinguished delegates,

Ladies and Gentlemen

5. Seventy five percent of the world's poor are living in rural areas, and most are involved in farming in the broader sense of the expression, comprising crops, forestry, livestock, fisheries, aquaculture biomass and agro industries.

6. Growth in agriculture remains a backbone for poverty alleviation. However, it is under threat from climate change, increased floods, droughts and temperatures.

7. The World Development Report 2010 estimated that climate chnage may increase the number of undernourished people in 2050 by up to 170 millions, because it directly affects growth and teh distribution of income.

8. Therefore, success will require a comprehensive approach of technical, instituitonal and financial innovations.

Your Excellencies,

Distinguished delegates,

Ladies and Gentlemen

9. As fasr as Burundi is concerned in efforts aimed to prevent climate change and ensure food security, we arre personally engaged in agricultural and livestock development, covering hills with trees and restoring natural forests destroyed during teh dark times of political turmoil and war. We do believe in the program and we are determined to achieve these objectives, namely food security and a sustainable socio-economic development.

Long Live Cooperation among Partner States

Long Live the people of East Africa,

May God bless you,

Thank you very much

MURAKOZE CANE

Asanteni sana.

Annex III

Partner States Presentations

The United Republic of Tanzania

The Current Situation on Food Security and Measures to Address Climate Change Impacts in Tanzania

A Country Presentation

Prepared by

Vice President's Office & Ministry of Agriculture
Food Security and Cooperatives

for EAC Heads of State Retreat on Food Security and Climate Change

At
Ngurdoto Mountain Lodge Arusha, Tanzania
2nd December, 2010

Outline of the Presentation

- Introduction
- Agriculture, food security and climate change
- Relationship between food security and Climate Change
- Impacts of climate change
- Current situation on food security
- Vulnerability
- Measure to address adverse climate change impacts
- Future Concerns
- Conclusion

1. Introduction

- Climate Change (CC) is real and there is evidence that the country's food security is negatively impacted upon
- There are two important distinctions that can be made in the definition of climate change:

1. *Under the United Nations Framework Convention on Climate Change (UNFCCC)*, climate change means a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere.

Introduction Cont'd

- 2. *Under the Intergovernmental Panel on Climate Change (IPCC)*, climate change refers to both natural climate variability as well as human or anthropogenic induced climate change

Introduction Cont'd

- **Food security:**
  State whereby all people at all time ***(sustainability of supply)***, have ***access*** to **sufficient (availability)**, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life ***(Utilization)*** (FAO 2002).
- On the other hand food insecurity exists when people are ***undernourished*** as a result of the ***physical unavailability*** of food, their ***lack of social or economic access*** to adequate food and/or ***inadequate food consumption and/or utilisation***. Therefore, food availability, accessibility, utilisation and sustainability of supply constitute a necessary condition for food security.

2. Agriculture and food security and climate nexus

- Agriculture forms an integral part of Tanzania's economy, at both macro- and micro-economic levels. Whereas food security is dependent on agriculture, the sector is the nexus where food security and climate meet. Thus the importance of the agricultural sector to the economy is portrayed by the following:
  - It contributes about 26.5 percent of GDP
  - It employs more than 70 percent of the labour force;
  - It provides more than 95 percent of food requirement,
  - It contributes about 14.5 percent (USD. 290. million) of export earnings

Food security and climate nexus cont'd

- It supplies raw materials to manufacturing sector e.g. textiles, food processing, etc.
- Over the past decade, the agricultural sector grew at an average of 4.4%. The rate of growth in agriculture is higher than the average annual population growth rate of 2.9% implying growth in incomes.
- On average, crop production contributed about 19.0% of GDP and grew at 4.1% while livestock production contributed about 5.9% of the GDP and grew by 4.3%.
- Any negative effect to the agricultural sector implies detriment to the economy and livelihoods of the majority of the population

Food security and climate nexus cont'd

- In Tanzania, the agricultural sector, which offers livelihoods to more that 80 percent of the population and is the mainstay of the economy. The sector is highly vulnerable to weather sensitivity and environmental changes and ranks top in the list of sectors vulnerable to climate change.
- The sector's structure of production is highly dominated by subsistence producers who have limited entitlements and limited resources to develop mitigation strategies. As such, production (crops,livestock,fisheries) failure due to the impacts of climate change among other factors contribute to food insecurity .

3.Relationship between food security and CC

- Most scientists agree that climate change impacts on food security in recent decades have primarily and increasingly been caused by human activities, whereas Industrialized countries contribute much of the green house gases blamed for accelerating climate change
- On the other hand Developing countries such as Tanzania with majority of their populations depending on natural resources though contributing insignificantly to climate change suffer serious consequences of climate change impacts

Food security and CC cont'd

- Climate Change impacts negatively on sectors related to food security including Agriculture (crop production), livestock, water, Fisheries, health and infrastructure.
- Effects on food security through impacts on these sub sectors is evident through:
  - Increases in extreme weather variability events such as droughts coupled with poor distribution of rainfall affecting, water sources, production of food and other crops and land resources as soil moisture and nutrients are depleted

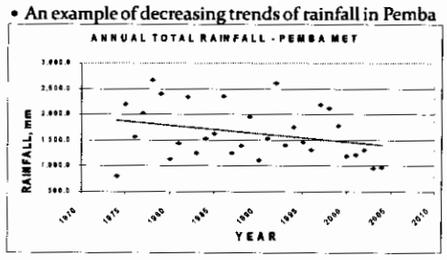
Food security and CC cont'd

- Similarly floods which affects crop yields leading to **reduced food production** and ***availability***
- The residual effects of floods often leads to loss or destruction of infrastructure such as roads, railways and bridges.
- The effect on infrastructure in turn affects transportation/food distribution leading to food shortage in deficit areas and **higher food prices** thereby adversely affecting ***food access*** particularly to market dependent resource weak households.

Climate change has been observed to impact on the entire spectrum of the four pillars of food security.

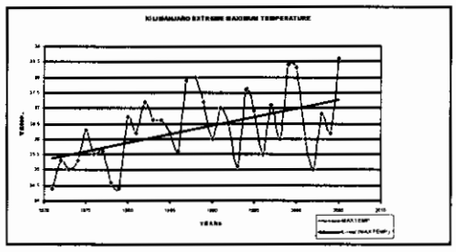
4. Impacts of Climate Change in Tanzania

- Impacts of climate change in Tanzania are already vivid
  - National Adaptation Programme of Action -NAPA (2007) revealed decreasing trends of rainfall in many parts of Tanzania for the past 30yrs:
  - An example of decreasing trends of rainfall in Pemba



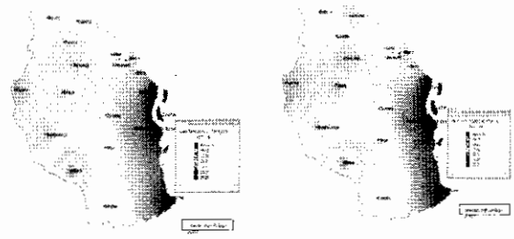
Impacts cont....

- An example of increasing trends of temperature in Kilimanjaro

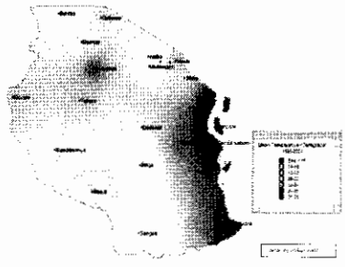


Temperature trends

Mean Temp 1975 - 1984 Mean Temp 1985 - 1994

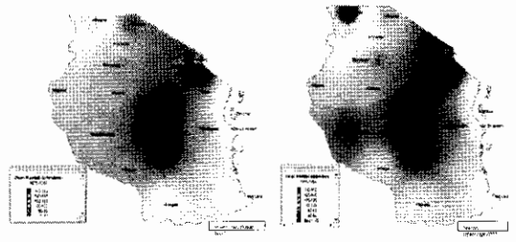


Temp trends 1995 - 2004

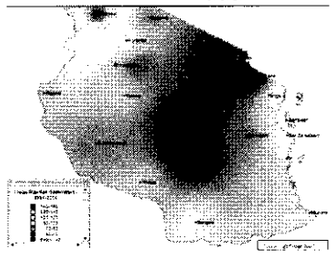


Rainfall trends (for the past 30yrs)

Mean Rainfall trend 1975 - 1984 Mean Rainfall trend 1985 - 1994

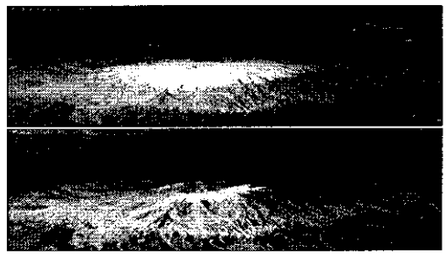


Rainfall trend 1995 - 2004



Impacts cont....

Receding of Mt Kilimanjaro glaciers (80% of the glacier on Mount Kilimanjaro has been lost since 1912 todate. It is projected that the entire glacier will be gone by 2025.



Impacts cont...

- Drop in water levels in major lakes like L. Victoria, L. Tanganyika and L. Jipe
- Frequent and severe droughts in some parts of the country
- Increasing cases of highland malaria
- Increasing plant and livestock pests and diseases
- Dramatic recession of 7km of Lake Rukwa in about 50 years
- Intrusion of sea water in fresh water wells in some coastal area
- Inundation of small islands (Maziwe, Tanga, and Fungu la Nyani on Rufiji delta)

Impacts cont...

- Beach erosion in Dar es salaam, (Threatening infrastructures along the coast)

Impacts cont...

- Climate change will further enhance the negative impacts on crop yields through;

- Frequent crop failures, reduced yields due droughts and poor rainfall distribution putting food security at stake)

Impacts cont...

Maize in Mfumbi ward, Ikoa division, Makete District in Iringa .... Problems attributed to late onset and early cessation of rainfall.

Impacts cont...

- Massive livestock deaths due to droughts as recent as 2009 in Ngorongoro and Longido Arusha Region aggravating food insecurity.

Impacts cont...

Massive livestock deaths due to frequent droughts

Impacts cont...

Floods due to excessive rains destroy homes and infrastructure such as railways, roads, bridges limiting connectivity and food distribution (e.g recent floods in Kilosa, Morogoro Region) fuelling increase in food prices in areas with inadequate food supplies

Decreasi[illegible] drinking water temperatur[illegible] 30% decrease)

5. Current situation on food security

- In recent years extreme weather related events such as ***droughts, floods and landslides*** have been observed to be increasingly and negatively impacting the food security and livelihoods of a significant proportion of natural resources dependent population in the country.
- In addition to other factors, observations and evidence points to climate change as significantly contributing to and exacerbating food crises.
- In most cases the food crises have gone beyond the ability of vulnerable local communities and as such the Government has had to intervene with food assistance and other supports to sustain livelihoods and enable them cope with impacts of climate change.

Food Security Situation cont'd

- In an average year, food production is normally satisfactory at the national level, but it fluctuates between years of surplus in good seasons and years of deficit in poor rainfall seasons. Some regions and districts have food surpluses of varying magnitude on an annual basis.
- However, there are regions and districts with pockets of persistent food shortage annually. Moreover, at the lower levels, such as the household, efforts by Government and others to support increased agricultural productivity and production not withstanding, food insecurity continues to be a challenge to some section of the population in both rural and urban areas.
- Even in times when food availability is deemed satisfactory, food access is still a challenge to rural households that produce less than 30 percent of their annual requirements due to among other things rudimentary production tools and agricultural technologies and climate change.

State of food Security in Tanzania

- Nutrition deficiency is common in about 37 percent of the population reflecting inappropriate dietary intake, diversification and food utilization in general. Surveys carried out during vulnerability assessments have shown that nutrition related disorders are more prevalent in districts with chronic food insecurity.
- Poverty particularly among both the rural population without a good asset base and urban low income segment affects food access particularly in times of food shortage as partly or wholly the food needs have to be met through the market. In such times high food prices are common and limit the ability of such households to access food.

Food Security Situation cont'd

Over the past 20 years, monitoring reports from the Ministry of Agriculture have shown that overall food production has been increasing over time. However,:

- Food status measured by **Self Sufficiency Ratio - SSR** *(the extent to which locally produced food meets annual requirements)* has continued to stagger between 88% and 112%. This is mainly due to decline in cereal production and productivity. In the last 5 years SSR has just been a little over 100%.
- **Cereals production** has staggered around 75-95% of requirements implying a **cereal deficit** of between 375,000 and 875,000 tonnes. During 2009/2010, cereal supply stood at 79% implying a deficit of 1,348,445 tonnes.
- **Currently in 2010/11**, Approximately 50% of national food crop production is composed of cereals and 30% is maize the normally drought prone crop.

Food Security Situation cont'd

Food Security and Agroecological Zones Of Tanzania

There are 7 main Agroecological Zones (AEZs) in Tanzania, namely:

1. Coastal Land and Islands
2. Arid Lands
3. Semi-arid lands
4. Plateau
5. Southern and Western Highlands
6. Northern Highlands
7. Alluvial Plains

The effect of climate change on crop production has varied according to AEZ and in some cases shifts have occurred in some crops in correspondence with AEZ characteristics.

The AEZs and crop suitability as well as food security performance are as per maps hereunder.

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Food Security Situation cont'd

Map 1: The Distribution ofAEZ of Tanzania

Recent vulnerability assessments establish that the main activities in all agro-ecological zones by ranking are Agriculture (70%), trade (9%), employment (8%), Livestock keeping (5%) and others (6%) (URT, 2007).

The arid and semi-arid AEZs are mainly in Central and North eastern zones where vulnerability to insecurity is also rampant.

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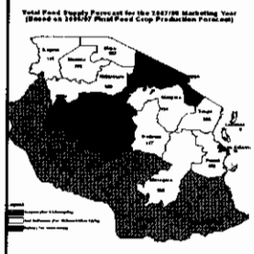
Food Security Situation cont'd

Map 2: Food Production in Tanzania, 2006/07



The map shows SSR distribution reflecting variation in regional adequacy of food crop production in Tanzania in 2007/08 when NAPA was being finalized

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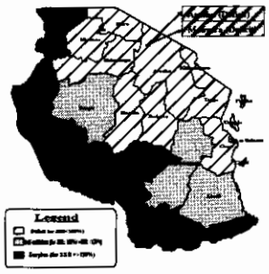
Food Security Situation cont'd

Map 3: Food Production in Tanzania, 2008/09



The map shows SSR distribution reflecting variation in regional adequacy of food crop production in Tanzania in 2008/09.

In general there has been a decline in food crop production particularly in arid and semi arid areas.

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Food Security Situation cont'd

- The country is vulnerable to the impacts of climate change because of its dependency on agriculture and more specifically rainfed.
- Observations made in various surveys and assessments show that there is a persistent decline in productivity of crops and livestock due to recurrent droughts.
- A recent climate change study by the Ministry of Agriculture Food Security and Cooperatives in collaboration with The Institute of Resource Assessment of the University of Dar es Salaam and the Office of the Vice President observed that generally, there is a decline in crop productivity in assessed areas partly due to climate impact and partly due to other factors.

Food Security Situation cont'd

Tanzania Maize Production- 1990/91 to 2008/2009 observed yield declining overtime, while area and production increased

Tanzania Maize Production - 1990/91 to 2008/2009

Year	Area (Ha)	Yield (T/Ha)	Production (T)
MinV	1,498,334	0.9	1,831,236
MaxV	3,001,337	1.7	3,555,833
rate/year	82,900	-0.02	72,566

•Over the period yield declined at a rate of 0.02 T/Ha per year with a minimum and a maximum reached been of 0.9 T/Ha and 1.7 T/Ha respectively.

•Nevertheless as a matter of life and death regardless of drudgery involved in the use of poor farming tools, crop area grew at a rate of 82,900 Ha per year with a minimum and a maximum reached being 1,498,334 Ha and 3,001,337 Ha respectively

•Accordingly, the compensatory effect of rigorous area expansion on maize fields observed increase in maize production which grew at a rate of 72,566 Ha per year with a minimum and a maximum reached being 1,831,236 Tonnes and 3,555,833 Tonnes respectively

Food Security Situation cont'd

Tanzania Maize Production - 1990/91 to 2008/2009

Year	Area (Ha)	Yield (T/Ha)	Production (T)
1990/91	[redacted]	1.5	2,270,500
1991/92	1,908,483	1.2	2,290,180
1992/93	1,581,790	1.4	2,282,150
1993/94	1,628,943	1.4	2,214,559
1994/95	1,653,600	1.6	2,566,600
1995/96	1,652,900	1.6	2,662,700
1996/97	1,564,036	1.2	[redacted]
1997/98	2,088,033	1.2	2,600,484
1998/99	1,764,567	1.4	2,451,766
1999/2000	1,870,384	1.1	2,009,320
2000/01	1,515,160	1.7	2,578,562
2001/02	1,587,766	1.7	2,704,849
2002/03	2,594,793	[redacted]	2,321,951
2003/04	2,954,952	1.1	3,232,400
2004/05	3,001,337	1.1	3,218,540
2005/06	2,570,147	1.3	3,423,025
2006/07	2,600,341	1.3	3,302,058
2007/08	2,848,449	1.2	3,555,833
2008/09	2,961,334	1.1	3,326,200
MinV	1,498,334	0.9	1,831,236
MaxV	3,001,337	1.7	3,555,833
rate/year	82,900	-0.02	72,566

Food Security Situation Cont'd

- Moreover, rising incidence of undesirable plant species (e.g. Striga spp) and insect pests (e.g. Prostephanus truncatus, and Bemisia tabacci) and mole rats affecting crops have been largely attributed to climate change. These cause increased use of agrochemicals to deal with and therefore increased costs of production.
- Even in areas where rainfall seasons used to be reliable, the effects of climate change are also impacting upon crop production signifying that interventions in terms of technical, public awareness and resources are needed so as to enhance food production and food security and sustainable livelihoods for social economic development.

6. Vulnerability to food insecurity

- In the last 10 years, food deficit regions and districts with vulnerable areas have ranged between 4 to 14 and 21 to 62 respectively.
- On average 37 districts in central and northern parts of the country are repeatedly mainly vulnerable to drought and/or floods inevitably attracting substantial intervention from Government and other stakeholders.

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Vulnerability to food insecurity

Table 1: Flashback on Food Security Status at National, regional and district levels over 2000/01-2009/10

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	Average
National level SSR (%)	92	94	102	88	103	103	112	106	105	102	101
Number of deficit regions	10	6	4	14	6	11	5	5	9	11	8
Number of districts with Vunerable areas		15	13	62	41	41	51	17	21	57	35

Vulnerability to food insecurity

From the Table 1 above, the following is observed:

- While on average Tanzania is 101% food self sufficient (crop based), 8 regions are recurrently deficit and 35 districts are recurrently bearing vulnerable areas.
- Over the 10 year period between 2000/01 and 2009/10 the minimum SSR level reached was 92% in 2000/01 and the maximum level reached was 112% in 2006/07.
- Over the period, the lowest number of definitely deficit regions was 4 in 2002/03 and the maximum was 14 in 2003/04.
- During the same period, the lowest number of districts bearing vulnerable areas was 13 in 2002/03 and the largest was 62 in 2003/04.

Musia sorghum and groundnut In Dodoma Rural District Success attributed to agro-ecological suitability

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Sorghum crop in Babati district, Manyara region. .... Doing well in the appropriate agroecology

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7. Measures to address climate change

- Formulation of the National Adaptation Programme (NAPA) – 2005 - 2007 identified the most imediate and urgent actions to address adaption in key sectors including agricultural sectors. This goes hand in hand with the Initial and Second National Communication on Climate Change and a number of studies on climate change.
- The National Adaptation Strategy and Action and Action Plan: The strategy identifies short and long term needs for adapting to climate change impacts
- Enactment of the Environmental Management Act (EMA – Cap 191) with specific directives on climate change issues. Additionally, Environmental management has been mainstreamed in all Government Ministries Department and Agencies.

Measures to address food insecurity and climate change cont'd

- Implementing short term interventions in terms of safety nets programme aimed at enabling vulnerable communities to cope with food insecurity including:
  - emergency food distribution programmes aimed at sustaining livelihoods of vulnerable communities.
  - Building the capacity of National food Reserve Agency to address food shortages
  - Implementing post harvest management initiatives including storage and trade supporting mechanisms such as the warehouse receipt system

Measures to address food insecurity and climate change cont'd

Implementing medium and long term programmes including

- The Agriculture Sector Developement Programme (ASDP) which has the objectives of achieving a sustained agricultural growth rate of 5 percent per annum, through the transformation of agriculture from from subsistence to commercial. This is a Sector wide approach with the main focus at sub national level where Districts design and implement Agriculture and food security programmes and projects. These include:
  - Food and livestock production and processing with emphasis on integrated soil and water management, promotion and support to irrigation development
- Implementation of agricultural and livestock intensification aimed at increasing productivity and production through targeted smart input subsidies and bring about a green revolution.
- Implementing Public Private Partnership Initiatives such as demonstrated by the Kilimo Kwanza (Agriculture First) Resolve whereby Government investments in agriculture and food security are complemented by private investments.

Policy Measures

- Concretize the adaption actions that are supportive to agricultural modernization and transformation (as improved varieties, modern irrigation and agricultural related better technologies
- Strengthen the mechanisms for continuous monitoring and assessment of food security at all levels and take measures to ensure food availability in the country;
- Improving and strengthening Weather forecasting and Early Warning Systems (i.e. Meteorological agency and observation nodes across the region) particularly as it relates to disaster management in floods, drought, heat waves, hurricanes, and other climate change related catastrophes;
- Address the increasing problems of extreme weather events particularly drought through for example modern irrigation, water harvesting, and water use efficiency technologies;

Policy Measures

- Create climate resilience in the agriculture and other related sectors (such as infrastructure, Energy, and Water) by integrating climate change in the implementation of agricultural development policies and actions and activities at various levels.
- Enhance collaboration with other stakeholders to improve adaptation measures to current and future climate change;
- Support the establishment and strengthening of national and regional centre of excellence as important nodes for national institutional capacities, for building research capacities and sharing knowledge and experience;
- Provide climate services that support institutional capacities, Training Research and systematic observation actions and that will allow country of Tanzania to build a critical mass of endogenous capacity to deal with climate change challenges in the agricultural sector;

9. Future Concerns

- According to the Inter-governmental Panel on Climate Change (IPCC) predictions made under a "business-as-usual" scenario indicate that by 2050 climate change is likely to place an additional 80-120 million people at risk of food insecurity. About, 70-80% of these are in Africa including our region.
- In Tanzania, about 70% of the population's livelihoods relies on small scale farming which depends on direct rainfall by over 95%. With the threat of climate change it is predicted that the productivity of agriculture could be reduced by up to 50% by the year 2020 (SNC, 2008).

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Future Concerns

The projections and prediction regarding future of climate change are not encouraging. The Second national communication (SNC) scenario outputs show that, by 2100:

- Mean annual temperatures will rise by between 1.70C over north eastern zone and 2.50C over Western parts of Tanzania. This is lower than the range indicated under INC of 3-50C in 2003.
  - **Mean rainfall is expected to increase over North eastern zone by 15% and decrease westwards down to -6% consistent with the INC.**
  - The above background suggests the need to draw links between climate change and food security so as to devise and activate focused measures towards *adaptation* and *mitigation* as appropriate.
  - If these notable effects of climate change are not addressed now the vulnerability is likely to increase further to unmanageable levels.

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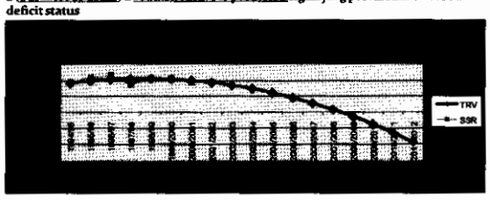
likely outcomes of Food Security status under Climate change regimes and different business scenarios

1. Unaware of climate change,unusual crop failure detected with unusualdroughts and floods over the period 1994/95-2000/01 shows that under a business as usual scenario a reddish future (Food deficit status) is predictable.

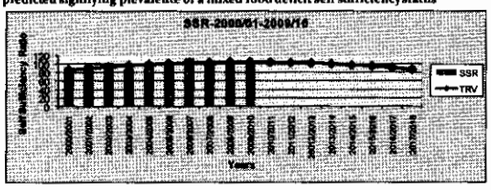
Fig 1: Based on food security trends recorded over the 1994/95-2000/01 period under a (business as usual) a reddish future is predicted signifying prevalence of a food deficit status



Food Security status under Climate change regimes and different business scenarios

2. Partially aware of climate change attempts to deal with unusual experiences amidst looming Climate Change experienced over the period 2000/01 -2009/10 business as usual scenario predicts a reddish yellow future (mixed food deficit and self sufficient status).

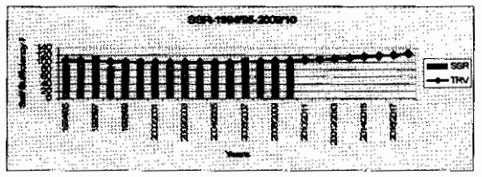
Fig 2: Alongside attempts to deal with unusual weather experiences recorded over the 2000/10-2009/10 period amidst looming Climate Change Reddish Yellow future is predicted signifying prevalence of a mixed food deficit self sufficiency status



Food Security status under Climate change regimes and different business scenarios

3. With partial awareness of Climate Change,a combination of initiatives consistent with experiences over 1994/95-2008/09 under a business as usual scenario predicts a yellow future (food self sufficiency status).

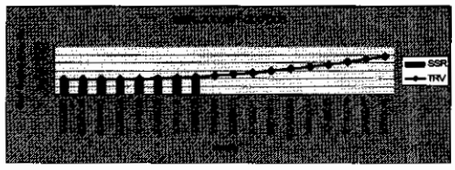
Fig 3: With partial awareness of Climate Change a combination of initiatives to adapt/mitigate the new regime carried out under a business as usual scenario over the 1994/95-2009/10 period a Yellow future is predicted signifying prevalence of a food self sufficiency status.



Food Security status under Climate change regimes and different business scenarios

4. Coupled with useful experiences adopted amidst Climate Change, adaptive awareness creation and serious campaigns consistent with experiences from 2000/01-2007/08 under a business unusual scenario predicts a yellowish green future (combined food self sufficiency and deficit status).

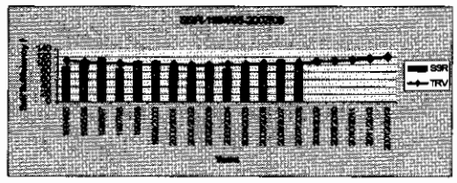
Fig 4: Coupled with useful experiences adopted over the 2000/01-2007/08 period amidst Climate Change regime, adaptive awareness creation and serious campaigns under a business unusual scenario predicts a yellowish green future signifying prevalence of a combined food self sufficiency and deficit status



Food Security status under Climate change regimes and different business scenarios

5. A nation-wide engagement in adaptation and mitigation measures towards MDGs consistent with SSR management practices applied between 1994/95 and 2007/08 under a business unusual scenario predicts a green future (food surplus status).

Fig 5: A nation-wide engagement in adaptation and mitigation measures towards MDGs consistent with SSR management practices applied between 1994/95 and 2007/08 predicts a green future signifying prevalence of a food surplus status given a business unusual scenario.



Conclusions and Recommendations

Generally, it is concluded that:

- The impacts of climate change on food security are evident given observations on decline in crop production and productivity due to climate impact and other factors like land shortage and agricultural inputs.
- Multiple Mitigation and adaptation strategies are deployed by communities need to be strengthened to build resilience and ability to cope with climate change impacts
- Enhanced food security and climate change adaptation go hand in hand
- In view of future predictions of climate change impacts on food security , there is need for immediate and urgent actions

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Conclusions and Recommendations

- Climate smart agriculture and food security management is recommended as a wise decision towards GREEN FUTURE under the business unusual approach, consistent with KILIMO KWANZA spirit , vigorously promoting water harvesting for a serious irrigated agriculture as opposed to rain-fed agriculture alone
- Consider locally developed strategies and ground proof lessons learned from local climate change studies.
- While adaptation/mitigation initiatives are widely considered fundable under foreign donation, local funding sources should be sought for sustainability and urgency reasons.

SOME IMPORTANT CONSIDERATIONS IN MANAGING AGRICULTURE AND FOOD SECURITY IN ADDRESSING CLIMATE CHANGE

- Support piloting and up-scaling early action programmes (including capacity building, technology, knowledge and information) on climate smart agriculture and food security with emphasis on adaptation that creates a synergy with mitigation.
- Underscore the place of smallholder farms, pastoral areas and other sectors (including the private sector) in climate smart agriculture in compliance and voluntary carbon trading. In addition there is need to set up the necessary infrastructure at regional, sub-regional and national levels to simplify access to the carbon markets.
- Need to adopt collaborative initiatives under the EAC region in terms of the Food Security Action Plan and the Climate change policy t .
- Under the AU framework for agriculture, climate change adaptation and mitigation; support the implementation of CAADP and country agricultural investment plans towards climate smart agriculture and food security interventions;
- Support and upscale best practices and technologies as early actions towards achievement of climate smart agriculture and food security under the NEPAD and regional economic communities (RECs). These early actions will leverage additional climate funding at national level.

SOME IMPORTANT CONSIDERATIONS

- Make climate smart agriculture explicit in all pillars of CAADP and raise profile ofg financing for climate smart agriculture and food security in climate change negotiations in particular Africa to lobby for adequate funding for climate smart agriculture and food security and (to argue pledging countries to fulfill commitments) the establishment of appropriate mechanisms .
- Support capacity and institutional coordination to access all public and private funding sources and convene a Pan African expert panel to study the possibility of setting up a financing mechanism for African Agriculture and Food security.
- Recognition of the importance of civil society (NGOs and CBOs) in enhancing local level resilience and adaptation and provide them with adequate financing.

The End

Thank you for your attention!

Food Security and Climate Change in Uganda
Country Paper Presented
At Arusha, Tanzania, Dec 2010

Uganda Food Security Situation

- Agriculture sector plays a big role in the Ugandan economy.
- Agriculture accounts for:
  - approximately 23.7% of the GDP
  - 46% of export earnings
  - 73% of employment
- Uganda has a comparative advantage in agricultural production in EAC region
- Is food self sufficient at aggregate (national) level

2

Uganda Food Security situation (cont.)

- Over 2/3 of the population (estimated at 68.5%/20.3 million) is classified as food insecure (at household level)
- 38% of the children under 5 years of age are stunted and 16% underweight
- Food security situation varies from region to region
- Most of central and western region is generally food secure

3

Uganda Food Security (cont.)

- Eastern and Northern Region, generally food insecure
- Serious food and livelihood insecurity experienced in North East and Extreme North

4

Causes of food insecurity in Uganda

ıa) Climate Change

Climate change manifests in form of extreme weather conditions such as:

- **Drought;** shortage of water & pasture, crop failure , famine, increased food prices, food emergencies, inter district migrations, economic loss/loss of income,
- **High temperatures;** lead to escalating vectors (pests and diseases), crop wilting, poor yields
- **Heavy rainfall;** crop destruction, soil erosion and leaching, contamination of water sources, livestock & crop diseases

5

Causes of food insecurity in Uganda Contd.

- **Flooding;** leads to increased crop, livestock, & human diseases; loss of lives and livestock; destruction of crops and infrastructure, post harvest losses, water pollution etc.
  - In 2007 about 50,000Households from 29 districts were affected by floods and the intervention cost over USD 5 million)
- **Hail storms;** destruction of crops

6

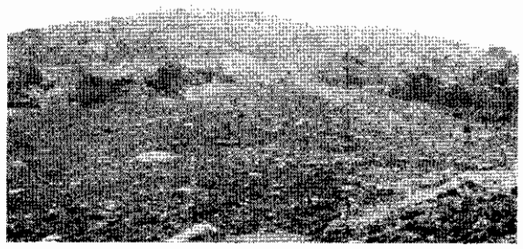
Causes of food insecurity in Uganda Contd.

- **Land slides;** loss of lives and livelihoods and displacement of people e.g. In March 2010, 350 people died & 5800 people were displaced in highlands of Eastern Uganda
- **Shift in seasons;** affects productivity, migration

7

Causes of food insecurity in Uganda Contd.

Land slides in Bududa, Eastern Uganda



Causes of food insecurity in Uganda Contd:

b) Others: civil insecurity, poor infrastructure, poorly developed markets, lack of Value addition, inadequate research & extension, constrained production inputs, poverty especially at house hold levels

9

Causes of Food insecurity in Uganda Contd:

Impact of climate change on GDP

- Recent trends indicate that the contribution of agriculture to total GDP has decreased from 45.7 percent in 1995/96 to 41.5 percent in 1999/00.
- partly explained by the drought as illustrated by the dried maize in picture

10

Causes of food insecurity in Uganda (cont.)

A farmer in Nakasongola District, central Uganda lamenting over his failed crop due to prolonged drought

11

What is Uganda doing to address food insecurity

- Prioritization of the agricultural sector in NDP 2010-2015
- In the 2010/11 financial year agric budget was raised by 6.7% (from 311 – 331.9 BN) and govt. is committed to continuously rising it per year
- Streamlined climate change issues in the NDP and other sectoral policies
- Food & nutrition policy in place
- Uganda is implementing Comprehensive Africa Agricultural Development Program (CAADP) through DSIP in which climate change issues have been mainstreamed

icu12

What is Uganda doing to address food insecurity & Climate change contd

- Climate Change coordination unit was established in 2008
- Autonomous Meteorology Service Agency establishment is in process
- Integration of climate adaptation and mitigation measures in agriculture and other economic development programs and policies (Envt, Education)
- National Adaptation Plan of Action (NAPA)
- Disaster preparedness and management policy drafted

13

What is Uganda doing to address food insecurity contd

- Regional and multi sector sensitization on climate change taking place
- Periodical early warning messages in the media
- Food security assessment every six months under the integrated phase classification program
- Disaster preparedness and emergency rescue programs

14

What is Uganda doing to address food insecurity contd

Research and extension; Drought resistant crops: pearl millet

15

What is Uganda doing to address food insecurity contd

- Enterprise mix with inbuilt risk management & mitigation measures:.,

  Perennial drought resistant crop variety + appropriate animal enterprise especially small animals or similar enterprise + food security crop

  e.g mushrooms/chicken + pineapple/coffee + cassava/sweet potato

16

What is Uganda doing to address food insecurity contd

- Food processing and preservation
- Water for agricultural production (dams, irrigation etc)
- Disease and pest control is prioritized under the DSIP

17

What is Uganda doing to address food insecurity contd

- Improving quality of information and its use such as meteorological information for planning to plant
- Sustainable land use practices
- Promoting insurance schemes and agricultural credit
- Tree planting and other mitigation actions

18

What more can Uganda do? Short – term interventions

- Strengthen early Warning System (EWS) + developing complete value chains for those areas still capable to produce under prevailing weather & distribute to food insecure ones
- Availing high yielding seeds to farmers + appropriate post harvest handling and storage + market streamlining to ensure fair farm gate price
  - This will increase current maize production from 1.45 mil Mt tons to 2.4 mil Mt., releasing 1.3 mil Mt to the regional market or food reserve
- Food security monitoring and assessment at village level

19

What more can Uganda do? Short term contd.

- Fast track the development of the climate change policy
- Step up integration of other easily affordable climate adaptation and mitigation measures in agriculture and other economic development programs
- N.B: short term interventions assumed to be budget friendly & achievable just with strong political commitment

20

What more can Uganda do? Medium – Long Term

- Promote fertilizers use in agriculture + other agrochemicals
- Agricultural mechanization
- Popularize and promote irrigation agriculture on 400,000 Ha where land is suitable
- In maize this will push production to 4.6 mil MT. releasing 3.5 mil MT. to the regional market or food reserve per year

21

Conclusion

- Intervention actions raised in this paper are realistic and Uganda government development policy frameworks are already emphasizing these approaches.
- Moreover most of the interventions are normal actions we should have done yesterday to ensure food security for our people. Thus linking the food security action plan and climate change policy is quite O.K.

22

THANK YOU SO MUCH FOR YOUR ATTENTION

FOR GOD AND MY COUNTRY

23

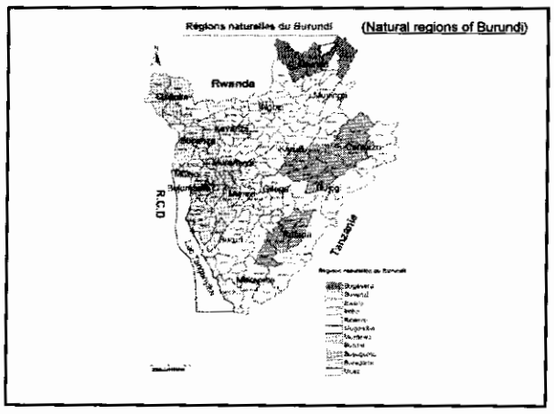
REPUBLIC OF BURUNDI

EAC HEADS OF STATE RETREAT ON FOOD SECURITY AND CLIMATE CHANGE

NGURDOTO MOUNTAIN LODGE
DEC 2ND 2010

PRESENTATION OF THE REPUBLIC OF BURUNDI

FOOD SECURITY IN BURUNDI AND ADAPTATION TO CLIMATE CHANGE UNDER THE THEME OF TRANSFORMING AGRICULTURE THROUGH INNOVATION



Brief presentation of Burundi

- Area: 27,834 square km of which 23,500 potential agricultural
- Population: 8,036,540 inhabitants in 2008
- Medium density: 390 inhabitants / square km
- Rate of population growth: 3%
- GDP: 110 USD in 2007
- 91% population is rural, 51% women
- Average farm: 0.5 Ha
- Number of people per household: 5.3

Potential of agriculture

- Opportunities to practise a wide variety of cultures
- Abundant rainfall (6 to 9 months of rain)
- Extensive network of rivers
- Deposits of limestone, dolomite, phosphates (good for the taste of products)
- Wealth value (oil palm, sugar cane, rice , banana , maize, potatoes , cassava , beans,etc.)

Causes of food insecurity

- Agronomic constraints: low soil fertility, lack of efficient input
- Climatic constraints: Climate disruption / insect outbreaks
- Technological constraints:lack of technological innovations

Features of Food Production

Absolute food production (thousand tons Eq. Cereals) by crop group

Year	Cereals	Leguminous	Root et tuber	Banana	Total
2000	251	224	465	108	1048
2001	274	282	506	111	1173
2002	282	282	536	114	1214
2003	246	246	485	112	1089
2004	280	280	515	113	1189
2005	290	250	495	117	1151
2006	287	247	474	118	1126
2007	290	241	479	123	1133
2008	287	222	486	125	1120
2009	300	242	502	128	1172
2010	312	235	520	137	1204

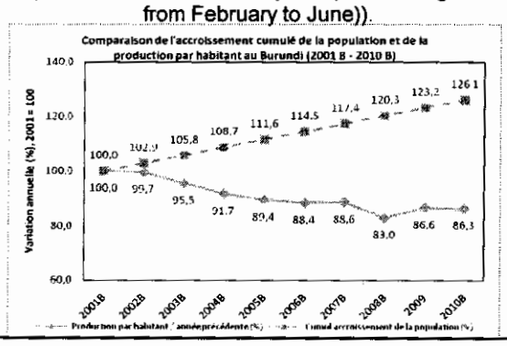
Livestock

Year	Cattle	Goat	Sheep	Pig	Rabbit	Total
2000	356492	868039	224663	194218		698589
2001	360440	984186	247965	165143		799608
2002	378391	1058586	528347	479587	837653	711260
2003	381359	970288	239505	105757	691389	704254
2004	374475	1108952	235611	136360	833520	852954
2005	395741	1194780	242933	169572	945318	945318
2006	433800	1438713	266510	178737	316351	1142102
2007	479106	1066717	292916	189505		1315788
2008	399612	1429280	246228	135841	202264	

Evolution offish catches

Year	Total annual catches (ton)
1997	2994
1999	8689
2000	13186
2001	9152
2002	16879
2003	13708
2004	13515
2005	14000
2008	17646
2009	15000 (heavy wind and rough sea, pollution in some areas of the lakes)
2010	

Growth of population in comparison with food production for the last 10 years (Season B goes from February to June))



Comparison between the increase of food availability per inhabitant and the needs for consumption per inhabitant between 2001 and 2010 (Season B goes from February to June)

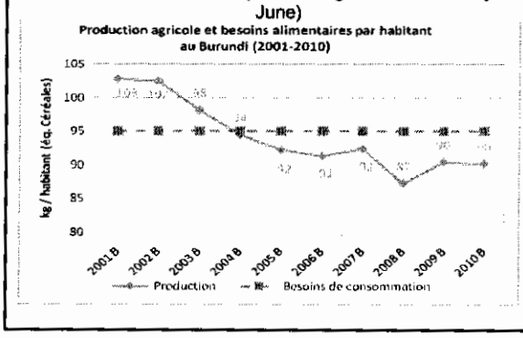
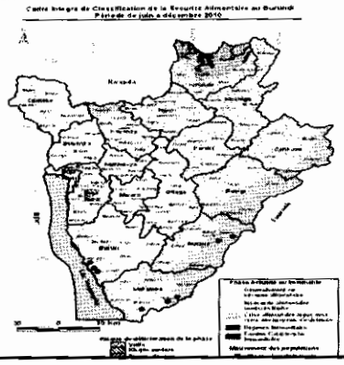


Chart illustrating Classification of Food Security for Season 2010B



Promotion of the Agricultural Sector in Burundi

- Increase in the budget allocated to the sector (3.5% of budget = 20 billion in BIF, 2010), budget forecasting for the agricultural sector in 2011: 7% of national budget
- Development of reference materials National Strategy for Agriculture (2008-2015), Agriculture Master Plan (2009-2015), CAADP in EAC-COMESA Framework (2010-2015), National Plan of Investment in Agriculture (2011-2016)
- Mobilization of other donors: Belgian Technical Cooperation (BTC), IFAD, WB, EU, ADB, etc.

Promotion of the Agricultural Sector in Burundi (continu'd)

- Funding for several projects:
  - Large irrigation perimeters in the Imbo and Moso plains
  - Marshland, and radical terraces and watershed management
  - Rehabilitation of several seed centers Restocking of the national livestock
  - Establishment of strategic stocks of fertilizers

Development partners in the agricultural sector

- European Commission
- IFAD
- World Bank
- African Development Bank
- FAO
- Belgian Technical Cooperation
- US AID,
- Etc.

National policy for mitigation of climate change

- Signature and ratification of international conventions on
  - Biodiversity,
  - Fight against desertification (UNCCD),
  - Framework Convention on Climate Change and Kyoto Protocol (UNFCCC)
  - UN Convention on protection of wet land
  - Lake Tanganyika Authority
- National Strategy for the Environment,
- Law on Land,
- Law on Environment's protection,
- Law on Forest Policy

Master Plan

To mitigate climate change, Burundi has undertaken

- National Reforestation Program
- National master plan of adaptation on climatic change
- Adoption of techniques for the conservation of wood energy
- Use of alternative fuels at the household level
- Presentation of 2 communications on climatic change
- Education on Environment (change in habits)
- Marshland and watershed management
- Numerus actions together with our partners
- Etc

THANK YOU VERY MUCH

MERCI BEAUCOUP

ASANTENI SANA

CURRENT FOOD SECURITY SITUATIONAND CLIMATE CHANGE IMPACTS IN KENYA

Presented By:
Romano M. Kiome (PhD, CBS)
Permanent Secretary, Ministry of Agriculture, Kenya

During the Heads of State Retreat on Food Security and Climate Change on 2nd December, 2010 at Arusha, Tanzania.

INTRODUCTION

Agriculture is key to achieving food security which entails:

- Food availability ,
- Food access
- Food supply Stability and;
- Quality of the food.

INTRODUCTION CONT'D

- Kenya's agriculture is predominantly rain-fed.
- Variations in rainfall translates into variations in food production
- Frequent droughts and famine: now every third year
- Droughts are often followed by floods, hence complicating recovery

GENERAL FOOD SECURITY SITUATION

- 46 percent of the population Food insecure (can not afford two meals of quality food a day)
- Urban Food Insecurity on the increase
- Rural Food insecurity on the decrease
- Food distribution the highest challenge
- Transport contributes the highest proportion of food cost
- Some regions of the country perpetually food insecure

CURRENT FOOD STATUS: 2010

Item	Production	Requirement
Red Meat	430,000 t	330,000 t
White meat	40,000t	36,600 t
Milk	40 billion l	28 billion l
Maize	36 million bag	34 million bags
Wheat	4 million bags	10 million bags
Beans	4.8 million bags	6 million bags
Rice	700,200 bags	1.8 million bags
Potatoes	1.2 million bags	800,0000

Current Food security Situation

- Generally 2010 is food secure in Kenya
- However predictions of Lanina indicates high probability of drought, hence food insecurity in 2011

CLIMATE CHANGE IMPACTS

- Numerous but focus on Food insecurity
  - Frequent droughts hence frequent crop and pastures failures;
  - Frequent floods hence loss of crop, pastures and livestock
  - Frequent outbreaks of pests diseases,

IMPACTS

- Increasing distances between water and pasture.
- Variations in rainfall commencement dates, amounts, distribution and cessation;
- Migration of Livestock leading to increase on trans- boundary diseases

CLIMATE CHANGE IMPACT CONT.

- Inappropriate land use - pastoralists turning to cultivation of the fragile ecosystem.
- Disruption of social systems- families separated as young men move with the animals and stay away from their families.

CLIMATE CHANGE IMPACTS CONTI..:

- Resurgence of some diseases Rift Valley Fever and meningitis;
- Extinction of some plant and animal species;
- Rivers become seasonal or dry up
- Reduced lake levels and sizes;
- Conflicts over limited resources -pasture and water.

INTERVENTIONS ON IMPACTS OF CLIMATE CHANGE

- On food security: increase productivity
  - Drought resistant crops: many varieties developed
  - Irrigated agriculture: Economic stimulus programme to irrigate all irrigable land in the next 10 years
  - Subsidized seeds: spent Ksh 1 billion last year

INTERVENTIONS CONTINUED

- Subsidized fertilizer: Spent Ksh 9 billion last year: establish fertilizer and seed fund
- Fertilizer plant
- Early warning systems
- Livestock off take

CLIMATE CHANGE INTERVENTIONS

- Emphasis on mitigation rather than adaptation
  - Increase in forest cover: aim at 10 %
  - Farm forestry: 10% of farmland
  - Carbon fund: Ksh 2 billion
  - Promotion of green energy to reduce emission: Kenya's energy policy

THE END

THANK YOU

Food Security and Climate Change in Rwanda

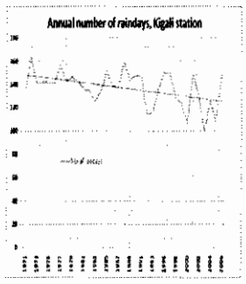
Mukankomeje Rose and RutagwendaTheogene

Outline

1. Challenges to agriculture caused by climate change
2. How Rwanda is addressing these challenges to attain food security
3. Conclusion/ Way forward

Recent changes of climate patterns in Rwanda

1. Average temperatures have increased with warm days exceeding 30°C
2. Decrease in number of rainy days
3. Changes in rain predictability and pattern (late start, torrential rains, floods)
4. Dry spells during rainy seasons
5. Decrease in rain precipitation
6. ALL THESE HAVE AN IMPACT ON CROP PRODUCTION

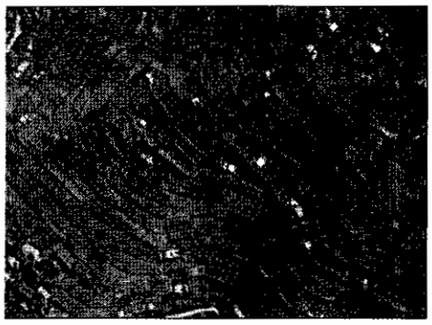


Farming is carried out on steep hills

Hills that are prone to soil erosion

High population density, small agricultural plots steep hills

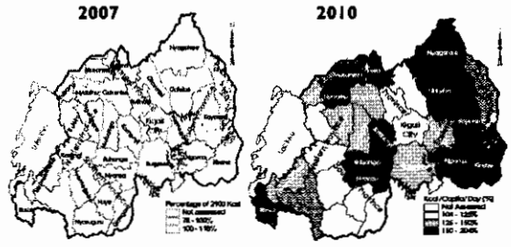
MURWA Cell, BUTARO Sector, BURERA District



Area = 27.097 Ha Parcels = 248 Parcel average area = 0.109 Ha

In spite of the challenges Rwanda's food security situation has improved

2007 2010



Strategic interventions (CIP)

1. Access to inputs	• Land use consolidation • Fertilizer access • Seeds access
2. Erosion Control	• Terracing • Agro-forestry
3. Livestock	• Livestock management (zero grazing) • One cow per family
4. Building Skills	• Participatory Extension Services • Research
5. Market Development	• Domestic & Export Market Development

1. Access to inputs

1. Bulk fertilizer imports
2. Private sector in transport and distribution
3. Auction to agro-dealers
4. Voucher credit system
5. Land consolidation that maximizes effect
6. Streamlined seed distribution

Fertilizer use rose from 4 kg to 18 Kg/ha

No of households using fertilizers from 25 to 44%

2. Erosion control

Production on terraced land, integrating agriculture and environmental protection

3. Livestock ownership and productivity

- Increase livestock ownership
- (90,693 new families)
- (milk, cash, organic fertilizer)
- Small ruminants (sheep, g oats, pigs and poultry)
- Control of major diseases
- Cows at schools and school gardens
- Kitchen gardens
- One cup of milk program

- ZEROGRAZING:
- Promoting biogas and use of manure for crop production
- Promoting agroforestry

Research into staple crops e.g different bean varieties , short growing period

Yield 5 tons/ha in high altitude

4. Market development to transform farming into a business

Domestic Markets	Export Markets
Partnerships with the private sector	Developing sanitary & phyto-sanitary standards
Developing agricultural finance	Extension services for export producers
Complementary investments – e.g. rural electrification	Infrastructures for export – e.g. cold storage chains
Market Information Systems - e-Soko	Progress in developing common markets in E.A.

Measures taken

1. A national program of action on climate change
   - A national communication on climate change
   - An early warning project on climate change
   - A department of climate change within Rwanda Environment Management Authority

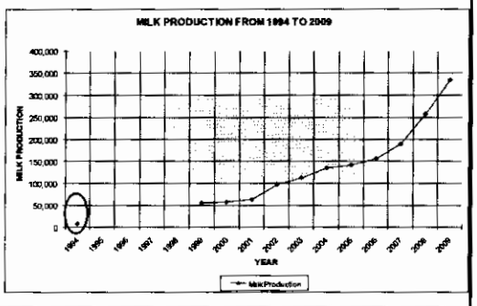
2. Assessed the economic impacts of climate change which showed that losses due to flooding in one year alone was in the region of $ 4 - $ 22 million. (household damage, agricultural losses and fatalities)

3. Rwanda is implementing the CAADP Initiative in addressing food security

FOOD PRODUCTION (Tons)

PRODUCTION	2007	2008	2009	2010
Maize	26 282	132 990	216 604	318 772
Wheat	10 248	37 908	38 314	32 660
Cassava	326 879	687 949	817 837	1 065 901
Irish Potato	525 797	572 854	687 978	1 029 887
Rice	35 193	48 053	48 353	51 660
Beans	163 446	181 228	186 876	189 038
Banana	1 466 864	1 308 472	1 650 874	1 474 851

Increase in milk production



Strategic orientation

1. Investments in land and water management

Agricultural productivity relies on adequate supply of water: water utelization and conservation techniques

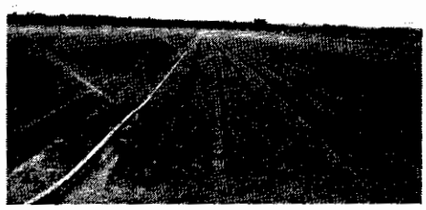
2. Investments in agricultural productivity with focus on climate change adaptation

Controlling soil erosion
Reduce deforestation and promoting afforestation
Promote use of organic fertilizers for improved soil fertility

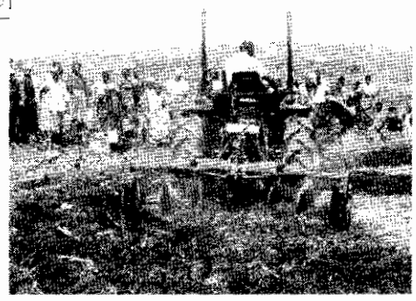
3, Climate change fund

-Payment for ecosystem services will benefit the natural resource base and lead to investments in agricultural productivity

Investment in Irrigation/Water harvesting

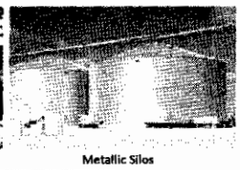


Mechanization

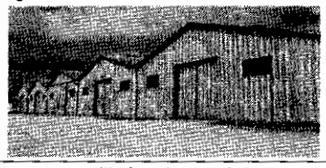


Food Storage

Storage at household level



Metallic Silos



Warehouse in a strategic storage

Conclusions/Way forward

1. The following have contributed to increased production and achievementof food security should be sustained

- •Increasing farmer's access to modern inputs
- •Controlling soil erosion
- •Increasing access to livestock
- •Land use consolidation
- •Improvement of post harvest handling, storage and marketing

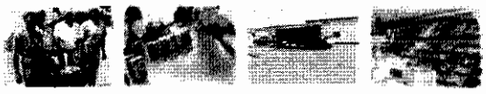
Conclusions/Way forward

- 2.Addressing the issue of Climate Change should take a regional approach as no country should go it alone
- 3.Operationalisation of EAC Climate Change Fund will greatly contribute to addressing the negative impacts of climate change in the region

Annex IV

Resources Persons

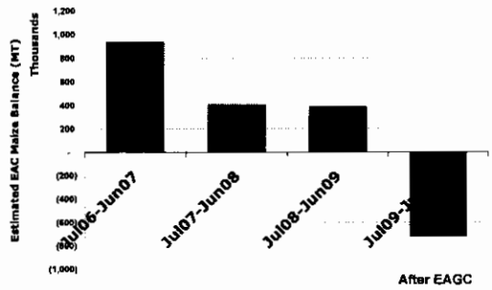
Attaining Food Security in the EAC: *Situation and Key Issues*



Presentation at the
EAC HEADS OF STATE RETREAT
on FOOD SECURITY AND CLIMATE CHANGE
Nuhu Hatibu
CEO
Kilimo Trust

1

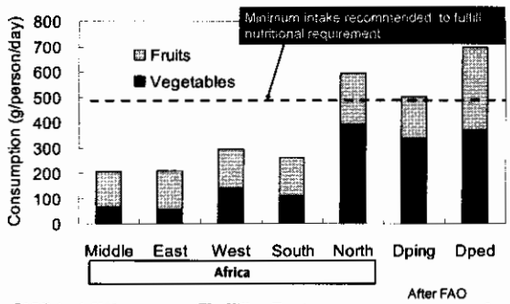
Annual Balances – Maize in EAC - estimates



EAC Retreat, 2010 The Kilimo Trust 2

Low Diversification of Sources of Food

e.g very little fruits and vegetables content in diets



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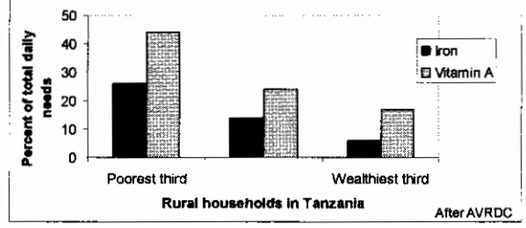
...and the wealthier one is, the less the intake in indigenous vegetables

Indigenous vegetables provide a high proportion of nutritional needs for the poor



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In general Key Sources of <u>Nutritious</u> Food, are under-utilized

- The region is a world leader in several starchy commodities – and blending with major cereals will easily create surpluses in highly nutritious foods
- Indigenous fruits and vegetables have hardly been mainstreamed in Staple diets

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From Common Market ...to... Common Food Security: Priorities:

a) Structured Trading in Food;
b) Common Standards, Rules and Regulations;
c) Optimal Infrastructure;
d) Competitive Financing; and
e) Mitigation of Risks

EAC Retreat, 2010 The Kilimo Trust 6

Regional Level - Structured Trading in Food: Key Aspects...

a) Regional commodity exchanges; supported by: :
   i. Well established Warehouses and/or Warehouse Receipt Systems, and
   ii. Reliable market information system

b) Organized smallholders, supported by efficient and well **regulated:**
   i. Contract farming, or
   ii. Out -grower schemes, and
   iii. Financing

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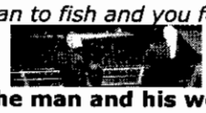
Central Role of Agro-industries and Value-Addition

Recall the Chinese proverb:

"Give a man a fish and you feed him for a day"

"Teach a man to fish and you feed him for a lifetime"



And add:

Support the man and his woman to preserve and process their fish and you feed the world while creating wealth, for generations.

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... Why?

Because of tremendous backward and forward **linkages and multiplier effects**, with respect to:

- Increased access to markets that are distant in space and time;
- Extension of the reach of food, also in space and time;
- Creation of non-farm employment and income generation opportunities;
- Retention of high proportion of the value;
- Reduction of postharvest losses; and
- **improvement of food quality and safety.**

I would change "***Kilimo Kwanza***" to "***Kilimo na Viwanda Vyake Kwanza***"

EAC Retreat, 2010 The Kilimo Trust 9

... but more importantly

It is about:

- ✓ Taking care of years of <u>abundant production</u>, so that:
- ✓ Years of poor harvest <u>can take care of themselves</u>

In short:
pull all the stops in the 3-4 years of good harvest
and avoid
begging for food in the one year of shortage

EAC Retreat, 2010 The Kilimo Trust 10

Infrastructure is key, but it is the "Last Mile" that matters

... **actually** - *Major infrastructure is hugely under-utilized*

EAC Retreat, 2010 The Kilimo Trust 11

Improving Financing of Food Systems

a. Graduate smallholders and "*jua kalis*" to production and agro-processing SMEs capable of:
   - ✓ **utilizing market opportunities,**
   - ✓ **executing contracts, and**
   - ✓ **absorbing private sector commercial financing (credit and equity);**

b. Build investment funds that are strongly linked to promotion of savings; *then and only then*

c. Leverage equity and/or sovereign investors.

EAC Retreat, 2010 The Kilimo Trust 12

Enhance Resilience to Weather Variability and Adaptation to Climate Change

It is not the variability *per se* that is the problem – but rather the negligible control and management of rainwater:

- Hand hoe cultivation is the most widely used "attempt" to manage water for agriculture; and
- Dams are few and far apart – and only little of the stored water is put to full use for agriculture.

Weather Indexed Insurance would help, BUT a lot of work is required to...

- Create informed demand *(increase awareness, acceptability, and willingness to pay);*
- Solve the MAJOR problems with the coverage and quality of the necessary weather data;
- Build needed capacities to integrated weather index agri-insurance to the common *mwananchi*; and
- Establish enabling legal and regulatory frameworks.

Focus on Wealth Creation for EAC's Citizens in Agriculture and Food Systems

Establish regional and global value chains to provide a better alternative to leasing of land – by:

a) Expanding market research, product development, differentiation, and branding; and
b) Developing and implementing models for linking producers in the EAC with the (public and private investors) from major food importing countries.

THANK YOU!

WWW.thekilimotrust.ORG

Nuhu.hatibu@kilimo.co.ug

REGIONAL IMPACTS OF CLIMATE CHANGE

L.A.OGALLO
IGAD Climate Prediction and Applications Centre (ICPAC) and Met Dept University of Nairobi

KEY ISSUES

- Climate change fundamentals
- Climates of the past and present
- Impacts / Vulnerability to past and present climate
- Climate of the future
- Impacts of future climate change (food insecurity)
- Recommendations and conclusions (Importance of harmonized regional Strategies / Policies)

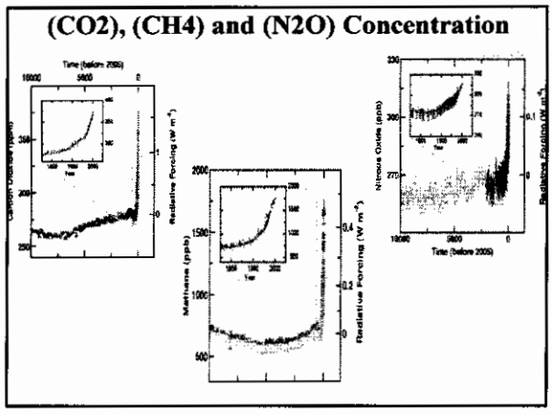
CLIMATE CHANGE FUNDAMENTALS

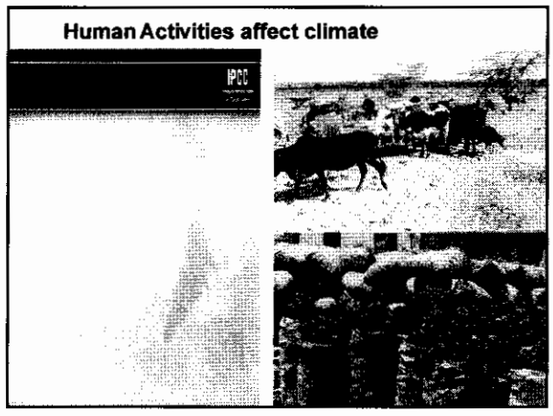
- PLANET EARTH: THE ONLY KNOWN PLANET WITH LIFE IN OUR SOLAR SYSTEM
- THERE ARE EVIDENCES SHOWING THAT THE HEALTH OF PLANET EARTH IS CHANGE
- CLIMATE CHANGE IS A PRODUCT OF THE CHANGING PLANET EARTH HEALTH

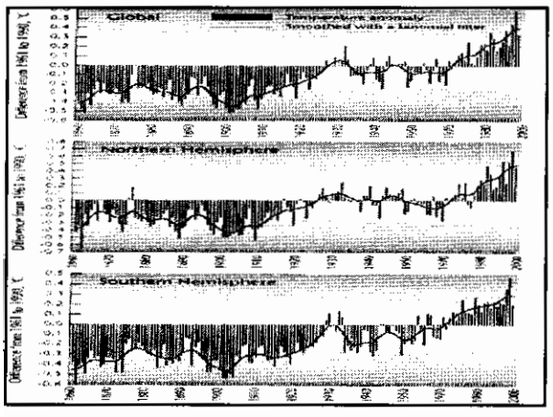
EVIDENCES ON THE DETERIORATION OF EARTH PLANET HEALTH

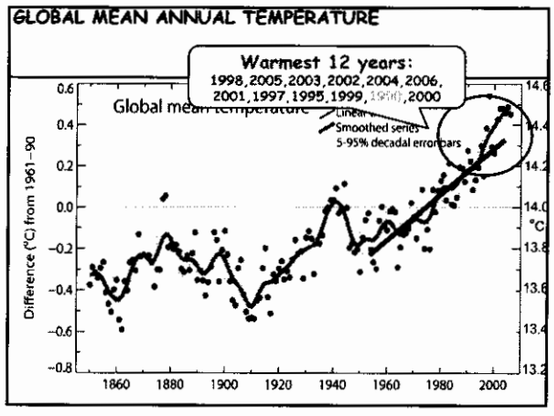
(a) ASSESS WHAT HAS HAPPENED TO THE EARTH SINCE SAY 1950,1900, 1800, 1400, 1000, ….

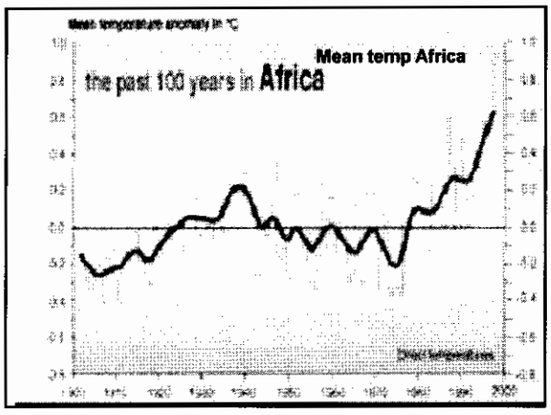
(b) CLEAR EVIDENCES OF HUMAN INDUCED DEGRADATION at ALL levels (land, water, air, and Biodiversity Degradation)

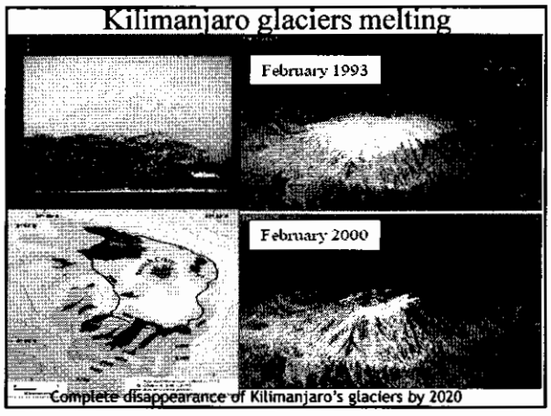

(CO2), (CH4) and (N2O) Concentration

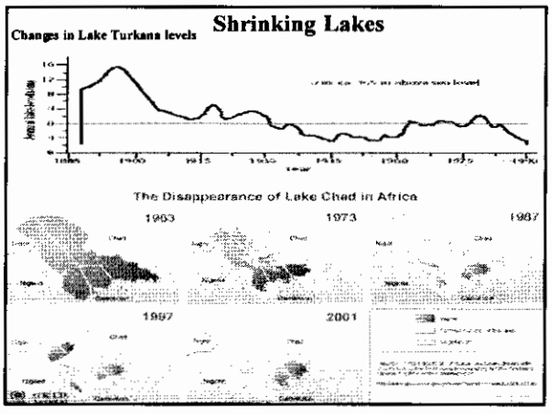

Human Activities affect climate
IPCC

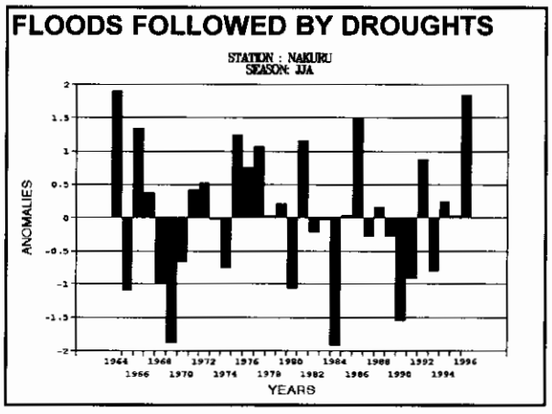

Global
Northern Hemisphere
Southern Hemisphere

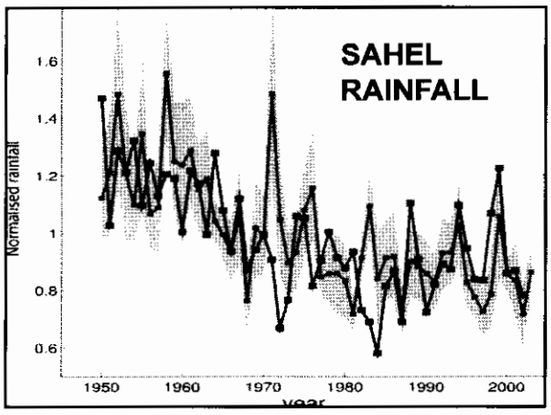

GLOBAL MEAN ANNUAL TEMPERATURE
Warmest 12 years:
1998,2005,2003,2002,2004,2006,
2001,1997,1995,1999,1990,2000
Smoothed series
5-95% decadal error bars
Difference (°C) from 1961-90
°C


Mean temp Africa
the past 100 years in Africa


Kilimanjaro glaciers melting
February 1993
February 2000
Complete disappearance of Kilimanjaro's glaciers by 2020


Shrinking Lakes
Changes in Lake Turkana levels
The Disappearance of Lake Chad in Africa
1963
1973
1987
1997
2001


FLOODS FOLLOWED BY DROUGHTS
STATION : NAKURU
SEASON: JJA
ANOMALIES
YEARS



EVIDENCES

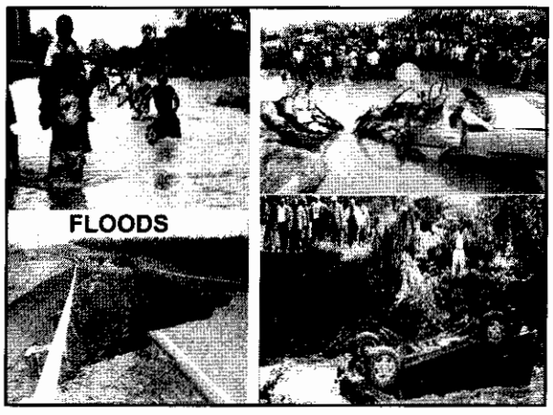
(a) Climate change is real

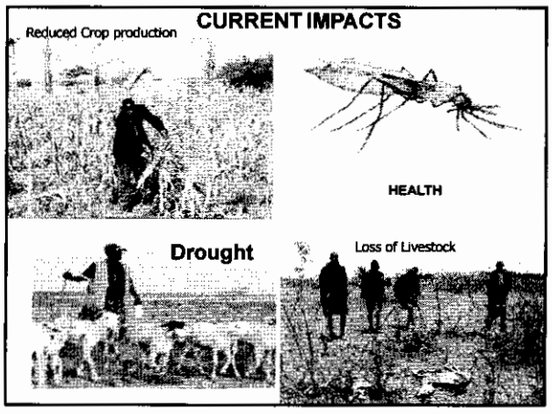
(b) Sub-Sahan Africa most vulnerable

(c) Conflicts over some shared resources

(d) Even with mitigation Damage will continue for centuries even with mitigation

(e) Climate change Adaption NOT an option to sustainable development





THE FUTURE

- FUTURE SCENARIOUS OF THE HEALTH OF THE EARTH IN 2030, 2050, 2070, 2100, 2300,2400---(Gases, Rainfall, temperature, sea level, DISATERS...)
- Current impacts and vulnerability provide some lessons
- IMPLICATIONS ON AGRICULTURE AND FOOD SECURITY

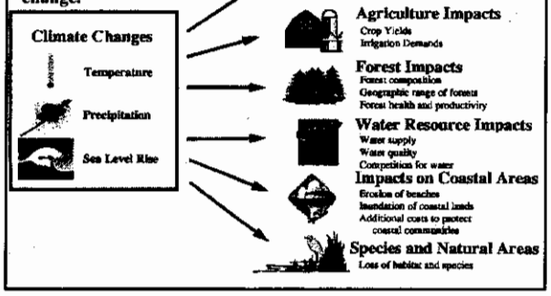
THE WORLD TOMORROW

WILL BE DETERMINED BY:

- Population
- Economic development
- Energy production and energy consumption
- Technology
- Land use, etc.
- Policies: Emission control policies Global level: (UNFCCC):

Implications of Climate Change for Africa

Africa, one of the most vulnerable continents to climate variability and change.



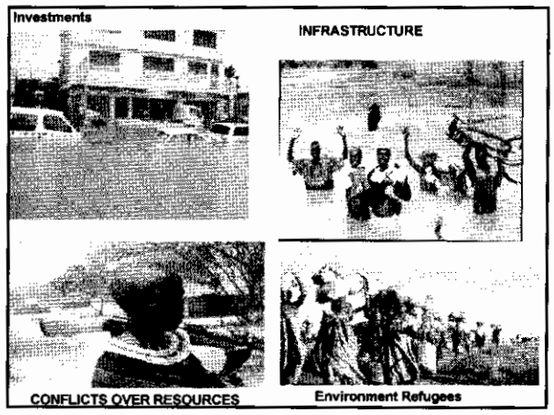
REGIONAL IMPACTS ON FOOD INSECURITY

- Direct / indirect effects of climate changes on crops, livestock, fisheries, forests, ... Food Production and Availability
- New and emerging air, water, food-borne related diseases and pests
- Food Stability (DROUGHTS AND FLOODS)
- Food Accessibility e.g. Poverty: Ability to purchase
- Increasing Hydro meteorological Disasters

ADAPTATION AND MITIGATION

Some key issues

- **Ensure strategies and Policies in-built resilience to cope with current climate variability and adapt to future climate change**
- **Investment on Green infrastructure for climate change adaptation and to reduce the GHG emissions**



- **Green energy Policy: Pollution less energy: hydropower, wind, solar , bioenergy, geothermal, ocean energy,**
- **Institutional framework for climate change**
- **Technology : Research and innovations for developing innovative technologies**
- **Cross cutting issues : Capacity building; Gender, Indigenous Knowledge, information systems....**
- **Climate change opportunities**
- **Finance : Funding to support adaptation and mitigation activities, etc**
- **Climate change and an Integrated Disaster risk reduction strategy (trigger of new hazards)**
- **Regional Collaborations / coordination**

AGRICULTURAL INNOVATION IN AFRICA

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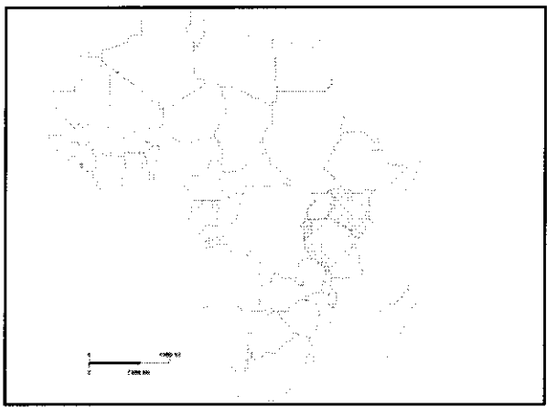
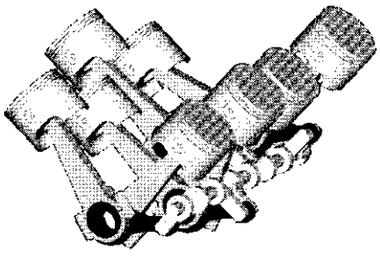
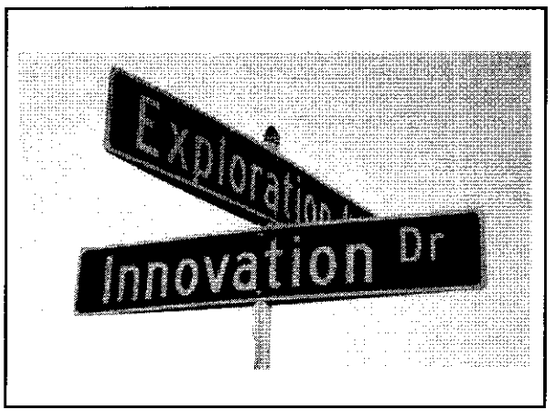
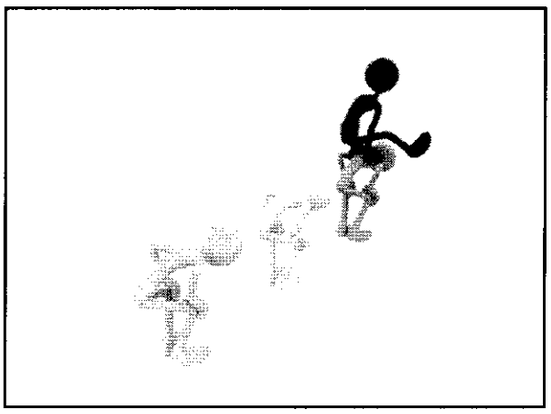
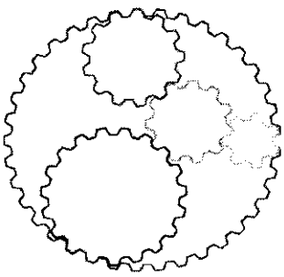




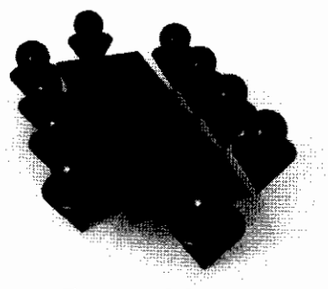




Executive leadership



Coordinated action



Expert advice

Physical infrastructure

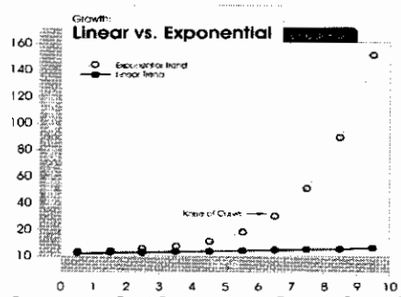
Facilities, structures, associated equipment, services, and institutional arrangements that facilitate the flow of goods, services and ideas. Infrastructure therefore includes:

public utilities (energy, telecommunications, water supply, sanitation and sewage, and waste disposal);

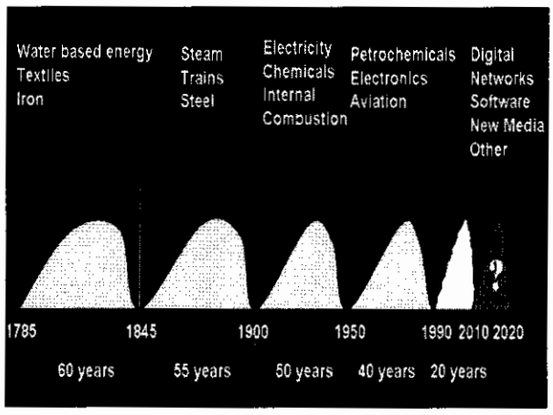
public works (irrigation systems, schools, housing, and hospitals);

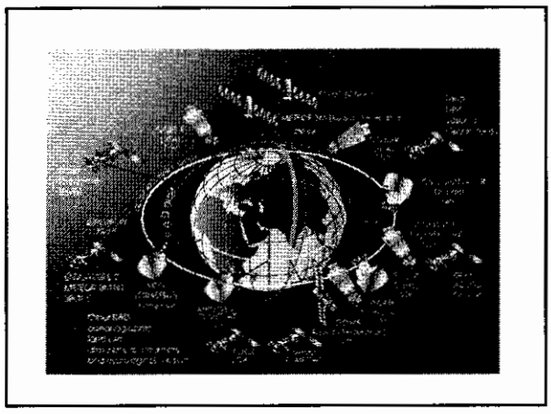
transport sectors (roads railways, ports, waterways, and airports);

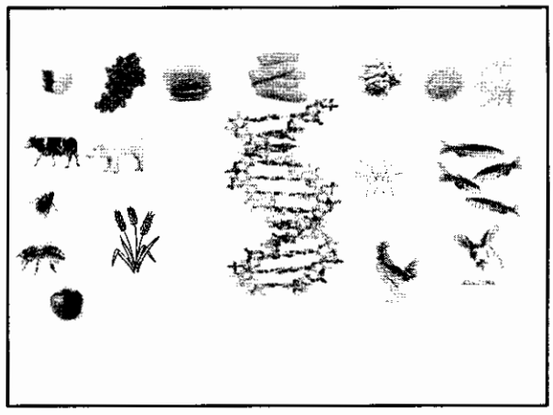
research facilities (laboratories and related equipment)

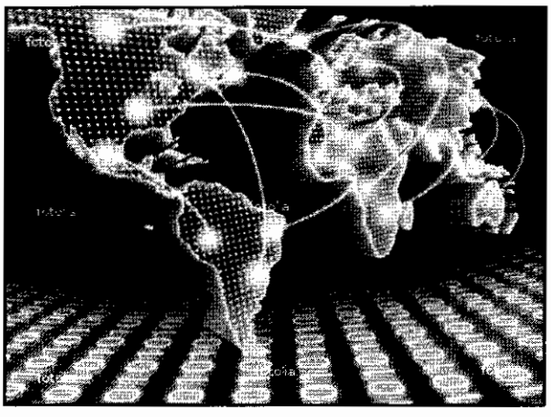


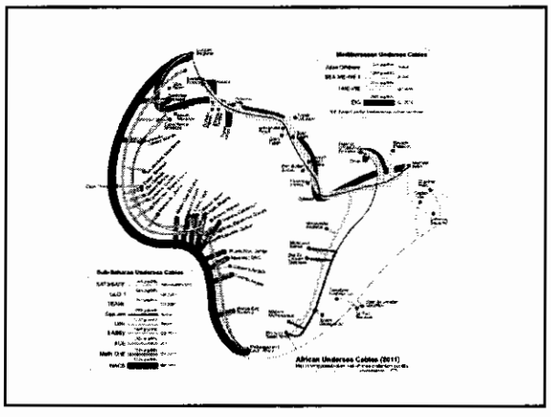
Using existing technologies

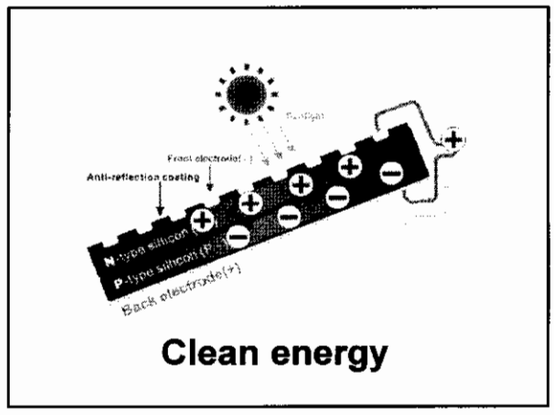




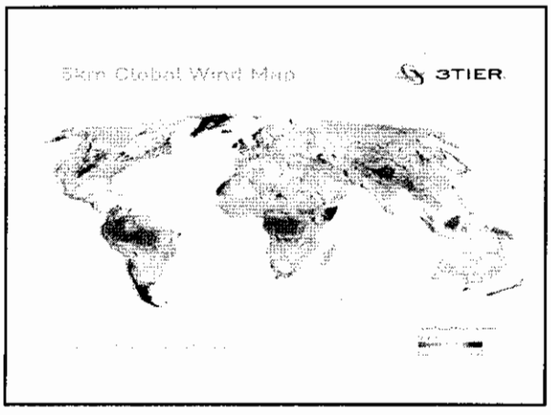


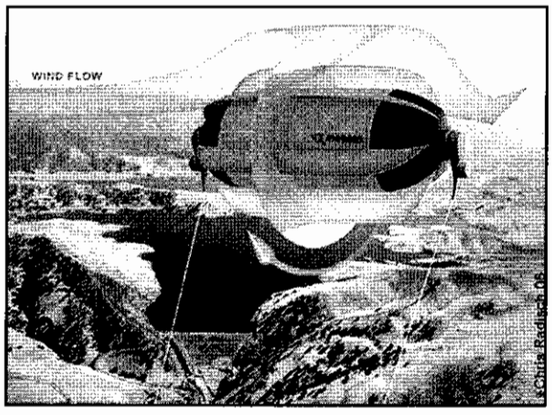


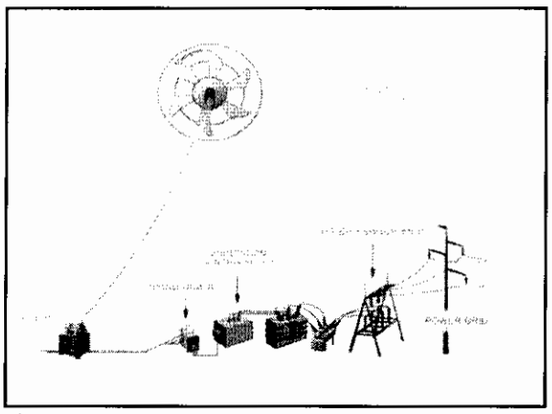


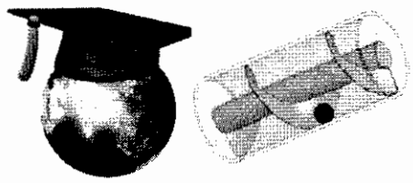


Clean energy



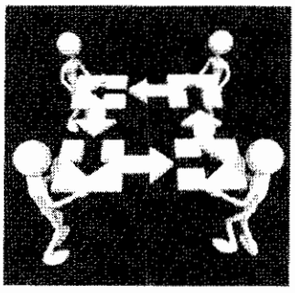






Higher technical education

Business incubation



Regional markets

African Union's Food Security Program

H.E. Tumusiime Rhoda Peace
Commissioner for Agriculture and Rural Economy
African Union Commission

East Africa Community Heads of State Retreat
on Food Security and Climate Change
2nd December, 2010
Ngurdoto Mountain Lodge, Arusha, Tanzania

1

Introduction

- **Focus of the Theme and its Global Significance.**
- **Food Security and Climate Change impact at Continental Level.**

2

Outline

1. **The African Union Agriculture & Food Security Strategy**
   - Progress on the Decision
   - Challenges
2. **Climate Change**
   - impacts on agriculture
3. **Proposals on how to respond to these challenges**

3

The AU's Agricultural Strategy

- Comprehensive Africa Agriculture Development Program (**CAADP**)
  - Adopted at the 2003 HOSG Summit in Maputo
  - Endorsed as a strategy for transforming Africa's Agriculture.
- The main elements of the strategy were and still are:
  - The pursuit of minimum 6% annual agricultural growth
  - Allocation of substantial amounts from government own resources to agriculture and related investment

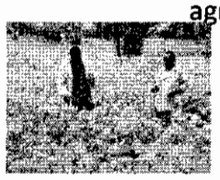
4

The Four Pillars of CAADP Include:

- **Pillar 1**: Sustainable land and water management
- **Pillar 2**: improving rural infrastructure and trade-related capacities for market access;
- **Pillar3**: increasing food supply, increased nutrition, reducing hunger, and improving responses to food crises; and
- **Pillar4**: improving agricultural research, technology dissemination, and adoption.
- **The two cross-cutting areas are**: Academic and Professional Training in Agriculture; and Knowledge Systems, Peer Review, and Policy Dialogue

Slide 5 of 29

Notable other commitments in agriculture



- Abuja food summit 2006
  - Promote and protect nine strategic commodities
  - Invest in agriculture related infrastructure through public-private partnership
  - Establish technical assistance program
  - Establish a funding mechanism for up-scaling agriculture success

6

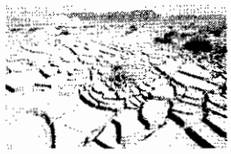
Progress in implementing the Strategy - CAADP

ECOWAS (14)	Togo	COMESA (7)	Kenya
	Sierra Leone		Rwanda
	Niger		Burundi
	Mali		Ethiopia
	Benin		Malawi
	Liberia		Uganda
	Nigeria		
	Gambia		
	Ghana	SADC (2)	Swaziland
	Cape Verde		Tanzania
	Senegal		
	Guinea Bissau		
	Burkina Faso		
	Ivory Coast		

Despite the progress... there are still challenges

8

Challenges....



- Notable progress in intensifying the collective effort to promote agriculture and food security on the continent.
- However, the situation on the ground is not encouraging.
  - Annual budgetary allocation less than 6% against the agreed targets.
  - *Average Agricultural Growth in many countries is 3% less than the anticipated 6%*

9

Challenges.....**Slow pace of implementation of the Agriculture Strategy by Member States**

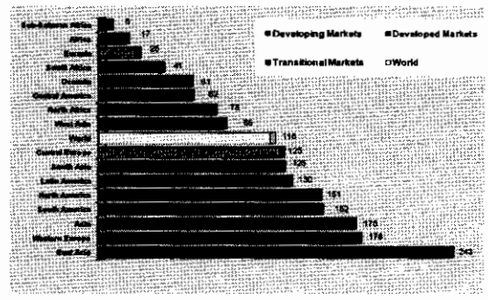
- Since 2003, it has taken sometime to translate the framework and principles into real actions for the Member States. This is indeed challenging.
- As a result, calls have been made to act beyond decisions, resolutions and declarations, but with more energies and commitment at country level.

10

- Limited fertilizer use 8kgs/ha compared to 150kgs/ha which is the global average of fertilizer use.
- Food and nutrition security on the continent has continued to experience challenges relating to a number of factors including:
  - Limited supply of food on the global market;
  - Surge in food prices for more then 50% between Dec. 2006 and July 2008;
  - Limited investment in agriculture.
- Financial crises is overshadowing the agricultural agenda.

11

Fertilizer application rates are the lowest in the World



Source: IFDC

12

Food import Bill

- Africa's annual import bill for agricultural commodities of US$ 33billion could be converted into intra-African agricultural trade and investment
- This money is being donated to the rest of the world, this could be converted into more investment in agriculture to produce for the available market

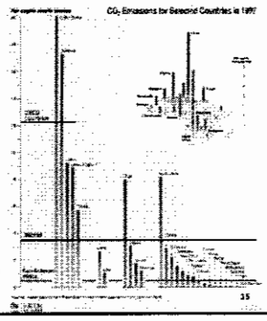
13

Let me turn briefly to the central theme of this Summit on what Climate Change will cause to Agriculture and food security.

14

Climate Change and Africa's biggest Co_2 emitters

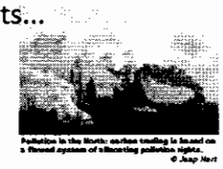
- **Africa is climate change victim number one**
- Africa is home to 15% of the world's population, but emits less than 4% of global pollutant emissions.
- **Africa will have to cope with year-round droughts**
- As temperatures rise above 2°C scientists predict that an estimated two billion people will be affected by water shortage.
- **Developing countries will suffer from sea level rise**
- According to the World Bank, the one meter rise in the sea level predicated for the 22nd century will force 16 million Egyptians to leave their homes.



15

Climate change impacts...

- If not accorded due attention the cost of climate change will be more than that of the two world wars and the Great Depression (5 to 20% of GDP). Only 1% of global GDP per annum must be invested to avoid the worst effects of climate change
- In Africa alone, between 75m and 250m people will be exposed to increased water stress due to climate change by 2020.
- A temperature rise of 2^0 would dramatically shrink the land available for growing Robusta coffee in Uganda and restrict it to upland areas.



16

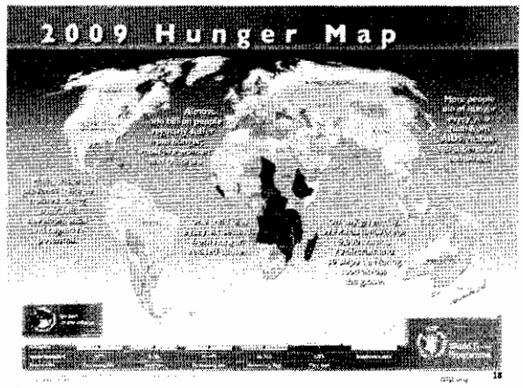
Climate change impacts..

- Demand for irrigation will grow by 5 percent to 20 percent worldwide.
- Sub-Saharan Africa's share in the global number of hungry people could rise from 24 percent to between 40 and 50 % and the dependence of developing countries on food imports could increase
- For Africa, the sad prospect is that on the aggregate, the impacts will be agricultural productivity loss of between 15 and 30 percent

Carrying firewood, about a third of Zambia's forests have disappeared in the past 20 years.
© FAO photo

Sustainable forest management or logging in line with World Bank and IMF policies ?
© USAID / L. Lariglas

17



18

What can be done to generate quick-wins in Africa and specifically in East Africa

19

Proposed quick-wins

1. Stronger Political Commitments

- The election of HE President Bingu Wa Mutharika as Chair of AU has been a boost to the African agricultural agenda.
- As you are aware, he stood against all odds and turned Malawi from a food deficit to a food surplus country within seasons and not years.
- Proposals for creating quick wins within agriculture and food security have been identified.

20

Proposed quick-wins
2. Fast-Track actions

- Agreement on policies for increased access to yield enhancing input and subsidies.
- Market stabilization measures to stabilize income of smallholder farmers to continue producing for domestic markets
- Incentives for farmers along market corridors
- Intensification of both small scale and large scale irrigation

21

Proposed quick-wins

- Collectively adapting policies for protecting African or regional markets from subsidized imports and un-predictable food aid
- Immediately implement food grain or cereal reserves especially for maize, rice, beans and other grains/cereals
- Launching substantive programs to improve nutrition of the most vulnerable

22

Proposed quick-wins
3. Addressing Climate Change

- At global level, Africa's common position advocates for placing of agriculture high on the agenda for climate change negotiations
- Adopting policy responses that not only enhance agriculture's mitigating role but also reduce the vulnerability of poor people to food insecurity
- Adopting a water harvesting program which will cushion or enhance the limited water resources
- Regardless of the approach, we must ensure that technological and institutional changes take place now, before the impact of climate change becomes too severe and irreversible.

23

Proposed quick-wins

- Greater investment in Disaster Risk Reduction(DRR).
- Ensuring faster and more appropriate responses to disasters (investing more in early warning systems)
- Investing in improved hazard and vulnerability analysis and mapping systems to better assess climate change risk.

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- Keep active in international dialogue: Look out in Mexico 2010 for highlighting so that agriculture so that it can also access climate change resources
- Securing support to our mitigation and adaptation efforts through financing and technology development transfer.
- Involvement of African agriculture and forestry in carbon markets.

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4. Increasing Investments in Agricultural Intensification

- Accelerating agricultural productivity enhancement by increasing investment and by crafting policies that make adoption of agricultural technologies affordable and sustainable.
- Prioritizing the elimination of poverty in Africa - the poor can cope with neither food insecurity nor climate change. Only prosperity can empower them to better survive the challenges ahead.
- Achieving CAADP targets requires complementary investments in other critical sectors, mainly: **Health, Education, Energy, Water** and **Infrastructure**

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On the last note

- Recent experiences of food riots in some of our countries showed us that food crises can pose a high political risk. Therefore investing in agriculture development and emphasizing food security can ensure political stability.
- Your Excellencies, the people of Africa continue to count on you.
- We have seen many examples where political leadership and commitment at the highest level has created the desired impact;

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Your Excellencies,

I Thank You for your highest attention

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EAST AFRICAN COMMUNITY

EAC FOOD SECURITY ACTION PLAN

(2010 – 2015)

Arusha, Tanzania
May, 2010

EAC SECRTARIAT,
Arusha, Tanzania,
May, 2010.

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EXECUTIVE SUMMARY

The EAC region is frequently affected by food shortages and pockets of hunger although the region as a whole has a huge potential and capacity to produce enough food for regional consumption and a large surplus for export to the world market. There are many factors leading to this state of affairs but the most critical are: (i) inadequate food exchange/trade between times and/or places of abundant harvest on one hand, and those with deficit on the other; and (ii) high variability in production caused by high variability of weather which is becoming worse due to climate change

Hence, the East African Community Food Security Action Plan has been developed to address food insecurity in the region. It forms the initial step of implementing the provisions of the EAC Treaty as set out in Chapter 18 Articles 105 -110.

One of the main objectives of the EAC as set out in the Treaty is the achievement of food security and rational agricultural production. The EAC- Food Security Action Plan will guide coordination and implementation of the joint programmes and projects emanating from this plan.

The Action Plan is organised into four sections. Section one contains the introduction which highlights the background to the development of the EAC food security action plan and the constraints in achieving food security in the EAC. Section two describes the contexts for the EAC food security action plan. Section three provides for the priority areas for the EAC food security action plan while Section four provides detailed action plans which include implementation and coordination arrangements, monitoring and evaluation and resource mobilization for implementation of the Plan.

The Plan shall be implemented over a period of 5 years, from 2010 to 2015 and the Sectoral Council of Ministers Responsible for Agriculture and Food Security will guide its implementation. For its effective and efficient implementation, it will be necessary to strengthen the capacity of the EAC Secretariat to coordinate the implementation of the joint programmes and projects emanating from this plan.

The EAC Secretariat in collaboration with Partner States will draw up a detailed annual work plan indicating financial requirements based on objectives identified in the Action Plan. The implementation of the plan will be phased starting with the crucial strategic interventions. The plans will be financed by the Community, Development Partners and investors

DEFINITION OF TERMS

Agriculture – In this document is taken to mean crop production, livestock production, fisheries and forestry.

Food Security – Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life, FAO World Food Summit, 1996, Rome.

Off Farm Employment – This means non-farming income generation activities.

LIST OF ACRONYMS AND ABBREVIATIONS

ASAL	Arid and Semi-Arid Lands
CBO	Community Based Organization
CDM	Clean Development Mechanism
COP 15	Conference of Parties -15
DFI	Development Finance Institutions
EAC	East African Community
EAC-ARDP	East African Community –Agriculture and Rural Development Policy
EAGC	East African Grain Council
GDP	Gross Domestic Product
GHG	Green House Gases
HIV/AIDS	Human Immunodeficiency virus / Acquired Immunodeficiency Syndrome
ICT	Information and Communication Technology
IPCC	International Panel on Climate Change
LVBC	Lake Victoria Basin Commission
LVFO	Lake Victoria Fisheries Organization
M&E	Monitoring and Evaluation
MDG	Millennium Development Goals
NAPA	National Adaptation Programme Action
NCD	Non Communicable Diseases
RATIN	Regional Agricultural Trade Information Network (RATIN)
SPS	Sanitary and Phytosanitary
SQMT	Standards, Quality, Metrology and Testing
WRS	Warehouse Receipt System

1. INTRODUCTION

1.1 Background to the Development of EAC Food Security Action Plan

The overall objective of the EAC Treaty regarding cooperation in agriculture and rural development is the achievement of food security and rational agricultural production. Further, the EAC Agriculture and Rural Development Policy (EAC ARDP) aims at attaining food security through increased agricultural production, processing, storage and marketing.

The EAC Agriculture and Rural Development Policy (EAC-ARDP) recognizes the importance of eliminating hunger and ensuring sustainable food security within the region as a necessary first step to poverty eradication and consequently a stimulus for rational agricultural development and realization of the aspirations of the Treaty establishing the EAC. However, before and since the signing of the Treaty, the ability of the Partner States to achieve individual and collective durable food security status has been elusive. This has been further compounded by the negative impacts of Climate Change.

The EAC ARDP guides the development of strategies and programmes and projects for realisation of the above goals of the EAC. This action plan has been developed to guide the implementation and actualization of a regional food security objective.

In this connection EAC Head of States directed that the EAC Food Security Action plan and EAC Climate Change Policy be developed to address food insecurity and adverse effects of climate change in the region.

1.2 Constraints in Achieving Food Security in the EAC

Although, food security plays an important role in achieving regional development objectives, it is constrained by;

a) Low and unstable production and productivity occasioned by over-reliance on rain-fed agricultural production systems.

b) Low surface water storage per capita in the EAC region.

c) Inefficient utilization of water resources for production including for irrigated agriculture.

d) Poor or no access to affordable agricultural credit by resource poor producers.

e) Low producer prices making agriculture less remunerative.

f) Uncertainty in income flows due to price volatility in agricultural commodities.

g) Inadequate and weak farmer's institutions incapable of supporting a vibrant agricultural sector.

h) Inadequate infrastructure such as transport, communications, storage and processing facilities etc that hinders access to factor and product markets within, between Partner States and beyond.

i) low usage of agriculture production enhancing inputs such as fertilizer, improved seeds, agrochemicals and veterinary drugs etc

j) Inadequate institutional support to livestock production systems in arid and semi arid areas.

k) Inadequate institutional support to the fishing industry including capture and aquaculture fisheries.

l) Increased frequency and severity of extreme weather such as floods and drought as a result of global warming and climate change, adversely affecting food production.

m) Inadequate flow of information on the adverse climate change impacts and actions to the producers

n) Prevalence of HIV/AIDS and other tropical human and animal trans boundary diseases that not only divert the already constrained resources from agricultural production but also waste the labour force.

o) Increased pressure on natural resources and degradation of environment due to rapid population growth, poor soil management practices, overgrazing etc.

p) High post harvest losses due to inadequate/lack of food storage and processing facilities.

q) Disruption of food production and distribution due to social unrest and political instability.

r) Inappropriate and low adoption of production methods due to inadequate research and extension services.

s) Inadequate food access particular among the vulnerable population /resources poor population.

t) Gender imbalances in access to opportunities in production, marketing and consumptions, access and control of productive resources.

2.0 THE CONTEXTS FOR EAC FOOD SECURITY ACTION PLAN

2.1 The East African Common Market Protocol as an Important Instrument of Ensuring Food Security in the Region

In the EAC region the food production, processing and preparation sector remains a key sector in the economies of the member states. It is estimated that between 70% to 80% of the labour force of the EAC is involved in the food sector in one way or another. Between 24% and 48% of the GDP of the member countries, is attributed to the agriculture sector. These figures may be an under-estimate because they often do not take into account of livestock, fisheries and other food supply systems.

The 2009 Economic Report on Africa (ERA, 2009)[1], explicitly recognized the potential regional agricultural value chains supported by agribusiness and agro-processing as a basis for linking especially the smallholder producers to markets for food and other agricultural products. Therefore, the East African Common Market (EACM) provides the best opportunity for building such value chains, because it provides a framework for exploiting economies of scale in the production and supply of food.

The realization of a regional economic bloc encompassing five countries leading to a combined population of over 120 million, land area of 1.85 million km2 and a combined GDP of US$ 73 billion, is an opportunity for enhancing food security that should be used with all the priority it deserves.

2.2 The Need for Regional Policy and Standards for Food Security

The regional perspective required to accelerate food security in East Africa is currently seriously hampered by the frequent imposition of export bans even between districts within one country. This practice results in the separation of surplus food production zones from the deficit markets they would normally serve in both large cities and rural areas. A recent assessment report by the World Bank of maize marketing in East Africa[2], revealed the following:

- Protectionist measures through export bans lead to lost opportunities for farmers and traders, who then reduces their investment in production in subsequent seasons leading to overall reduction in food production,
- Apart from reducing potential outputs, arbitrary bans on selling of cereals leads to reduction in quality, quantity and value, causing losses to the economy as a whole, and
- The export bans and other trade restrictions scare away private sector development and investments in the food sub-sector, leading to sluggish growth in the sub-sector, and lost opportunities for farmers and consumers.

The EAC is in the process of development, adoption and implementation of regional legal, regulatory and institutional framework for EAC SPS Protocol. The draft EAC SPS protocol was adopted by the last Sectoral Council on Agriculture and Food Security which was held on 2nd December, 2009.

The principal objective of the EAC SPS Protocol is to adopt and enforce sanitary and phytosanitary measures in order to minimize their negative effects on trade. The Protocol elaborates rules for application, which relate to the use of sanitary and phytosanitary measures, and recognizes the rights of importing countries to implement these measures.

2.3 Critical Infrastructure Especially in the Rural Areas

[1] Economic Report on Africa 2009: Developing Agriculture through Regionally Integrated Value Chains, United Nations Economic Commission for Africa, Addis Ababa, 2009.

[2] World Bank (2009). Eastern Africa: A study of the regional maize market and marketing costs. Report No. 49831 - AFR

The EAC in general and the member countries in particular are doing a commendable job at investment to build new, and upgrade infrastructure along the main transportation corridors. The EAC countries are leading the continent in playing its part in initiatives designed to interconnect the networks of the various countries as part of the development plans outlined by the African Union through the NEPAD Infrastructure Plan.

However, studies supported by Kilimo Trust (KT) and FAO in East Africa have shown that the missing link is in feeder roads and other market-facilitating infrastructure in the rural areas[3]. Therefore, efforts in development of major corridors should be balanced with accelerated parallel investment on rural feeder roads, which have been shown to have a significantly higher impact on agricultural productivity, response to price signals by producers, and reduction of marketing costs.

Furthermore, rural roads connect the national and regional roads and railways to the production areas increasing the efficiency of consolidation of cargo for the large trucks and thus optimizing the utilization of the transportation infrastructure in general. Success of the EAC Food Security Action Plan will depend on efficient connectivity that will increase confidence of the producers on the market, so as to convince them that they can focus on their comparative advantage and produce surplus for the market, while depending on the same market to supply what they would like to consume but do not have the comparative advantage in producing it.

2.4 Development of Agro-industries for Value-addition Processing

The World Development Report 2008 called for an accelerated expansion of the share agro-industries in agricultural GDP as a way of making agriculture an engine of economic growth and reduction of poverty. This is because agro-industries create forward and backward linkages, leading to significant multiplier effects, generating demand for agricultural produce and associated inputs and services, creating on- and off- farm employment, enhancing incomes and contributing to value addition and increased public sector revenues. Through the development of agro-industries, access to markets, finance and technical assistance can be facilitated for smallholder producers, promoting their inclusion into modern and efficient value chains.

Value-adding agro-processing of food commodities increases food security in four major ways; namely:

i) Reduction of post-harvest losses which are currently estimated by several organizations (FAO, CIRAD, NRI and UNIDO) to be as high as 30% in cereals, 50% in roots and tubers, and up to 70% in fruits and vegetables;

ii) Extending the shelf-life of food, making most food especially perishables tradable and easier to move over long distances from areas with surplus to areas with deficits;

iii) Enhance incomes and creation of employment along the food chain from production to marketing; and

[3] KT and FAO (2009) . Investing in *Last Mile* Market Oricnted Agricultural Infrastructure in Africa. Report of the FAO-Kilimo Trust Roundtable, 8th – 10th June 2009, Kampala, Uganda

iv) Improving the quality and safety of foods through appropriate certification, traceability systems and harmonization of standards, thus improving access to markets.

Furthermore, expanded agro-industries will contribute to poverty reduction through combined effects of employment gains, income enhancement, inclusiveness and food security.

2.5 Development of Insurance Instruments

Agriculture in general and food supply in particular are faced by many risks, including:

- *Production Risk* – due to weather calamities such as drought and floods as well as pest, disease, fire and many other perils mainly impacting the primary producers;
- *Market or Price Risk* – caused by volatility of prices in which case in some years the prices received for primary produce and products may not cover basic costs of production;
- *Input Cost Risk* – the cost of inputs, impacted by the cost of raw materials, is variable and may be higher than the price received for the commodity produced;
- *Transaction Risk* – associated with receiving payment and/or the delivery of agriculture commodities within an international trading environment; and
- *Food Safety Risk* – associated with producing a safe food product (or perceived safe food product) for consumers.

However, temporal and spatial variability of climate, especially rainfall, is the major risk facing producers, agro-processors and consumers in EAC. Analysis of climatic data shows that the coefficient of variation of rainfall in semi-arid tropics can be as high as 50% and most of the annual rainfall often falls in few rainfall events within three to five months of the year. Evidence is emerging that climate change is making the variability more intense with increased frequency of extreme events such as drought and floods, which sometimes occur within one season in one location.

At regional and national levels, the consequences of climatic variability are a major cause of large economic losses such as destruction of infrastructure – for example, nearly 10,000 km of rural roads were destroyed in Uganda alone during the El Nino rains of 1997. At community and individual level these disasters lead to death, loss of livelihoods, destruction of assets and thus increased vulnerability. In the EAC sub-region droughts following floods have been a major cause of famines affecting millions of people in the last 50 years.

A major drought affecting several parts of the EAC is recorded in at least every 10 years with amazing regularity. It is therefore important to understand, adapt and cope with climate variability so as to ensure food security.

Insurance is one of the means for mitigating the financial effects of risks associated with variability of weather and prices. Its main purpose is to provide monetary means of offsetting losses suffered by producers and other agro-entrepreneurs in the case of severe and catastrophic weather events such as drought and floods. If well applied, weather-indexed based insurance has several positive outcomes particularly important for the smallholders as well as the agricultural system that supports them:

i) Encourages investments by farmers in productivity-enhancing inputs leading to a better exploitation of GOOD seasons. Currently, to avoid the risk of losing their investment in inputs, most smallholders adopt strategies that work during poor seasons. This means that they do not reap the benefits from the more frequent normal and better rain seasons.

ii) Facilitates credit availability. Due to the risk associated with agricultural production, producers in general and smallholders in particular have historically been unable to access credit financing. The administrative cost of financing small, high risk loans has affectively precluded many smallholders from credit. With an insurance arrangement that will pay off part or the entire loan in case of severe drought, the chance of default is reduced and so credit recovery costs are also reduced. This reduction in administrative costs should encourage lenders to provide more credit to smallholder producers.

iii) Reduce the need for food aid and hand-outs. Since there is less dependence on these welfare-type programs, confidence will be built among smallholders in their ability to be self supporting. Furthermore, governments will have less pressure for providing food aid and similar type programs.

iv) Many markets require sufficient volume to justify the necessary infrastructure. Insurance may encourage the use of inputs or other cultural practices that enhance agricultural productivity. The increased volumes should lead to increased agri-business investments in the necessary marketing structures so the smallholder producer can access more market alternatives.

2.6 Food Access and Utilization

Self-sustaining domestic markets for food are non-existent in the rural areas due to lack of purchasing power. Most of the food is consumed by those who produce it, and most of the surplus production is left to go to waste. Even the burgeoning urban areas are dominated by poor under-employed people with very little purchasing power to save as a significant "real" market. This is what leads to the "fallacy of composition" for producers venturing into adopting productivity-increasing technologies and practices, who find that they cannot recoup their investments. This is a poverty trap which unfortunately is perpetuated by intervention programmes that are solely focused on pushing inputs and extension to increase production and not income generation to increase/improve the purchasing power.

To overcome this problem, more investments are required in deliberate efforts to transform a proportion of smallholders from direct producers of food commodities, to entrepreneurs dealing with non-food and high value commodities, non-farm agricultural enterprises especially in the value-addition processing industries, and non-agricultural rural enterprises such as cultural tourism, forestry and services. The idea here is to create a genuinely thriving local and national market for food commodities and products so as to achieve locally-generated attractive returns to those who continue with food production enterprises. In summary, we need a change of gear from efforts to link food producers to distant and limited urban and overseas markets, to investing in creating and expanding the markets for food commodities at local levels.

The radical change of approach required is to link emergency food aid to long-term development. This is because trends show that while one part of a country or sub-region suffers from food shortage and is receiving food aid from developed countries, another part of the country or sub-region is forced to abandon bumper harvests to rot in the field for lack of a market. This kind of approach will increase the capital flow to help food producing households and communities build up their asset base to be able to effectively deal with their own emergences in the future.

2.7 Production and Productivity of Food in the EAC Region

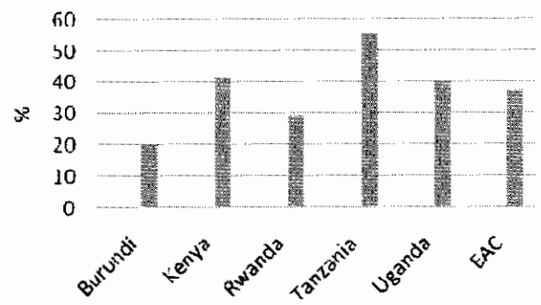
In calling for African Green Revolution, H.E Kofi Anan once remarked that *"the knowledge required for Sub-Saharan Africa to achieve its own green revolution is not lacking, what is lacking as ever, is the will to turn this knowledge into practice...* [4]" This was corroborated by the World Development Report, which estimated that the rate of use of improved varieties in SSA was about 24%, use of chemical fertilizer stood at only 13%, and use of appropriate water control systems for agriculture covered only 4% of the cultivated land.

Consequently, low yields are widespread. For example, the average grain yield in rain-fed farming is about 1 t/ha for smallholders, while under similar agro-climatic conditions, on-station yield levels of grain maize reach between 5-6 t/ha, and commercial farmers generally operate at much higher yields of 7-8 t/ha. In the dry areas, yields achieved by smallholders average 0.5 t/ha. Yet, billions of US$ have been used for research by international, regional and national organizations to develop new varieties, agronomic and husbandry practices, and other technologies such as irrigation and processing. More importantly, there are a multitude of experiences, best practices and lessons that have been generated by farmers and other agro-entrepreneurs, as well as by many agricultural development programs. Most of these are not being adopted at scale.

The EAC region is endowed with ample land resources which to some extent are under-utilized for various reasons (Figure 1). One of the main

[4] HE Kofi Annan, MDG Technical Support Centre, 2004

Fig. 1: Estimated % of Underutilization of Arable Land in the EAC



characteristics of land use in the sub-region is the high concentration of people and livestock in highlands areas because of some high potential features such as long LGP, cooler climates and deep soils. At the same time there are vast stretches of land with good soils but under-utilized because of shortage of water. Opening up the underutilized lands will call for increased productivity of livestock systems as they are the most dominant and feasible systems in these areas.

The portions of land used in both the humid and semi-arid areas experience accelerated degradation through loss of vegetation cover and reduction of soil productive capacity from soil erosion, salinization and nutrient over-exploitation. More than 95% of crop production is by smallholder farmers mostly using low inputs. The intensive low-inputs systems accelerate the lowering of soil quality, in other words the capacity of soil to maintain productivity through plant growth and environmental health. Estimates made at continental level show that the rate of loss of nutrients from smallholder fields are in the range of 660 kg N ha-1, 75 kg P ha-1 and 450 kg K ha-1.

The Abuja Fertilizer Summit[5] resolved that the African Union member states will accelerate the timely access of farmers to fertilizers so as to increase the level of use of fertilizer from the current average of 8 kilograms per hectare to an average of at least 50 kilograms per hectare by 2015. Some of the means suggested include:

- Reduce the cost of fertilizer procurement at national and regional levels.
- Developing and scaling up input dealers' and community-based networks across rural areas.
- Granting, with the support of Africa's Development Partners, targeted subsidies in favor of the fertilizer sector, with special attention to poor farmers.
- Accelerate investment in infrastructure, particularly transport, fiscal incentives, strengthening farmers' organizations, and other measures to improve output market incentives.
- Establish Regional Fertilizer Procurement and Distribution Facilities through strategic public-private partnerships.
- Promote national/regional fertilizer production and intra-regional fertilizer trade to capture a bigger market and take advantage of economies of scale.

[5] http://www.africafertilizersummit.org/

- Establish an Africa Fertilizer Development Financing Mechanism that will meet the financing requirements of the actions agreed upon by the Summit.

Water for agriculture: The supply of water is skewed both temporally and spatially. In most cases it is the temporal variations rather than amount of rain which brings most problems to rain fed systems. However, it is important to pay attention to rain fed crop and livestock systems as they currently supply more than 90 % of the food consumed in the region. Even in the semi-arid areas there is plenty of rainwater but more than 60% often goes back to the atmosphere unutilized for any productive purposes. The main requirement is management interventions which enable beneficial plants to use effectively, through transpiration, the rainwater available on-farm.

The basic principles are simple and have been known for a long time; they are:

- Optimizing infiltration – the main purpose being to reduce non-productive depletion of the rainwater through evaporation and run-off, while reducing erosion and increasing re-charge of ground water
- Increasing the water-holding capacity of soil within the root zone – to make most of the captured water available to plants
- Ensuring an efficient water uptake (*i.e. high ratio of transpiration/evapo-transpiration*) by beneficial plants – achieved through appropriate agronomic and husbandry practices
- Optimizing the productivity of water used by plants, in value of products – through the choice of crops with sufficient demand in accessible markets.

Irrigation development has focused most attention on civil engineering structures for water diversion rather than the management practices needed to optimize water use efficiency at field level. In most cases once a field is treated to meet the four principles above, irrigation may only be required as a strategic supplement to mitigate the effect of dry spells. But one would ask, since the principles mentioned above are so simple why are they not widely adopted?

Most of the river flow in the region has not been mobilized such that the installed capacity for storage of water is on average 500 m^3 per capita. In the USA or Australia the installed water storage capacity is more than 5,000 m^3 per capita. Furthermore, out of the world's 45,000 large dams, only 1,000 (2%) are in SSA and nearly all (600) in one country, South Africa. Large countries like Tanzania have less than five large dams.

The EAC region is also home to several lakes each with more than 25 km^2 surface area, including Lake Victoria and Lake Tanganyika, counted among large lakes in the world. Wetlands are critical ecosystems in the sub-region with the wetlands in highland countries such as Burundi, Rwanda and Uganda. Therefore, the EAC region has an economic water scarcity because of inadequate investments in water control structures and systems for effective management of water resources.

There is nothing that demonstrates the role of water control infrastructure, than the sheer scale of investment on such infrastructure by the rich countries.

For example, in Japan, heavy investment in water control infrastructure since the 1970s has reduced annual economic losses due to floods from 20% of GNI, to less than 0.5%. In both the developed world and developing countries, investments on infrastructure to harness water for agriculture have led to tremendous positive impacts in the creation of wealth and improvement of food security. Furthermore, experience from both rich and developing country show that apart from securing water supply, infrastructure plays a major role in protecting people and their properties against the vagaries of floods and drought. It is estimated that in Tanzania, 70% of declared disasters are water related, 37% caused by floods and 33% caused by drought. Therefore, the lack or inadequate water control causes so much destruction to the economy and livelihood assets, such that a single event of meteorological drought in a 12-year period lowers the GDP by 7–10% and increases poverty by 12-15% on top of wiping out all the assets of majority of the poor.

Key issues on water resources in the EAC are:

- Improving the productivity of water at farm level through a strategic mix of enterprises, integrated Agricultural Water Management (AWM) approaches and water management technologies in both rainfed and irrigated agriculture,
- Enhancing economic benefits while containing environmental impacts at local, watershed, national or basin levels, as a result of increased use of innovations and technologies for enhancing the farm level productivity of water in the upper catchments,
- Improving incentive (such as trade) and governance mechanisms to bring about beneficial uses and management of water in the upper catchments while maintaining or improving water availability for downstream or eco-systems needs,
- Combining indigenous knowledge with cutting edge information technologies to develop the most appropriate decision support tools for different stakeholders (including individual resource users) to improve planning for sustainable use of water, and
- In-building adaptation to climate change in all agricultural and water development strategies and programmes.

One of the major contributors to food insecurity and poverty in the EAC is inadequate use of livestock assets. Figure 2 provides statistics assembled from different sources for the two main types of livestock, namely ruminants and poultry. These statistics show that the size of livestock asset in the region is estimated at 41 million cattle heads, 33 million goats, 14 million sheep, 900,000 camels, and 130 million poultry. There are also other livestock such as pigs (3 million). Statistics also show that bee-keeping is an important undertaking by the smallholders in East Africa.

To gauge the potential of the livestock sector in food security and reduction of poverty, there is a need to assess the extent to which the livestock assets, as depicted in Figure 2, are converted into income per year. Despite the large livestock population in the region, the production of different livestock

products for the market, is very low (Tables 1 and 2). On average beef production is estimated as just below 800,000 MT. Off take from small ruminant livestock is estimated at an average of 130 MT which could be a gross under-estimation because majority of goats and sheep are consumed within the producing households. Similarly the estimated average production of 108 MT of poultry meat could be a gross under-estimation because majority of the poultry and poultry products are consumed within the producing households. However, the free-range poultry is one of the most important assets of rural poor households. Pig meat production in the EA region is estimated at 111 MT per annum of which about 70% is produced in Uganda. For hides and skins, available statistics show that 5.71 million pieces of hides and 12.31 million pieces of skins (goats and sheep) are produced annually in the EA region. These are equivalent to 129,070 MT.

Table 1: Estimated annual production of products from slaughtered animals

Country	Beef (MT)	Goat and Shee Meat (MT)	Poultry Meat (MT)	Pig Meat (MT)	Hides and Skins ('00 pieces)	
					Hides	Skins
Burundi	9,000	4,000	5,000	5,000	36	325
Kenya	290,000	53,000	20,000	12,000	2,420	6,900
Rwanda	19,000	3,000	1,000	3,000	75	342
Tanzania	370, 000	40,000	41,000	13,000	1,980	2,740
Uganda	97,000	31,000	41,000	78,000	1,209	2,000
Total	785,000	131,000	108,000	111,000	5,710	12,310

Source: National Statistics

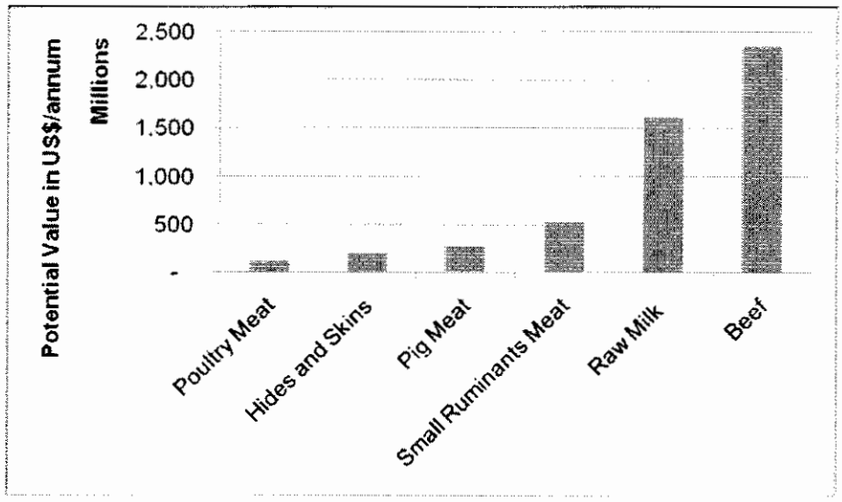
Table 2: Estimated annual production of products from live animals

Country	Milk (MT)	Eggs (Numbers)	Wool (MT)	Honey (MT)	Beeswax (MT)
Burundi	19,000	3,000		800	800
Kenya	4,000,000	1,255,000	1,500	20,000	20,000
Rwanda	120,000	2,000		1,000	1,000
Tanzania	715,000	63,000		45,000	16,000
Uganda	511,000	20,000		14,000	11,000
Total	5,365,000	1,343,000	1,500	80,800	48,800

Source: National Statistics

Figure 1 (below) shows a rough estimate of the value of major livestock products harvested each year in the region. These estimates have been made using average world prices and it is estimated that these values could be realized in the city markets in East Africa. Given the size of wealth held in the form of livestock, it is frustrating that poverty is so widespread in livestock keeping areas (including agro-pastoral and pastoral areas with large livestock numbers). In Tanzania, for example, agro-pastoral and pastoral areas account for 95% of the cattle population, yet most agro-pastoral and pastoral households live below the poverty line of US$ 1 per day (Mdoe *et al.*, 1998).

Figure 1: Estimated annual value of selected livestock products total fo the EAC at world prices



The above evidence provide for the cause of EAC becoming an Important Exporter of Food Products to Exploit Global Markets for Food.

3. PRIORITY AREAS FOR THE EAC FOOD SECURITY ACTION PLAN

3.1 Provision of Enabling Policy, Legal and Institutional Framework

- To create a harmonized approach for enhancement of food security in the East African region.

3.2 Increase Food Availability in Sufficient Quantity and Quality

- To increase agricultural (crops, Livestock and Fisheries) productivity and make East Africa Region a net exporter of food.
- Ensure that food is effectively moved from areas of surplus to areas of deficit within the East Africa region.
- To deliberately improve exploitation of alternative sources of food supply from crop, livestock, marine and fisheries, and forestry systems.

3.3 Improve Access to Food

- Improve Physical Access to Food.
- Put in place structured trading system for food commodities and products.
- To improve food purchasing power of Individuals, households and communities.

3.4 Improve Stability of food supply and access in the EAC Region

- To improve capacity for emergency preparedness and response.

3.5 Enhance the efficiency of food utilization, nutrition, and food safety

- To Improve on nutrition and food safety.

3.6 Implementation Strategy and Monitoring

Guided by the Agriculture and Rural Development Strategy for the East African Community (2005 - 2030) and other EAC relevant documents.

3.7 Resource Mobilization and Time Frame

Financial resource will be mobilized mainly from EAC Partner States and Development Partners. The Plan will cover a period of 5 years from 2010 to 2015.

As a cross cutting issue, all food security strategies and actions will have in-built gender and HIV/AIDS considerations.

4. DETAILED ACTION PLANS

4.1 PROVISION OF ENABLING POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

Objective 1: To create a harmonized approach for enhancement of food security in the East African region

Output	Baseline	Target	Actions	Actors	Estimated Costs	Time[6] frame
1. Regional food security and nutrition policy developed and adopted by stakeholders	Various national policies and regulatory frameworks related to food security and nutrition in place in each partner state Agriculture rural development policy and strategy for East Africa	Regional food security and nutrition policy developed by 2011 Public awareness created by 2015	i) Analysis of food security and nutrition issues in the region ii) Review policies, legislation and strategies related to food security and nutrition for each partner state iii)Develop a regional Food security and nutrition policy iv)Public awareness campaigns	EAC Secretariat Partner State Agriculture Sector Lead Ministries, Ministries of Health, responsible for disaster preparedness trade, regional cooperation and local government, private sectors, non state actors.	US $ 3m	2010-2015

[6] Short term is one to three years, while four to five years is medium term

2.	Regional SPS legal, regulatory and institutional framework adapted and enforced	Draft EAC SPS Protocol	Regional SPS legal and regulatory framework adapted by 2011	Finalize and approve the SPS protocol Develop harmonized food safety measures and implementation procedures Develop the regulatory framework Establish a framework for operation and implementation of the EAC Harmonized Sanitary and Phytosanitary measures within the Community	SPS Authorities, EAC , EAC Sectoral Council on EAC Legal and Judicial Affairs, Private sector and relevant Ministries	US $ 0.5m	2010-2012
3.	Regional standards, legal, regulatory and institutional framework adopted and enforced	EAC Protocol on Standards and EAC SQMT Act	Regional harmonized standards for target food products by 2011 Regional standards legal, regulatory institutional framework adapted by 2012	Establish regional standards legal, regulatory and institutional framework to ensure enforcement of EAC standards Develop regional standards for target food products Sensitization and	EAC Secretariat, Partner State Bureaus of Standard ministries responsible for Agriculture, Livestock, fisheries, Water, trade, regional cooperation and local government,	US $ 2.5m	2010-2012

			training of key stakeholders	private sectors, non state actors[7]		
5. Regional mechanism for management of strategic food reserve established	No mechanism for monitoring food balance in region.	Regional food balance sheet and food reserve facility in place by 2012 Predictable regional based model pegged to regional strategic food reserve to replace ad hoc national based export/import restriction model of food products Food Security in the EAC monitored.	Establish and introduce EAC Food Information System and regulatory measures to ensure accurate information of available food at any time Establish sustainable institutional framework for pooling regional food balance sheet Develop regional food balance sheet on monthly basis Develop and adopt predictable regional based model for management of regional strategic food reserve Establish food reserve facility both physical	Ministries of Agriculture, Livestock, Fisheries, Trade and Finance, National Food Reserve Agencies and private sector institutions	US$, 1.5m	2010 – 2011

[7] *Includes civil societies, CBOs, women organizations etc*

			and financial Capacity building for key stakeholders			
6. Awareness on Customs clearance procedures enhanced.	Inadequate awareness on cross border procedures encouraging informal trade routes.	Regional awareness programme in place.	Development of awareness programme Create awareness on simplified EAC trade regime	Revenue Authorities, ministries of trade and private sector associations	US$ 0.25m	2010 - 2012

4.2 INCREASE FOOD AVAILABILITY IN SUFFICIENT QUANTITY AND QUALITY

Objective 2: To increase agricultural (crops, Livestock and Fisheries) productivity and make East Africa Region a net exporter of food

Output	Baseline	Target	Actions	Actors	Estimated Costs	Time frame
1 Use of improved/appropriate technologies inputs (fertilizers, chemicals, farm machinery, seeds and planting materials feeds, animal husbandry inputs, organic manure, ,,. Agricultural production in the regional increased. veterinary products materials in production systems	Food Production performance against potential levels due to low use of inputs. Gender imbalances exist with regards to access and control of productive resources	i. Production and productivity of crops increased by 15 % by 2015 (ii)Increase funding to the agricultural sector up to 10 % of national budget as per Maputo declaration by 2015	Establish mechanism that ensure agricultural inputs are available at affordable prices Promote integrated nutrient management system Promote targeted small, medium and large investment financing Promote soil conservation measures Support construction of a regional fertilizer processing plant to lower costs Ensure effective and efficient provision of training & extension services on food production, processing,	EAC secretariat, EAC Ministries in each member state Ministries responsible for gender issues Agricultural Sectors/trade, Industrial Ministries Local communities including CBOs and women organizations. Ministries responsible for gender issues Private sector, Civil society International Development partners	US $5.5bn	2010- 2015

Output	Baseline	Target	Actions	Actors	Estimated Costs	Time frame
increased)			post harvesting handling and marketing Streamline gender issues, Enhance development and sharing of knowledge and technologies through regional coordinated research and appropriate extension packages including production according to agro-ecological conditions considering gender concerns Encourage adequate allocation of suitable land to food production Support and promote access of women to productive resources Undertake range land rehabilitation and development	Ministries responsible for Planning, Finance, Water & Irrigation, Agriculture sector /productive sector Private sector, Research institutes and Civil society		
		Production and productivity of Livestock and Fisheries increased by 15 % by 2015				

Output	Baseline	Target	Actions	Actors	Estimated Costs	Time frame
			Promote investment in efficient and sustainable food production systems, Support Plant, Livestock and Fisheries Genetic Resources improvement. Promote measures to improve animal health including Transboundary diseases Promote forage conservation for animal feeding Promote sustainable utilization and management of land, livestock and fisheries resources including Aquaculture promotion.			
2. The use of water for agricultural	The use of water for agriculture production in the	ii) Increased surface water storage per	Promote integrated water resources management in the EAC	Ministries responsible for Water, Agriculture, Fisheries,	USD 10bn	

Output	Baseline	Target	Actions	Actors	Estimated Costs	Time frame
production increased and optimized	EAC is very low. Current water withdrawals for irrigation as % renewable water resources: Tanzania – 2 % Uganda – 2 % Kenya – 3 % Rwanda – 3 % Burundi – 3 %	capita by 15% by 2015	including joint water systems. Encourage the EAC Partner States to speed up finalization of the comprehensive framework for the River Nile. Construct appropriate water structures for livestock, irrigated agriculture and aquaculture Optimize land preparation and conservation tillage for agriculture, livestock and rangelands Match available water resources with appropriate crop, livestock and fisheries production	Livestock development, Local government, Communities, Private and Non state actors.		
	irrigated acreage (Ha): Kenya – 103,203	(iii) Expand irrigation by 15% of the	Develop regional master plan on water use	Ministries responsible for Water, Agriculture, Fisheries,	USD 4.5bn	

Output	Baseline	Target	Actions	Actors	Estimated Costs	Time frame
	Tanzania – 310,745 Burundi – 21430 Uganda – 14, 317 Rwanda – 13,500	potential irrigable land by 2015.	Enhance management of water for agriculture and pasture lands in both rain fed and irrigated systems Support development of major irrigation infrastructure Promote efficient utilization of water resources through irrigation technologies and appropriate research	Livestock development, Local government, Communities, Private and Non state actors.		
3. Losses of fish, livestock and crops due to pests and diseases reduced.	Present level of pests and disease incidence is high-estimated at more than 40%	Economic losses reduced by 30 % by 2015 At least 5 disease controls and surveillance centers strengthened and functioning well by 2015.	Develop and Support pest and disease surveillance system in the region. Enforcement of disease and pest control measures and procedures. Develop regional	EAC Secretariat, EAC Ministries in each Partner State, Ministries Responsible for Agriculture, Livestock, fisheries, health, Private sector, communities, pastoralists	US $ 100m	2010-2015

Output	Baseline	Target	Actions	Actors	Estimated Costs	Time frame
			disease and pest control regimes in the EAC.			
4 Post harvest losses Reduced	Post-harvest losses currently up to 40 % for cereals and pulses, and up to 70 % for fruits and vegetables High livestock products and fish losses Value addition currently less than 10 %	Reduce post-harvest losses to less than 20 % by 2015	Support and promote capacity building for development, management and use of appropriate storage facilities, technologies and materials at all levels including at household level Promote cross border utilization of public/private storage facilities EAC coordinated backbone programmes to accelerate agro-industry development Promote Agro-processing and handling of food	Agriculture and rural development sector ministries, Ministries of Finance and Trade, and the private sector	US $ 2m	2010 - 2012
5. Food wastage reduced	Food wastage currently estimated at 40 %	Increase value addition to at least 20 % by 2015	Targeted training on value addition technologies Targeted promotion of	Agriculture and rural development sector ministries, Ministries of Finance, Trade and	US $ 2bn	2010 -2015

Output	Baseline	Target	Actions	Actors	Estimated Costs	Time frame
			investments and linkages with technology developers/suppliers and financiers Provide key marketing infrastructure in rural areas	industry, and the private sector		
		Reduce food wastage to below 20 % by 2015	Raise awareness on the extent of wastage and its causes Monitor food wastage Promote technologies and practices that reduce food wastage.	Agriculture and rural development Sector ministries, Ministry of trade and industry and the private sector	US $ 2m	

Objective 3: To ensure that food is effectively sourced from areas of surplus to areas of deficit within the East African Community region

Output	Baseline	Target	Actions	Actors	Estimated	Time frame

1. Intra-regional trade share in regional food products market Increased	Presently intra-regional trade share in total regional market for food products is less than 10% for most traded food products	Increase intra-regional trade share in regional food products market to 30% by 2015	Strengthen current food information systems within EAC Partner States Facilitate easy access to trade policy and regulatory requirements for trade in food products Training/awareness creation on regional trade opportunities and regulatory requirements Avail trade finance targeting intra-regional trade in food products Improve marketing efficiency.	Private sector, public institutions facilitating trade and financial institutions	US$ 4m	2010-2015

Objective 4: To deliberately improve exploitation of non-conventional sources of food supply from crop, livestock, marine and fisheries, and forestry systems.

Output	Baseline	Target	Actions	Actors	Estimated cost	Time frame
1. Food products diversified	Overdependence on very few food items	Dependence on major tradable	Develop standards for blending of popular cereal flours with flours	EAC Secretariat, EAC	US $ 1m	2010 - 2015

Output	Baseline	Target	Actions	Actors	Estimated cost	Time frame
		cereals for caloric supply reduced by 20 % by 2015	of other traditional crops such millet and sorghum and non cereal crops such as cassava, potatoes and yams Promote development of blending of agricultural products	Ministries in each Partner State, Ministries Responsible for Agriculture, Livestock fisheries & health, natural resources Private sector		
	Almost all sources of food other than cereals are perishable. Consumption of emerging livestock, fisheries and forestry products currently low & losses are very high	Increase consumption of emerging livestock, fisheries and forestry products by 3 % annually	Establish the nutritive value and acceptability of different **non-conventional** sources of food including for special interest groups such as HIV/AIDS Create awareness on nutritional value of and promote utilization of **non-conventional** foods & food preparation & preservation methods Promote fish farming especially among	EAC Secretariat, EAC Ministries in each Partner State, Ministries Responsible for Agriculture, Livestock fisheries, health Private sector	US $ 100m	Medium term

Output	Baseline	Target	Actions	Actors	Estimated cost	Time frame
			smallholder farmers and the youth Promote farming of emerging livestock and forestry products			

4.3 IMPROVE ACCESS TO FOOD

Objective 5: Improve Physical Access to Food

Output	Baseline	Target	Actions	Actors	Estimated Cost	Time Frame
1. Market infrastructure improved	Inadequate market centers and infrastructure	Put in place /upgrade 20 % of major market infrastructure to modern facilities by 2015	Construction/ Rehabilitation of market facilities for crop, livestock and fisheries products	Ministries responsible for roads, public ministries, labour, Finance, Trade, livestock development, Fisheries Agriculture and rural development sector ministries, and the private sector	US $ 50m	2010 - 2015
	Inadequate storage facilities	Increase storage capacity by 20 % by 2015	Establish/strengthen storage facilities Facilitate development of community based storage facilities in target areas Promoting renting/leasing of storage facilities for food commodities/products	Agriculture and rural development sector ministries, Ministries of Finance and Trade, and the private sector	US $ 100m	2010 - 2015

Output	Baseline	Target	Actions	Actors	Estimated Cost	Time Frame
2. Transport infrastructure for access to markets Improved	Feeder roads in high potential production areas in poor condition	Improve feeder roads by 20 % annually	Construct of target feeder roads in high potential producer areas and end market areas Develop intra and interregional transportation networks of Roads Railway and harbors	Ministries of roads, public ministries, Ministries of Labour, Finance and Trade, Agriculture and rural development sector ministries, and the private sector	US $ 10bn	2010 - 2015

Objective 6: Put in place structured trading system for food commodities and products

Output	Baseline	Target	Actions	Actors	Estimated Cost	Time Frame
1. Effective and efficient Warehouse Receipt System (WRS)Established	WRS initiated in most EAC countries	Efficient WRS established by 2015	Develop/strengthen regulatory framework and implement WRS system Build capacity of a critical mass of experts and knowledgeable stakeholders Create awareness of the advantages of the WRS among the stakeholders.	Agriculture and rural development sector ministries, Ministries of Finance and Trade, and the private sector	US $ 2m	2010 - 2015
2. An efficient regional commodity exchange established	Only Uganda has an operational CE but with minimal traded volumes Kenya is at an advanced stage of establishing a regional commodities exchange	Regional commodity exchange established by 2015	Establish/strengthen national commodity exchange and related policy and regulatory framework Develop policy and regulatory framework and establish regional commodity exchange. Training/awareness creation on commodity exchange among target public institutions, farmers/producers and	Agriculture and rural development sector ministries, Ministries of Finance and Trade, and the private sector	US$50m	2010 - 2015

Output	Baseline	Target	Actions	Actors	Estimated Cost	Time Frame
			processors. Promotion of ICT in Trade and commodity exchange.			
3. Contract farming and out grower schemes Increased	Less than 5 % of farmers engaged in contract farming and out grower schemes	Increase proportion of farmers engaged in contract farming and out grower to at least 15 % by 2015	Establish regional regulatory framework for supporting contract farming and out grower schemes Promote contract farming and out grower schemes to producers Promote establishment /strengthening of farmers producers organizations including cooperatives	Agriculture and rural development sector ministries, Ministries of Finance and Trade, communities and the private sector, farmers organizations /cooperatives	US $ 1.5m	2010 - 2015
4. Marketing of livestock and livestock products improved	Inadequate livestock traceability and poor marketing and processing infrastructure across member states	Livestock and livestock products traceability system established by 2015	Put in place functioning livestock marketing and processing infrastructure Develop and support establishment of livestock identification, registration and traceability system	EAC Secretariat, Agriculture and rural development sector ministries, and the private sector	US $ 10m	2010 -2015

Objective 7: To improve food purchasing power of Individuals, households and communities

Output	Baseline	Target	Actions	Actors	Estimated	Time frame
1. Off-farm employment in rural areas increased	Low off farm employment in rural areas	Off-farm employment increased by 5 % per annum At least -30 % of rural GDP to be derived from % non-food activities by 2015	Promote small scale industries in the rural areas Increase rural electrification and other forms of energy sources Support free movement of labour across the EAC region Promote enterprises for youth, marginalized groups and groups with special needs through business incubation and training on vocational skills.	Ministries of labour, Finance and Trade, Agriculture and rural development sector ministries, energy and industry and the private sector	US $ 2m	2010 - 2015
2 Level of vulnerability	Low number of pilot	Reduced the % of vulnerable	Establish and Promote	EAC Secretariat, Ministries	US$ 300m	2010-2015

to food insecurity in the EAC reduced	programmes targeting Vulnerable groups.	groups by 50% by 2015.	development programmes/schemes for vulnerable groups including food for work/cash Design and promote support programmes to reduce poverty by offering starter packages Initiate programmes to cater for the most vulnerable groups	responsible of Social services		

4.4 IMPROVE STABILITY OF FOOD SUPPLY AND ACCESS IN THE EAC REGION

Objective 8: To improve capacity for emergency preparedness and response.

Output	Baseline	Target	Actions	Actors	Estimated Cost	Time frame
1. Capacity for emergency preparedness and response enhanced	Each country has own food reserve of at least 3 months	Member state to have food and feed reserve of at least for 6 months by 2015.	Support establishment and maintenance of food and feeds storage facilities at national to household Harmonize and Strengthen capacity of the relevant institutions in food and feeds security emergency response. Establish an EAC Food and Feeds Security coordination unit at the EAC Secretariat Develop a livestock emergency	EAC Secretariat, Ministries responsible for disaster preparedness, Agriculture and rural development sector ministries, Ministries of Finance and Trade, and the private sector,	US$ 600m	2010 - 2015

Output	Baseline	Target	Actions	Actors	Estimated Cost	Time frame
			preparedness contingency plan			
		The EAC member state to establish a contingency fund for 6 months food reserve by 2015	Each member state set up a contingency fund food reserve	EAC Secretariat, Ministries responsible for disaster preparedness, Agriculture and rural development sector ministries, Ministries of Finance and Trade, and the private sector	US$ 550m	2010 - 2015.
	Each country has a Food security monitoring system	Food security monitoring systems to be harmonized and a regional system established by 2012.	Harmonize / establish a regional food security monitoring system.	Ministries responsible for disaster preparedness, Agriculture and rural development sector ministries, Ministries of Finance and Trade, Meteorological institutions	US$ 1.5m	2010 - 2015

Output	Baseline	Target	Actions	Actors	Estimated Cost	Time frame
				and the private sector		
2. Vulnerability reduced	Over US $ 500 million currently spent on emergency and relief food every year	Dependency on emergency and relief food reduced by 30 % by 2015	Allocate 5 % of national budgets spent on emergency/relief food to long term development projects in vulnerable regions	Ministries of Finance and Trade, Ministries of Roads & Public works, Ministries responsible for disaster preparedness, Agriculture and rural development sector ministries, and the private sector	US$ 200m	2010 - 2015
		Allocate 5 % of national budgets spent on emergency/relief food to public work schemes and development projects	Promote public work schemes geared towards sustainable development and management of productive resources	„	Above	
3. Secondary financial	Poorly developed	Finance	Promote development	EAC Secretariat	US$ 2bn	2010 - 2015

Output	Baseline	Target	Actions	Actors	Estimated Cost	Time frame
markets supporting agricultural insurance and finance developed	secondary financial markets	/Insurance/ instruments covering food supply & price risks available by 2015	of finance/insurance instruments to cover food supply and price risks and encourage investment in agriculture sector Promote establishment and strengthening of agricultural financial institutions and systems for enhanced access to credit.	Ministries of Finance and Trade, Agriculture and rural development sector ministries, and the private sector, Financial Institutions, producers.		

4.5 ENHANCE NUTRITION AND FOOD SAFETY

Objective 9: To Improve on nutrition and food safety

Output	Baseline	Target	Actions	Actors	Estimated	Time Frame
1. Nutritional Status in the EAC Partner States enhanced	Prevalence of underweight: Uganda – 16 % Kenya – 31 % Rwanda – 33 % Tanzania – 44 % Burundi – 66 %	Each partner state to reduce undernourishment by 10 % by 2015	Establish /strengthen mechanism for identification of Food insecure and vulnerable (FI&V) groups. Promote measures for diversification and improved utilization of food Promote targeted School feeding programme Promote nutrition education among pregnant women and lactating mothers, persons affected by HIV/AIDS	EAC Secretariat, Partner State Ministries responsible for Agriculture, Livestock, Fisheries, Health, HIV & AIDS, Gender, Local and regional administration , and other Stake holders	US$ 7.5m	2010-2025
	Limited knowledge on nutritional issues	School nutrition education introduced in at	Promotion of nutrition education in schools and through media Promote	Ministries responsible for Education, Ministries responsible for Agriculture, Livestock and	US $2.5m	2010-2015

Output	Baseline	Target	Actions	Actors	Estimated	Time Frame
		least 30% of primary schools by 2015	gardening/livestock programmes in rural communities and inschools	Community Development		
	Current Situation in EAC Region is below 1800Kcal	Minimum Energy intake increased to 2100Kcal by 2015	Promote development of national dietary guidelines among Partner States	Ministries responsible for Health and Social Welfare, Agricultural sector ministries	US$ 2.5m	2010-2015
	Increasing incidence of Diet related Non communicable Diseases (e. g diabetes, obesity, heart diseases, Hyper tension etc)	Reduce Diet related NCD's incidence by 10 % by 2015	Promote healthy diets and lifestyles including physical activities Develop nutrition extension packages	Ministries responsible for Health and Social Welfare, Agriculture sector ministries	US$ 1m	2010-2015
	High incidences of Schistosomiasis water borne diseases reported in the region	Incidence of water borne diseases reduced by 10 % by 2015	Promote provision of social services, safe drinking water, sanitation facilities, and public health education.	EAC Secretariat Ministries responsible of Water, Health, and Education	US $2.5m	2010-2015
2. Food Safety enhanced in the EAC	Each country has several food safety regulatory frameworks	Regional food safety regulatory	Review and harmonize national regulatory frameworks	Ministries responsible for Health, Agricultural sector ministries & Offices of Presidents	US $ 5m	2010-2015

Output	Baseline	Target	Actions	Actors	Estimated	Time Frame
		framework in place by 2015	Establish a regional food safety regulatory framework			
	High incidence of food borne diseases	Incidence of Food Borne diseases reduced by 10 %by 2015	Establish and strengthen food risk assessment systems Intensify provision of public health education. Establish a management information system	EAC Secretariat Ministries responsible for Health, Agriculture, livestock, fisheries and Education	US$5m	2010-2015

Grand Total USD 43.11 Billion

NOTE: Estimated cost in the action plan is based on the projections of the current national expenditure and anticipated activities extracted from Partner States national budgets.

4.6 IMPLEMENTATION STRATEGY AND MONITORING

4.6.1 Implementation and Coordination

The Plan shall be implemented over a period of 5 years, from 2010 to 2015 and the Sectoral Council of Ministers Responsible for Agriculture and Food Security will guide its implementation. For its effective and efficient implementation, it will be necessary to strengthen the capacity of the EAC Secretariat to coordinate the implementation of the joint programmes and projects emanating from this plan.

At the Partner States level, Ministries responsible for Agriculture, Food Security, and respective Sector Ministries will be charged with implementation of the Plan. An Inter-Ministerial Coordination Team comprising Agriculture Sector and relevant sector Ministries will be established, where they don't exist, for close supervision. This may include stakeholders, active NGOs and Private Sector in the relevant fields.

4.6.2 Monitoring and Evaluation (M & E)

In order to effectively monitor the implementation of EAC Food Security action Plan, a common monitoring system will be used. The EAC Secretariat will prepare a monitoring master plan with clear indicators. The EAC Secretariat will be responsible for monitoring the implementation of the Plan at Community level. Partner States will be responsible for monitoring the programs that fall within their territories. The projects and programmes under this plan will be monitored and reports submitted semi-annually.

4.7 RESOURCE MOBILIZATION

The Plan will be financed with resources from a number of sources including, EAC Partner States, Development Partners, International funds, Climate Change adaptation fund, the Private Sector Investors, and financial institutions such as Commercial Banks, Development Finance Institutions (DFIs) and Micro-finance facilities. A financial resource mobilization plan will be prepared by EAC Secretariat in collaboration with Partner States to attract funds to implement this plan.

The EAC Secretariat in collaboration with Partner States will draw up a detailed annual work plan indicating financial requirements based on objectives identified in the Action Plan. The implementation of the plan will be phased starting with the crucial strategic interventions. The plans will be financed by the Community, Development Partners and investors. However, it should be reiterated that for the EAC region to overcome its current food security problems Partner States will have to make substantial investment in the agriculture sector development at national level, as regional interventions can only succeed if national strategies are successfully implemented. Towards this, Partner States should commit a substantial proportion of the financial requirements for implementing the Plan in their national budgets and mobilizing additional funds from development partners and other sources.

Annex VI

EAST AFRICAN COMMUNITY

EAC CLIMATE CHANGE POLICY

EAC SECRETARIAT
ARUSHA
MAY 2010

FOREWORD

The East African Community Climate Change Policy was developed as a result of a directive by the Heads of State of the East African Community (EAC) Partner States, at their 11th Summit Meeting, which was held in Arusha, Tanzania on 20th November 2009 to address the adverse impacts of Climate Change in the region.

This is in response to the growing concern about the increasing threats of the negative Climate Change impacts to the development of set targets and goals in the region. In addition, it is a fulfillment of one of the objectives of the Community; to develop policies and programmes aimed at widening and deepening cooperation among Partner States.

This Policy was prepared by experts drawn from each Partner State, the EAC Secretariat and Lake Victoria Basin Commission Secretariat. The preparation was guided by the emerging issues and challenges faced by the region in light of the increasing climate change impacts.

The impacts are especially on the key economic drivers such as water resources, agriculture, energy, transport, health, forestry, wildlife, land and infrastructure among others. It is also consistent with the provisions of the East African Treaty, the EAC Protocol on Environment and Natural Resources, the Protocol on Sustainable Development of Lake Victoria Basin as well as the United Nations Framework Convention on Climate Change (UNFCCC).

Therefore, the effective implementation of Adaptation and Mitigation measures of this Policy by all actors will go a long way towards minimizing the overall impacts of Climate Change and consequently lead to regional social and sustainable economic development.

I therefore urge the EAC Partner States and other stakeholders to support the implementation of this East African Community Climate Change Policy (EACCCP).

Signed by the Chairman of the EAC Council

EXECUTIVE SUMMARY

The adverse impacts of Climate Change being aggravated by increasing average global temperatures are a threat to the livelihoods of people in almost all sectors of the economy in the EAC region. Severe droughts, floods and indeed extreme weather phenomena are occurring with greater frequency and intensity in the region. This is worsening the state of food security and threatening all the other drivers of economic development. Hence the need for an integrated, harmonized and multi-sectoral framework for responding to Climate Change in the EAC region.

In view of this, the Heads of State of the East African Community (EAC) directed the EAC Secretariat to develop a policy on Climate Change and strategies to address the adverse impacts of Climate Change in the region.

The overall objective of the East African Community Climate Change Policy (EACCCP) is to guide Partner States and other stakeholders on the preparation and implementation of collective measures to address Climate Change in the region while assuring sustainable social and economic development.

The guiding principles in implementing the Policy are in accordance with the EAC Treaty, the EAC Protocol on Environment and Natural Resources, the Protocol on Sustainable Development of Lake Victoria Basin as well as the United Nations Framework Convention on Climate Change (UNFCCC) among others.

In view of the high vulnerability of the region to the impacts of climate change, with the emerging associated challenges especially food security, adaptation to climate change is of priority to the EAC region.

The policy prescribes statements to guide Adaptation and mitigation actions to address Climate Change. Under Adaptation, the policy aims at strengthening meteorological services and improving early warning systems, increasing preparedness for disaster risk management ,scaling up of efficient use of water and energy resources, irrigation, crop and livestock production, protection of wildlife and key vulnerable ecosystems such as wetlands, coastal, marine and forestry ecosystems, improving land use, soil protection, tourism, infrastructure and human settlement; intensify diseases, vectors, and pests control.

Although the EAC region has negligible contribution to global emissions, it is important to contribute to global efforts to reduce greenhouse gases (GHGs) in the atmosphere by undertaking GHG mitigation actions. In doing so, such actions should not compromise the region's social and economic development. Mitigation measures prioritized in this Policy include; afforestation, reforestation, promotion of energy efficiency, efficient crop and livestock production systems and efficient transport systems, waste management while capturing opportunities in emission reductions in the region.
In order to fully implement this policy, each Partner State shall develop a national policy, strategies and institutional arrangements to operationalize the provisions made in this policy such as enabling measures on financing (including the establishment of the EAC adaptation Fund), capacity building, technology development, monitoring and evaluation. EAC Secretariat and other EAC Institutions will develop effective structures and engage appropriate capacities that will initiate, coordinate and follow up implementation of this policy.

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DEFINITION OF TERMS

I. ***Adaptation:*** adjustment in human and natural systems to an environment that has been transformed or is being transformed by climate change events; such adjustment may be preventive or reactive, private or public, autonomous or planned.

II. ***Adverse effects of climate change:*** changes in the physical environment or biota resulting from climate change which have significant deleterious effects on the composition, resilience or productivity of natural and managed ecosystems or on the operation of socio-economic systems or on human health and welfare

III. ***Clean Development Mechanism***: is the instrument contemplated in the Kyoto Protocol (Art. 12), by which projects that mitigate greenhouse gas emissions undertaken in developing countries (non-Annex I of the Protocol), and considered by the host country to be environmentally sustainable, result in the creation of credits for Certified Emission Reduction units (CERs), which the developed countries can use to meet their targets within the scope of the international agreement mentioned

IV. ***Climate***: situation of a climate system, including the statistical description, taking into account averages and variations in temperature, rainfall, winds and other relevant meteorological factors in a given period.

V. ***Climate change:*** a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.

I. ***Climate Variability:*** variations in the mean state and other statistics (such as standard deviations, the occurrence of extremes, etc.) of the *climate* on all *temporal and spatial scales* beyond that of individual weather events. Variability may be due to natural internal processes within the *climate system* (internal variability), or to variations in natural or *anthropogenic external forcing(external variability)*

II. ***Greenhouse gases***: "Greenhouse gases" means those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation.

III. ***Global Warming:*** intensifying greenhouse effect resulting from anthropogenic actions, where the consequence is an increase in the concentration of greenhouse gases, aerosols or their predecessors in the atmosphere, which absorb part of the infrared radiation emitted by the Earth's surface, thus increasing the average temperature on the planet and causing adverse climatic phenomena.

IV. ***Mitigation:*** the reduction of the causes of a given impact, allied to the precautions and attitudes for reducing the undesirable risk to the minimum possible.

V. ***REDD:*** Reduction of emissions from deforestation and forest degradation

VI. ***Resilience:*** the ability of a system to adapt to climate change, whether by taking advantage of the opportunities or by dealing with their consequences; the analysis of adaptation identifies and evaluates the different options, benefits and costs of the measures.

VII. ***Sink:*** any process, activity or mechanism that removes greenhouse gases, aerosols or precursors of greenhouse gases from the atmosphere.

VIII. ***Sustainable Development:*** Development which meets the needs of the present without compromising the ability of future generations to meet their own needs.

IX. ***Vulnerability***: the degree of susceptibility or inability to protect oneself from the negative effects of climate change, a function of the type, magnitude and frequency of the climate events to which a system is exposed, in addition to its sensitivity to and capacity for adaptation.

(Adopted from the UNFCCC definitions)

CHAPTER 1: INTRODUCTION

3.5 Background

In the recent years Climate Change has become a social, economical and environmental challenge facing humankind both at local and global level. The fourth report of the Intergovernmental Panel on Climate Change (IPCC 2007) has revealed that climate change is real and already happening. According to the report, while it is difficult to precisely predict the consequences of Climate Change, enough understanding is available on the kind of risks posed.

The impacts include melting of glaciers, floods, frequent prolonged droughts, reduced water supply, decline in crop yields to food insecurity, the increase in pests and diseases for livestock, wildlife and crops, increase in invasive species, increase of vector-borne diseases including malaria and Rift Valley fever, water-borne diseases including dysentery, bilharzias, cholera and typhoid, declining levels of fresh water bodies, rising sea levels leading to displacement of people and disruption of both terrestrial and marine ecosystems and important natural habitats, which are now not only predicted but vividly observed in many parts of the world. The recurrence of extreme weather events occur with increasing intensity and frequency.

However, the impacts are not evenly distributed, with the poorest countries being most vulnerable. This is because the economies of these countries are generally dependent on climate-sensitive natural resources and thus less able to cope with the negative impacts of climate change.

In the East African Community (EAC) region, climate change adverse impacts have been observed through sea level rise, which has already led to infrastructure destruction along the coast, submergence of some small islands in the Indian ocean, such as *Maziwe* and *Fungu la Nyani* (NAPA-TZ, 2006) intrusion of sea water into fresh water wells along the coast, in Tanzania, beach erosion in Mombasa, Kenya, rampant floods and droughts across the region.

Various studies indicate that deepwater temperatures of lakes Edward, Albert, Kivu, Victoria, Tanganyika and Nyasa, which reflect long-term trends, have risen by 0.2 to 0.7°C since the early 1900s. Since 1912, the area of Mt. Kilimanjaro's ice fields has decreased by between 50 and 80%. It has been estimated that, if current climatologically conditions persist, the remaining ice fields are likely to disappear between 2015 and 2020. Moreover, Mt. Ruwenzori ice cap field has decreased from the initial 563 hectares to now less than 50 hectares (2009).

Projections of climate change suggest that East Africa will experience unpredictable but increasingly visible effects of climate Change which will make life in the future even more uncertain. More Changes will be in Temperature (+0.2 to +0.5 degrees °C) and precipitation patterns. Under intermediate warming scenarios, parts of equatorial East Africa will likely experience 5-20% increased rainfall from December-February and 5-10% decreased rainfall from June-August by 2050 (WWF, 2006)*.

**Climate Change Impacts on East Africa. A Review of the Scientific Literature WWF-World Wide Fund for Nature. November 2006*

Climatic Change of this magnitude has had far-reaching negative impacts on the availability of water resources, food security and agricultural productivity, human health, tourism, livestock production, wildlife, household and industrial energy, coastal

development and biodiversity culminating into increasing cost of investments and diminishing livelihoods.
As East Africa depends heavily on rain-fed agriculture, both urban and rural livelihoods are highly vulnerable to climate variability such as shifts in growing season conditions.

Considering this background, it is important that the EAC region engages a more strategic and cooperative approach to address climate change. It is therefore important to develop a policy to guide this approach. This EAC Policy on Climate Change, thus, represents the commitment of the Partner States to address the challenges of climate Change, for both the present and future generations.

3.5 Linkages to Partner States Strategies and Other Relevant Policies

This policy takes cognizance of national, regional, sub-regional development policies, plans, strategies and programmes, while at the same time complementing other Multilateral Environment Agreements that the EAC Partner States are Party to.

The national sectoral policies that are relevant to this policy include: Environment, Water, Land, Forestry, Energy, Transport, Agriculture, Fisheries, Health and Other relevant future policies. The regional sectoral policies that are relevant to this policy include, the Protocol on Environment and Natural resources management; the protocol for sustainable development of the Lake Victoria Basin and The regional Environmental Impact Assessment (EIA) guidelines on shared ecosystems.

The International treaties, conventions and protocols that are relevant to this policy include: the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol (KP) The United Nations Convention to Combat Desertification (UNCCD); The Convention on Biological Diversity (CBD); The RAMSAR Convention on Wetlands; the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal and the Vienna Convention.

1.3 National and Regional Climate Change initiatives

East African Countries have already embarked on preparation and implementation of projects and programmes to address climate change. The projects/programmes focus on both adaptation and mitigation activities.
Four Partner States, namely Burundi, Rwanda, Uganda and Tanzania have developed National Adaptation Programmes of Action (NAPAs), which are in various stages of implementation. The NAPAs identified immediate, urgent and priority project activities that are necessary to enhance adaptation capacities to climate change adverse impacts. Kenya, on the other hand, has already prepared a Climate Change Response Strategy which spells out the priority areas for both adaptation and mitigation activities in the country.

Furthermore, the Partner States have identified potential mitigation options which can be used to foster economic development in the region while contributing to global efforts to reduce greenhouse gas emissions. The potentials in the region range from geothermal along the Rift Valley, wind, cogeneration, hydropower, solar use of natural gases and methane recovery from waste management in various areas of the region. So far, few

Partner States namely; Rwanda, United Republic of Tanzania, Kenya and Uganda have registered Clean Development Mechanism (CDM) projects.

Initiatives are underway to ensure energy becomes readily available to region at affordable prices to the majority of the people in region.

3.5 Rationale for the Regional Climate Change Policy

The adverse impacts of Climate Change are already having their toll on the livelihoods of people in almost all sectors of the economy in the region. Severe droughts are occurring with greater frequency in the region. Food insecurity, insufficient hydro-power, increase of diseases such as malaria, and water scarcity are some of the consequences associated with the scenario of a changing climate in the region. The continued increase of the average global temperature will further aggravate the situation leading to increased vulnerability of the communities to the impacts of Climate Change and also affecting almost all the sectors of the economy, including Agriculture, water, Energy, Health and forestry. In this context, devising strategic measure to enhance adaptation capacity and explore available opportunities for economic development is critical for the EAC region.

Furthermore these impacts are not evenly distributed; the most vulnerable poorest countries like EAC Partner States will suffer the most. Developing countries are particularly vulnerable because the national economies of these countries generally depend on climate sensitive natural resources and because they are less able to cope with the negative impacts of Climate Change.

The Eleventh Ordinary Summit of Heads of State of the East African Community held in Arusha, November, 2009 pointed out that Climate Change adverse impacts were taking their toll in the region. The Heads of State expressed concern about the state of food security and the threat to all other drivers of economic development in the region. Among other directives, the Heads of State directed the EAC Secretariat to prepare a Policy and Strategies for addressing the adverse impacts of Climate Change.

EAC recognizes that every major social, economic and environmental sector is sensitive to climate variability and change, both of which are significant factors in each sector's sustainable development. EAC is also cognizant of the changing climate and the need to put in place measures geared towards adaptation as well as mitigation of its adverse effects. To this effect, it encourages development and implementation of National as well as regional adaptation plans of action. Despite of this fact, adaptation is an additional burden for developing countries, particularly the East African Community member states, whose adaptive capacity is already constrained by low economic levels and poverty. There is also need for vulnerability assessment, adaptation planning, and capacity building, in terms of training, institutional strengthening and planning. Experience suggests that the best way to address climate change impacts on the poor is by integrating adaptation responses into development planning. This is fundamental to achieve the millennium development goals (MDGs).

Cognizant of the severity of climate change adverse impacts in the region, several initiatives have been taken by the EAC to address the challenge in the region. Chapter 19, Article 112 (f) and (m) of the Treaty establishing East African Community calls for co-operation in the management of the environment, disaster preparedness and management, protection and mitigation measures especially for the control of natural and

man-made disasters. Under this provision, the Partner States are required to develop and adopt an integrated approach to address the effects of climate change in the region. In addition, Articles 23 and 24 of the Protocol on Environment and Natural Resources Management also provide for joint actions to address climate change in the region.

Since most of the economic activities in the EAC region are dependent on climate sensitive sectors, cooperation in addressing climate change is of paramount importance to the region's sustainable development. Therefore, a regional policy is more likely to guarantee and guide this cooperative action consistent with Article 5(1) and 5(3) of the Treaty

3.5 Goal and Objectives of the Policy

Goal

To contribute to sustainable development through harmonized and coordinated regional strategies, programmes and actions to address Climate Change.

Main objective

To guide Partner States and other stakeholders on the implementation of collective measures to address Climate Change in the region while assuring sustainable Social and Economic development.

Specific objectives

The specific objectives of this Policy in the EAC region are to:

a. Establish a regional framework as a guide to harmonize and coordinate implementation of Climate Change actions amongst Partner States;

b. Spell out priority action areas and roles of Partner States and other Stakeholders in addressing Climate Change;

c. Promote public awareness and provide information on socio-economic importance of Climate Change;

d. Facilitate resource mobilization to implement strategies and action plans to address Climate Change;

e. Promote capacity building efforts through inter alia technology transfer, training and information sharing; and

f. Promote development of predictive models to facilitate preparedness for strategic responses to future climate change impacts in the region.

1.6 Scope of the Regional Climate Change Policy

This Policy provides an integrated, harmonized and multi-sectoral framework for responding to Climate Change in the EAC region.

3.5 Guiding principles

The Partner States are under the obligation and have a right to, promote sustainable development. Policies and measures to address effects of Climate Change against human development should be appropriate for the specific conditions of each Partner State. In addition, this should be integrated within the national development programmes, taking into account that economic development is essential for adopting measures to address climate change.

In this regard, this Policy is in accordance with the principles set out in articles 6 and 7, of the Treaty establishing the East African Community; the principles set out in article 4 of the Protocol on Environment and Natural Resources Management for EAC region; the principles set out in Article 3.3, 3.4 of the United Nations Framework Convention on Climate Change (UNFCCC); the principles set out in article 4 of the protocol for the Sustainable Development of Lake Victoria Basin. In particular, the policy shall also take cognisant of the following principles:

a) Climate change adaptation measures are primary while mitigation measures are secondary;

b) Priotization of regions, sectors and communities that are more vulnerable to climate change impacts in the policy implementation;

c) Mainstreaming climate change issues into national development plans;

d) Climate Change adaptation and mitigation actions be carried out without comprising social and economic development;and

e) Partnership, collaboration and synergies among various stakeholders involved in Climate Change issues.

CHAPTER 2: POLICY PROVISIONS

3.5 Introduction

This Policy shall apply to all actions relating to climate change as well as all sectors and sub-sectors impacted by climate Change including, but not limited to the following: Water resources, crop and livestock production, wildlife, coastal and marine ecosystems, land use and soil protection, wetland, forestry, health, disaster risk management, energy, tourism, industry, fisheries, gender and community development, transport and infrastructure, education and human settlement.
In this context, devising strategies to ensure social, economic and environmental sustainability particularly enhancing Climate Change adaptation and mitigation measures is critical for the EAC region.

2.2. CLIMATE CHANGE ADAPTATION

The adverse impacts of Climate Change are likely to continue for decades even if greenhouse gases emissions halts today. In view of this, adaptation to adverse impacts of climate change is of paramount importance and a priority for the East African Community Partner States

General Issues and Challenges

Partner states of the EAC recognize the importance of addressing adaptation needs in various sectors which affect the sustainable livelihood of all citizens in the region. However, there are several issues and challenges that should be addressed to enable the region to effectively implement concrete adaptation activities. These include, but not limited to the following:-

i) *Financing adaptation activities*: Increasing capacity to fund adaptation activities;

ii) *Responding to extreme weather conditions and related disasters*: Availability of adequate information, early warning systems and technological capacity;

iii) *High Poverty levels:* Ability to adapt to extreme weather events and climate variability;

iv) *High vulnerability of the population:* Increase of income of most vulnerable groups, fragile ecosystems and poor infrastructure;

v) Pressure on Natural Resources: promote sustainable utilization of natural resources, promotion of alternative livelihoods, minimization of migration, internal and cross-border conflicts, and displacement of the populations; and

vi) Man-made and natural disasters: Development of adequate disaster management responses.

2.2.2 Objective

The main objective is to institute and implement measures which will improve the adaptive capacity and resilience of the East African region to the negative impacts of climate change.

Policy statements and actions

The EAC shall address adaptation to climate change in the following ways:

2.2.3.1 Disaster Reduction and Risk Management including Early Warning, Preparedness, Emergency Response and Post-Disaster Recovery:

i) Support development and implementation of Climate related Disaster Risk Reduction and management as an adaptation tool;

ii) Support vulnerability Risk Mapping on all sectors including social and economic impacts of climate change;

iii) Improve early warning systems and preparedness in the region to avert or minimize the adverse impacts of climate change.

2.2.3.2 *Building economic and social resilience*

i) diversification of economies to reduce dependence on climate-sensitive sectors

ii) Support implementation of National Adaptation Programmes of Action NAPAs) as a short term measure to address Climate Change (immediate and urgent actions);

iii) Develop and implement a regional Climate Change response master plan within which Medium to long term strategies of adaptation to climate change will be formulated; and

iv) Establish and operationalize an EAC Climate Change Adaptation Fund.

Sectoral planning and Implementation of Climate Change adaptation measures in key sectors

i) Water

With changing climate, overbearing pressure on various water resources is more likely to intensify the conflict over the water use not only between the local communities in the partner states, but also between member states. Climate change has already caused variations in rainfall patterns and soil moisture due to change in temperature and affects river run off. In some countries, climate impacts affect the ecosystem services that communities are largely dependent upon, threatening development and economic stability. Future impacts are projected to worsen as the temperature continues to rise and as precipitation becomes more unpredictable.

Sectoral Challenges

The challenges in the water sector include:-

i) Increased water abstraction for various uses among the partner states;

ii) Inadequate water distribution and utilization technologies;

iii) Inadequate water storage infrastructures;

iv) Lack of data on seasonal water flows that can allow proper planning and water management;

v) Increased conflicts over water resources,

vi) The management of water resources at the farm level,

vii) Awareness of the value of water resources in the development context.

Sector Specific Objective

The objective is to implement measures to conserve, efficiently utilize and sustainably exploit the water resources in the region.

Sectoral Policy Statements

EAC shall:

a) Utilize integrated water resource management principles in managing its water resources;

b) Support development and transfer of water and climate information and technology that support water conservation through natural resource planning support, data acquisition and management, technology innovation and transfer, partnerships and joint ventures;

c) Promote regional and international cooperation for better water management and conflict prevention through trust and confidence building;

d) Promote transfer and dissemination of efficient water technologies including recycling of waste water;

e) Improve water security by promoting investment in water storage facilities;

f) Strengthen initiatives for conservation and management of lake and river basins;

g) Promote rain water harvesting, protection of water wells and springs, and other water sources;

h) Promote participation of the private sector, civil societies and women in management of water resources.

i) Promote bulky water supply to ensure adequate and reliable water for production;

j) Promote Public Private Sector partnership in regulated abstraction and distribution of water for domestic, industrial, agricultural production and energy ; and

k) Promote actions that reduce Water pollution, including Protection of water quality and aquatic habitats.

3. *Agriculture (Crop, Livestock and Fisheries)*

East Africa largely depends on rain fed agriculture making rural livelihoods and food security to be highly vulnerable to consequences of climate variability and change. It is also noted that agriculture provides a living for 80% of East Africans. Agriculture and livestock production in East Africa is hampered by its reliance on unreliable rainfall and absence of water storage facilities compounded by, poor land use practices and antiquated technology and farming methods. It is likely to be hit harder as droughts and floods worsen, temperatures and growing seasons change, and farmers and herders are forced off their land. Future impacts are projected to worsen as temperatures continue to rise and rainfall becomes much more unpredictable.

Sectoral Challenges

The Sectoral Challenges to agriculture, fisheries and livestock in the region include:

i) Control of crop, livestock and fish pests and diseases affecting yield potentials;

ii) Control of land degradation to improve soil productivity;

iii) Restore and sustain aquatic ecosystems to prevent depletion of fishing stocks in all the sources;

iv) Minimize the impacts of extreme weather conditions to improve crop, fish and livestock productivity;

v) Availability of suitable infrastructure to enable accessibility of livestock, fisheries and crop products; and

vi) Availability of data for monitoring impacts of Climate Change.

Specific Sectoral Objectives;

i) To increase use of integrated pests and disease management in the region;

ii) To improve management of natural resources (land, water, fisheries and forest) in order to ensure sustainable production;

iii) To improve on the food management and distribution to ensure access and affordability all the time.

Sectoral Policy statements

EAC and Partner States shall:

i) promote sustainable land management practices including Conservation Agriculture and improved production systems as a way to adapt to Climate Change;

ii) promote development and implementation of irrigation policies in Partner States

iii) Promote practices and technologies for efficient utilization of water for irrigation, livestock and aquaculture ;

iv) Promote agro processing and use of agriculture food storage facilities Promote efficient livestock production systems;

3. *Wildlife*

The great reservoir of East Africa's wildlife and biological diversity is increasingly under threat as a result of ecosystem fragmentation, over utilization of resources and conflicts between wildlife and other human activities such as agriculture and human settlement. Persistent drought due to increase in temperature and unreliable rainfall pattern in the region is expected to affect the lifestyles of most of the migratory wild species, in particular the wildebeest and some bird species. The wildlife forms an important source of food and income for some local communities in the regional. Change in ecological systems will lead to disappearance of some wild animal species.

The sectoral challenges

The Sectoral challenges facing wildlife in light of climate change include:

i) Ecosystems change (in terms of biodiversity and climatic conditions) leading to ecological range shifts of specific species;

ii) Destruction of wildlife habitats due to increased natural bush fires;

iii) Decreasing carrying capacity of Protected Areas (Pas) and rangelands due to increasing extreme weather conditions, leading to reduced regeneration of pastures and water resources for the wild animals.

Sector specific Objective

To develop, harmonize and adopt common policies, laws and strategies for the conservation and sustainable utilization of wildlife resources in and outside protected areas in the region.

Sectoral Policy Statements

EAC Partner States shall: livelihood for local communities in order to reduce their dependency on wildlife;

i) Promote measures that preserve the ecosystem integrity of critical wildlife habitats and endangered species.

ii) Establish, promote, and/or protect wildlife migration corridors

3. *Coastal and Marine Ecosystems*

Continued rise in temperature as a result of global warming is causing sea level rise which will lead to destruction, salt water intrusion, farmland salinity and degradation of coastal resources and infrastructure such as mangroves and houses. This will in turn further impoverish the local communities which depend on these resources.

Wetland habitats are important integral parts of the coastal fisheries industry and provide critical spawning and nursery grounds for many marine and freshwater organisms. Estuarine and lagoon fisheries are therefore the basis for livelihood in many communities. The mangroves, in addition to providing physical protection for the coast against erosion, are used as firewood, building poles, boat building, fish smoking, and in making several domestic appliances (beds, drums, carts, etc.).

Due to the importance of the sea and coastline, the welfare of the population living by the coast and the socio-economic value to the country, the coastline has to be protected against any effect of Climate Change.

Challenges in light of Climate Change:-

i) Reduce the cost of constructing preventive infrastructures along the coast areas;

ii) Creation of alternative sources of fire wood/energy to local communities along the coastal areas other than mangroves;

iii) Reduction of erosion along the coast due to rise of sea levels and salinization of fresh water sources;

iv) Reduce bleaching of coral reefs as a result of enhanced sea surface temperature and flooding.

Objective

To enhance the adaptive capacity of the Coastal and Marine Ecosystems in order to enhance the resilience of coastal communities and infrastructure to the impacts of Climate Change.

Sectoral Policy Statements

EAC Partner States shall:

i) Undertake protective measures for Coastal and Marine ecosystems which are particularly vulnerable to climate change;

ii) Support measures to control sea-side erosion as result of rising sea water;

iii) Mobilize funds to construct walls at vulnerable points to minimize adverse impacts of sea level rise;

iv) Conserve coastal and marine habitats to promote development of protected area management systems;

v) Establish coastal ecosystem monitoring and surveillance systems.

V) Land Use and Soil Protection

Climate Change exacerbates soil erosion, land degradation, loss of biodiversity and soil infertility. Incidents of floods, droughts and deforestation are already becoming frequent in East Africa. As a result, sustainable land management has been under threat. The increase in frequencies and severity of rainfall variability, floods, droughts and other related incidents will continue to threaten sustainable land management practices because productive soils will continue to diminish. This will worsen the already emerging land and limited resource conflicts between and among various land users in the region, for example pastoralists and farmers.

Challenges;

i) Increase of land and soils productivity in the region;

ii) Creation of sustainable land and soil management practices;

iii) Reduce the population pressure to minimize land fragmentation and soil degradation.

Specific Objectives

To ensure that sustainable land management practices are adopted by all stakeholders

Policy Statements

EAC Partner States shall:

i) Promote sustainable land-management practices, including sustainable farming and agro-forestry practices within the EAC region;
ii) Ensure sustainable land-management and productivity of the soils, through measures that enhance soil quality, inter alia, to prevent its erosion, deterioration of its physical, chemical, biological or economic properties;
iii) Upscale integrated nutrient management and soil and water conservation measures to enhance soil fertility;
iv) Promote actions that reduce land degradation and soil erosion especially in the fragile ecosystems such as mountainous areas, lake shores and riverbanks;
v) Facilitate formulation of integrated sustainable land management investment frameworks and land use policies and plans.

3. *Forestry and Wetlands*

The East African region is well endowed with forest resources which contribute significantly to carbon sequestration. However, all forest areas and types are under major threat of deforestation. The major causes of deforestation and forest degradation include clearing for agriculture and settlement, overgrazing, wildfires, charcoal burning and over-exploitation of wood resources for commercial purposes. These activities contribute to the increase of carbon dioxide in the atmosphere as the carbon sink is progressively reduced. This overdependence on forest and wetland resources is mostly due to lack of alternative and efficient technologies for energy and agricultural production. Climate change has been responsible for increase in rainfall in some parts leading to floods and lack of rainfall in other parts of the region leading to droughts. Both of these have had impacts on ecosystem and biodiversity loss. Climate Change will further exacerbate the situation and species that

will be more vulnerable ar e those with: limited geographical range and drought/heat intolerant; low germination rates; low survival rate of seedlings; and limited seed dispersal/migration capabilities. In addition, this has resulted into wetland encroachment for use due to lack of availability of other water sources.

Challenges:

i) Maintenance or increase of biodiversity and generation potential due to ecosystem change;

ii) Creation of alternative primary sources of energy and livelihood of the poor *vis a vis* forest products;

iii) Reduction of bush and forest fires;

iv) Restoration of the degraded Wetlands ;

v) Political will and commitment to conserve forests and wetlands

vi) Regeneration of forest cover due to human encroachment;

vii) Enabling all stakeholders to fully participate in forest and wetland management practices.

Objective:

To ensure forestry and wetlands continue providing global services including mitigation of Climate Change while supporting sustainable development needs of the Partner States.

Policy Statements

i) Promote sustainable management of forests and wetlands in the region;

ii) Promote alternative energy sources in order to reduce dependency on biomass for energy needs in both urban and rural areas;

iii) Promote Reforestation, Afforestation and Agroforestry;

iv) Strengthen enforcement of laws and good governance of forests and wetlands;

v) Promote collaborative forest management practices;

vi) Promote improvement of agricultural productivity so as to avoid deforestation and encroachment on gazetted wetlands for agricultural expansion;

vii) Strengthen capacity to monitor and manage forests and forest related activities;

viii) Promote and strengthen community based management practices;

ix) Promote non-timber forest products;

x) Promote biomass energy-efficiency technologies; and

xi) Promote participatory, integrated watershed management practices.

3. *Health*

Malaria is the largest cause of loss of lives in most parts of the East African region. Various efforts by Governments to fight malaria have been successful in some countries. Malaria transmission is said to be at its peak during high temperatures and humidity, after the rain season. As a result of change in temperature and rainfall regimes, malaria epidemic has been observed to extend to some areas which it used not to be common, particularly the highlands. With increase in average temperature, the frequency of occurrences and impacts of malaria and other diseases such as Dysentery, Cholera, Bilhazia, Trypanasomiasis and Meningitis will further rise. Malnutrition is also on the rise as a result of climate change related food insecurity. The resurgence of Rift Valley Fever following flooding in the semi-arid areas of the region is another concern related to climate extremes.

Challenges:

i) Control recurrent floods and mitigate effects of prolonged droughts in order to reduce outbreak of waterborne diseases;

ii) Development of adequate sanitation facilities;

iii) Coping with the effects of rising temperatures which is responsible for health challenges related to climate change ;

iv) Development of early warning systems for Climate Change related disease outbreaks;

v) R eduction of malnutrition resulting from shortage of food related to frequent and prolonged droughts and floods;

vi) Development of adequate emergency preparedness of the health systems;

vii)Reduction of diseases burden as a result of resurging illnesses related to climate change.

Objectives

To build adaptive mechanisms and enhance early warning systems for climate change related diseases.

Policy Statements

i) Development of effective early warning systems and emergency health measures for Climate Change related diseases in all EAC Partner states;

ii) Facilitate availability of health facilities, equipment and medicine to assist in early diagnosis and treatment in climate change related diseases;

iii) Enhance capacity of medical personnel on climate change , including traditional/indigenous knowledge; and

iv) Promote awareness among populations on climate change related diseases and their prevention.

Viii) Tourism

With a vast land area covered by forests as well as various species of flora and fauna, East Africa is considered to be one of the premier tourism destinations in Africa. The region has beautiful natural resources including extensive tracts of wilderness and a rich diversity of scenery. Among the tourist attraction are the National Parks, Game Reserves, Game Controlled Areas and historical sites. However, due to increase in temperature some of these attractions such as the ice caps of Mount Kilimanjaro, Kenya and Ruwenzori are under threat of disappearing.

Challenges

i) Maintenance or increase of biodiversity and other tourist attraction features due to climate change impacts;

ii) Rehabilitations of infrastructures such as roads and bridges, camping sites and electricity grids in important tourist sites.

Objective

To ensure resilience of tourism infrastructure through factoring Climate Change Climate Change into their planning, as well as enhancing climate proofing of wildlife habitats to minimize environmental migrations of endangered species.

Policy Statements

i) Develop all weather infrastructure to support tourism in the region while ensuring minimal damage to wildlife habitats;

ii) Develop and diversify tourism products which are not very sensitive to Climate Change, as an adaptation and substitute for the many natural ones which are disappearing very fast;

iii) Devise mechanisms of improving local vulnerable population livelihoods from revenues generated from tourism industry;

iv) Develop park management practices which will enable wildlife to adapt to the changing climate;

3. *Infrastructure*

Infrastructure including roads, bridges, railways, ports, buildings and dams are built to accepted risk-limits based on the expected return periods of natural hazards including severe winds, heavy rainfall and storm surges. Below these thresholds, severe weather events are usually handled with relatively light damage to property and human health and life. Above the thresholds, however, damage to infrastructure can be extensive. Possible

adaptation measures would include revision of structural/building codes and standards taking into account the expected changes in climate.

Challenges

i) Reduction of stress of the existing infrastructures in relation to extreme weather events as a result of climate change;
ii) Integration of Climate Change in the design of most infrastructures in the region; and
iii) Development of meteorological infrastructures to provide weather and climate data and information for robust infrastructure planning and design.

Objective

To develop infrastructure that can withstand extreme weather conditions in the region.

Policy Statements;

i) Promote climate change integration in all planning and design of infrastructure;

ii) Build awareness and capacity of the architects and engineers to take into account Climate Change in their professional deliveries; and

iii) Revise and harmonise structural/building codes and standards taking into account the expected changes in climate.

x) Human Settlements

Climate Change impacts have been witnessed on human settlements in East Africa as a result of sea level rise, floods, droughts, landslides, coastal erosion and land conflicts. Climate Change further threatens to affect human settlements if temperatures will continue to rise and rainfall continues to fluctuate and become unpredictable. Human life, animals and property will continue to be under threat. There is a need to strengthen efforts to relocate vulnerable communities, such as those in low lands susceptible to floods and disaster preparedness and management in the region. Some of the challenges of human settlements are enumerated below:

Challenges

i) Knowledge based planning of human settlements for both urban and rural areas;

ii) Use of quality building materials for settlements infrastructure; Affordability of robust building materials.

iii) Provision of appropriate human settlement both in urban and rural areas

Objective

To enable development of human settlements that are robust enough to withstand climate extremes.

Policy Statements

i) Comply with physical planning principles in the design of human settlements;

ii) Develop and promote climate change proofed human settlement standards;

iii) Strengthen housing development policies including subsidies to low income communities.

2.3 CLIMATE CHANGE MITIGATION

Mitigation of Climate Change presents an opportunity to support sustainable development while contributing to the global efforts of reducing emissions of greenhouse gases. Mitigation potentials in the EAC region lies in the energy, forestry, agriculture, waste management and transport sectors. In addition, waste and wetland management provide partner states with opportunities to improve their economic growth if they can turn them into streams of economic revenues.

General Issues and Challenges

It is clear that EAC region has very low Greenhouse Gases emissions, and has negligible contribution to the historic emissions. The IPCCC 4th assessment report points out that global greenhouse gas (GHG) emissions have grown since pre-industrial times, with an increase of 70% between 1970 and 2004. Considering the spirit of multilateralism and principle of common but differentiated responsibilities and capabilities, there are enormous potentials for the region to contribute to mitigating Climate Change through nationally appropriate mitigation actions (NAMAs) supported financially, technologically and capacity building in a monitorable, reportable and verifiable manner. The avenue ranges from forests as net sinks of carbon dioxide to technological mitigation options in various sectors such as energy, industry, transport, waste management and agriculture. Although some of the technological options can be exploited through market based mechanisms such as Clean Development Mechanism (CDM), more strategic support is required in areas and options where market based mechanisms may not be attractive.

Challenges:

a) Financing mitigation actions;

b) Capacity to undertake mitigation activities

c) Technology to undertake mitigation ; and

d) Availability of the minimum required datasets for baseline calculation and project monitoring and evaluation.

2.3.2 Objective

To minimize the EAC region's Greenhouse Gas emissions, while ensuring sustainable development, through mitigation measures.

2.3.3 Policy Statements

The EAC shall address Climate Change mitigation in the following ways:

i) Develop and implement a Mitigation Plan to guide implementation of NAMAs;

ii) Mobilize financial resources for climate change mitigation actions in particular taking advantage of available international and regional initiatives e.g. NAMAs and REDD;

iii) Developin g air pollution emission standards, particularly for industries and transport providing a regulatory framework to support implementation of such standards; and

iv) Develop programmes for technology acquisition and capacity development to support climate change mitigation action.

In order to implement sustainable development policies and mitigation measures in East Africa, the following key areas of mitigation work have been identified:

2.3.3.1 Energy Sector

Energy is a drive to social and economic development in the EAC region. This however has been hampsed by lack of adequate investment, thus limiting the distribution and use of energy by large cross section of the population in the region. Lack policy on bio fuel for example, has resulted in hap hazard development of bio fuel as an alternative source of energy. This may have far reaching effect on food security, hence increasing hunger and starvation in the region. Low investment in the provision of affordable cleaner energy especially in the rural areas and among the urban poor has also let to use of unsustainable energy sources which need to be addressed as a priority

Sectoral Challenge

i) Provision of affordable clean energy for all

ii) Development of alternative sources of energy including biofuels

Sectoral Objective

To increase availability and access to sufficient, reliable, affordable and environmentally sound energy sources.

Sectoral Policy Statements

EAC Partner States shall:

i) Scale up investment to provide access to affordable cleaner energy, improve efficiency in use of biomass energy especially for rural communities;

ii) Develop appropriate alternative energy sources, policies and measures to increase energy efficiency;

iii) Devise a precautionary approach to the development of bio-fuels for mitigation and energy in view of food security issues; and

iv) Improve energy efficiency and promote clean energy technologies including; hydropower, solar and wind.

Transport Sector

The use of motorized means of transport especially in the cities and major towns in the EAC is on the increase as the economies of the region grow. Correspondingly, there is increase in traffic congestion and pollution of GHG per capita. This has been aggravated by poor infrastructure and inefficient transport systems.

Challenges

Development of environmentally friendly, efficient transport systems;

Objective

To promote efficient public transport systems and mitigate GHG emissions.

Policy statements:

EAC Partner States shall:

i. Develop plans and strategies to improve efficiency in public transport and associated infrastructure especially in cities and major towns;

ii. Promote investment in common public transportation; and

iii. Develop transport infrastructure suitable for all users.

Forest Sector

Forest cover plays a key role in providing carbon sink and sequestration while preventing soil degradation. Large scale deforestation can lead to increased emissions of Greenhouse Gases. The EAC through its forest resource base has been providing carbon sequestration service for the international community without any compensatory mechanisms from the international arrangements being in place. This has contributed to increased deforestation.

Challenges

i) Development of forestry as potential carbon sinks for the benefit of rural communities;

ii) Development of adequate plantation forests;

iii) Minimize leakage;

iv) Access to carbon credit facilities;

v) Deve lopment of appropriate forestry research;

vi) Development of appropriate cost benefits sharing mechanisms for forest management at community level

Objective

To ensure that the forest sector continues providing global services in mitigation of Climate Change while supporting sustainable development needs of the Partner States.

Policy Statements

EAC Partner States shall:

i) Undertake public awareness on the opportunities of forests as potential carbon sinks to benefit from carbon markets;

ii) Promote alternative energy sources and efficient biomass energy technologies to reduce pressure on forest resources;

iii) Promote Reforestation and Afforestation using appropriate tree species;

iv) Strengthen research and promote data and information exchange;

v) Develop guidelines for accessing carbon credit facilities;

vi) Promote forestry species diversity;

vii) Support appropriate mechanisms to reward or provide incentives for forest conservation and avoidance of deforestation;

viii) Promote activities that enhance the carbon storage capacity from forest ecosystems.

ix) Address all drivers of deforestation and forest degradation taking into account specific national circumstances within the context REDD;

Agriculture Sector

Agriculture plays a key role in improving food security and economic growth. Although the intensification of agriculture exerts pressure on soil and forestry resources it also contributes to natural carbon sinks. Increasing the agricultural sector contribution to Climate Change Mitigation should entail efficient crop and livestock production systems.

Challenge:

i) Having environmentally friendly and efficient livestock and crop production systems

Objective

To promote sustainable land management, planning and optimal utilization of natural resources for income generation and emissions reduction.

Policy Statements

EAC and Partner States shall:

i) Upscale activities that enhance the carbon storage capacity such as Conservation Agriculture and Agroforestry;

ii) Support development of joint research programs (including research on drought, pests and disease resistant crops and livestock), and foster cooperation with regional organizations to facilitate transfer of research developments from other regions;

iii) Support best agricultural practices that lead to reduced emissions such as soil conservation;

iv) Promote efficient crop and livestock production systems to reduce emissions associated with agricultural practices;

v) Develop methodologies for measuring and monitoring carbon sequestration in agricultural and agro-forestry systems to attract financial support for the International Community.

vi) Use and maximize opportunities from the international carbon market.

2.3.3.5 Waste Management sector

Emissions from waste are rising, and pose a particular challenge in developing countries. According to IPCC, waste contributes 1.3 billion tons of global carbon dioxide emissions annually. Waste management planning shall be a key issue in EAC Partner States. (Total emissions vs waste related)

Challenges

i) Establishment of an integrated and comprehensive waste management system;

ii) Enforcement of existing laws and regulations of waste management at household level;

Objective:

To promote waste management to ensure air quality, water quality and mitigation of greenhouse gases.

Policy Statement

i) Promote sanitary landfill waste disposal, preventive recycling and incineration where there is no other solution,

ii) Promote the generation of energy, organic fertilizer, and other byproducts from waste. Promote waste separation at source.

iii) Promote waste water treatment technology and reuse.

3.5 CLIMATE CHANGE MONITORING, DETECTION, ATTRIBUTION AND PREDICTION

The role and operation of the National Meteorological Services (NMSs) in Partner States of the EAC is to provide early warning information on high impact weather and extreme climate events (for example floods and droughts) for the safety of life, protection of property and conservation of the natural environment. This role can only be effectively achieved through systematic observations to monitor the prevailing climate conditions, fast exchange of data and products, generation of useful information for decision making and timely dissemination of the information to end users.
The National Meteorological Services (NMSs) of the EAC Partner States have a crucial role to play in generating climate change scenarios for the region that would not only contribute to the global assessments but also be used as a tool for adaptation, vulnerability assessment and mitigation of climate change and climate variability at the regional and national levels/ information

2.4.1 General Issues and Challenges

National Meteorological services (NMSs) of the Partner states of the EAC take cognizance of the knowledge that climate change scenarios play in understanding the vulnerability of communities and developing adaptation strategies that would minimize the associated impacts. Various challenges, however, exist that should be addressed to enable NMSs play the crucial role as IPCC focal points in systematic monitoring, detection, attribution and prediction of climate change to facilitate adaptation strategies in the EAC Partner States. These issues and challenges include:

i) *Insufficient Infrastructure* :Availability of adequate meteorological infrastructure for systematic observations (monitoring), fast communication (data and products exchange), processing and dissemination;

ii) *Inadequate Human Capacities*: Availability of sufficient well qualified human capacity;

2.4.2 Objective

To enhance the capacity of NMSs to effectively monitor, detect and predict climate change scenarios in the region to contribute to global assessments and development of adaptation options at the regional and national levels.

Policy statements and actions

The EAC shall address climate change monitoring, detection, attribution and prediction in the following ways:

i) Support modernization of meteorological infrastructure in the Partner States as there is inadequate weather observing stations, communication , processing systems, training as well as dissemination facilities for communicating weather and climate information for adaptation measures in all the climate sensitive socio economic sectors;

ii) Promote digitization and historical climate data rescue

iii) Support scientific research in climate change detection, attribution and prediction within the region

2.5. CROSS CUTTING ACTIONS

This policy has identified sectoral policy statements which are considered to be cross cutting. These include energy among others Research and Development, awareness and information management and sharing, where they apply, it is proposed that they should be implemented jointly in order to ensure efficiency and consistency in delivery of the services in the EAC region

2.5.1: Awarenes on Climate Change

i) Undertake public awareness on the importance of the forestry, wetland and marine ecosystems in the well-being of the region's environment;

ii) Create awareness of linkages between climate change and key sectors including health;

2.5.2. Research and Development

i) Support development of joint research programs on drought, floods, pests and disease resistant crops and livestock, and foster cooperation with regional organizations to facilitate transfer of research developments from other regions

ii) Strengthen research and promote data and information exchange of all forests and wetlands in the community;

iii) Promote periodic climate change related research and exchange of information in conservation and sustainable use of wildlife.

iv) Promote research on coastal and marine systems

v) Promote research in the area of Climate Change and human health

2.5.3. Information management and sharing

i) Develop a database and information sharing system for purposes of monitoring of wildlife resources in the region;

CHAPTER 3: IMPLEMENTATION

3.5 Introduction

The implementation of the Climate Change Policy will be the responsibility of the EAC Partner States and the Secretariat. In that context, a broder Strategy and master Plan at the regional level will be prepared to operationalise the policy.
Each EAC Partner State shall develop country specific policies, strategies, plans of action, legislation and institutional arrangements for addressing Climate Change in line with the EAC Climate Change policy. Regional projects, programmes and activities emanating from this Climate Change Policy will be jointly planned and executed by the Partner States and the relevant EAC Organs and Institutions.This will be achieved through strengthening and mobilizing of capacities of existing relevant institutions and facilities in the region to meet the pressing Climate Change challenges.

3.5 The Implementation Structure

Climate Change Initiatives are currenlty undertaken in piece meal by various departments, institutions and organizations. There is need to have a defined coordination and management unit in order to enhance synergy and minimize duplication. The established institutional framework should be backed by a comprehensive capacity building strategy. The institutional framework for implementing the policy shall include the Secretariat working jointly with relevant government agencies, organs of the Community, EAC Insitutitions including Lake Victoria Basin Commission, Lake Victoria Fisheries Organization, Inter-University Council of East Africa and others that will be established, backed by relevant Sectoral Committees, a Coordination Committee and finally the Sectoral Council of Ministers for Environment and Natural Resources.

The Civil Society Organizations (CSOs) have a role to play in the implementation of this policy.The linkage between this policy and Civil Society Organizations shall be refered to the provisions under Article 39(2)(a) of the Protocol for Environmental and Natural Resources. The coordinating institution shall be vested *inter alia* with mandates to design policies and strategies on Climate Change; designing relevant projects; introducing climate change materials in school curriculum; and building the capacity of research institutions involved in Climate Change related issues.

The basis for this implementation structure will be the established institutional framework established and agreed upon on the basis of the protocol for environment and natural resources Management. This will facilitate the creation of policy structures at EAC level with clear linkages with national institutions and regional arrangements with EAC organs and institutions outlined above. A similar working relations with international entities will also be established. The Sectoral Council on Environment and Natural Resources is the highest decision making body on all matters regarding to climate change as per the EAC Treaty.

3.3 Supporting and Enabling Measures

3.3.1 Financing

Generally financing and technology remain the key elements in the implementation of the Policy. Substantial funds will be required to support mitigation and adaptation initiatives/programmes. Sustainable funding shall be from the Partner States and , the Development Partners(multilateral and bilateral and intergovernmental) in partnesrship with the Private Sector.
Mechanisms shall be established to improve access to financing through:

i) Rationalizing the evergrowing number of fund (including eliminating duplications and harmonizing the governance of these funds to minimiize conditionalities to disbursement of the funds);

ii) Streamlining bureaucratic procedures; and

iii) Reduce transaction costs.

Appropriate measures shall be put in place to ensure equity in the allocation of funds based on needs and according to vulnerability criteria. There will be need to develop effective systems to ensure transparency and accountability in the utilization of funds mobilzed for Climate Change.

3.3.2 Capacity Building

The capacity building component shall focus on but not limited to the following areas and take into account the specific needs of relevant sectors:

i) Research and systematic observations;

ii) Education and training;

iii) Information and communication;

iv) Institutional capacity building (enhancing capacity of institutions in monitoring climate change impacts in the regions and the requisite response of interventions);

v) Enhancing capacity of regional institutions to carry out research on Climate Change issues;

vi) Designing and managing an integrated databank on climate change issues);

vii) Establishment of strong institutional management system;

viii) Skills development at all levels; and

ix) Technology transfer initiatives geared towards accelerating development, deployment, adoption, diffusion and transfer of environmental sound technologies targeting mitigation and adaptation.

Specifically, capacity building initiatives in the long run will:

i) Enable human resource development through focused training, mentoring and learning by doing approaches, among other measures;

ii) Empower relevant institutions at various levels;

iii) Enhance observation, research and knowledge management;

iv) Strengthen and use the regional network of information and knowledge sharing;

v) Develop tools, methods and technologies and support their application;

vi) Encourage and strengthen participatory and integrated approaches in planning and decision making including meanigful participation of the Civil Society;

vii) Share experiences, information and best practices of African countries;and

viii)Assess the strength and mobilize the capacities of existing relevant facilities and institution in the region and Africa.

Other capacity building initiatives will include: introduction of Climate Change issues into school curricula; awareness raising and skills training in negotiation skills, technology development and transfer, carbon trading and harnessing of indigenous technical knowledge.

3.3.3 Technology Development and Transfer

Development and transfer of technology are critical in achieving both the adaptation and mitigation programme in the region. Key areas of focus in the field of technology include but not limited to:

i) Enhancing technology development and transfer, including Hard Technology such as drip irrigation, water harvesting, drought tolerant crop varieties, renewable energy technologies and building technologies; Soft technology such as knowledge, systems, procedures and best practices;

ii) Addressing technology transfer barriers, including rules of trade tarrifs, intellectual property right barriers and technical trade barriers such as standards, eco-labelling;

iii) Enhancing and supporting research and development capacity in East Africa to foster the development and local manufacture of cleaner mitigation and adaptation technologies;

iv) Enhancing technology development and transfer within the EAC region through South-South and North-South cooperation.

3.4 Monitoring and Evaluation

Monitoring, evaluation and reporting will be integral components of this Policy to ensure harmony and effectiveness in its implementation. The EAC Secretariat will develop guidelines for monitoring and evaluation of Policy implementation at regional level including establishment of Climate Change responsive monitoring and evaluation mechanisms. The EAC Climate Change Master Plan to be developed will be an important tool in monitoring and evaluating the progress of implementation of this policy.

3.5 Review of the Policy

This EAC Regional Climate Change Policy will be reviewed every three years to take into acount emerging issues, challenges and trends.

EAST AFRICAN COMMUNITY

DRAFT DECLARATION OF THE 12th SUMMIT OF EAC HEADS OF STATE ON FOOD SECURITY AND CLIMATE CHANGE

WE the Heads of State of the East African Community (herein after referred to as EAC) assembled in Arusha, Tanzania, on this 2010;

Aware that climate variability and change is a serious global concern that is increasingly impacting negatively the EAC region's ecosystems, the natural resources productivity, people's livelihoods and indeed all development efforts;

Recalling that Article 105 of the Treaty for the Establishment of the EAC obligates Partner States to cooperate in the agriculture sector to achieve food security and rational agricultural production including crops, livestock and fisheries within the Community;

Conscious of the adverse impacts of Climate Change especially on environment, agriculture and food security in the region;

Considering that the socio-economic development of the region is currently and will for the foreseeable future remain predominantly dependent on our natural resources;

Cognizant of the need to enhance the development and implementation of programmes and activities relating to building resilience of communities and their preparedness to respond to the impacts of Climate Change;

Appreciating the importance of addressing adaptation needs in various sectors which affect the sustainable livelihood of all citizens and development in the region;

Acknowledging that, for the East African Common Market to provide opportunities and benefits to the EAC citizens, it must give priority to the food sub-sector because the majority (70% to 80%) of the people of East Africa are employed in the production, processing and marketing of food commodities and products;

Realizing the need to;

1. develop deliberate policies, strategies, legislations and institutional arrangements as an enabling environment to address the challenges of Climate Change in the EAC region;

2. increase public investment in activities that address both Climate Change Adaptation and Mitigation;

3. strengthen the Private Public Sector Partnership for purposes of contributing to both national and regional Climate Change adaptation and mitigation initiatives;

4. adhere to national and regional commitments on conserving natural resources in a bid to reduce the impacts of Climate Change to the EAC Citizens and the world at large;

5. continue building economic and social resilience of the EAC through the diversification of our economies and introduce measures for adaptation in climate sensitive sectors including the use of indigenous knowledge and practices and the strengthening of community organizations;

6. commit ourselves to creating a comprehensive framework of East African Climate Change programmes based on a regional Climate Change Master Plan;

7. accelerate implementation of the African Regional Strategy for Disaster Risk Reduction and the *Hyogo* Framework for Action including risk monitoring, observation, early warning, risk assessment, preparedness, emergency response and post-disaster recovery as an integral part of development and sectoral planning for Climate Change adaptation;

Acknowledging that there are several challenges that should be addressed to enable the region to effectively implement concrete adaptation activities;

Recalling the observation of the 9th Ordinary Summit of the EAC Heads of State, that the EAC Region is capable of producing adequate food for consumption as well as for export, given the natural resources potential that could be exploited for increasing agriculture production;

Reiterating the grave concern of the 11th Ordinary Summit of the EAC Heads of State about the state of food security in the region following three to four years of continuous drought which has afflicted millions of the people and especially the poor and therefore the need to urgently develop a Climate Change Policy and strategies to address the adverse impact of Climate Change, including determining how surplus food in one country can be shared in countries that are worst hit;

Noting the resolutions, declarations of:

1. the African Ministerial Conference on Environment (AMCEN) at its 12th Session held in June 2008 in Johannesburg,
2. the South Africa and the outcomes of the Eastern African Sub-Regional Meeting on Climate Change held on 31st August to 3rd September 2009 in Kigali, Rwanda;

3. the Ministerial Declaration on Climate Change of the EAC Ministers responsible for Environment and Natural Resources Management of November 2009 Arusha, Tanzania;

4. the Nairobi Special AMCEN meeting on Climate Change of May 2009;

5. the 15th Session of the Conference of the Parties and the 5th Conference of the Parties serving as a meeting of Parties to the Kyoto Protocol, as stipulated in the Copenhagen Accord of December 2009;

Concerned that there are high post harvest losses in the food value chain due to inadequate preservation and processing;

Declare our Firm Commitment:

1. that combating Climate Change is urgent and should be identified among the priority areas to be addressed in our region, in order to mitigate its negative impacts on the socio-economic development of the region for current and future generations.

2. to Article 24 of the EAC Protocol on Environment and Natural Resources Management as well as related policies within the Partner States.

3. to use the East African Community Common Market Protocol as an important instrument of ensuring Food Security in the region by accelerating the marketing and trade of strategic food commodities and products from all sources including crops, livestock, fishery and marine resources and forestry systems.

4. to promote development of financial instruments to mitigate risks caused by both natural calamities and fluctuations of prices.

5. to develop critical infrastructure especially in the rural areas to facilitate production, handling, storage, bulking and transportation of strategic food products across the region at minimal marketing cost.

6. to increase agricultural productivity through increased use of improved/modern technologies, water for production and reducing loses through pests and diseases.

7. to ensure enhanced food access and utilization in the EAC region.

8. to support the citizens of the EAC region to efficiently use the ample endowment in land, livestock, water and other natural resources to make the region net exporter of food products.

And Decide to:

A: Food Security

1. Immediately implement the EAC Food Security Action Plan

2. Fast track the:
   i) development of regional policy for food security;

ii) finalization, adoption and implementation of regional legal, regulatory and institutional framework for standards and Sanitary and Phytosanitary measures(SPS); and

iii) Institutionalization of structured food trading system including contract farming, out-grower schemes, warehouse receipt system and food commodities exchanges.

3. Increase the budget allocation to the agriculture sector to a minimum of 10% of national budgets by 2015 as per the Maputo Declaration directing them to priority programmes and projects for enhancing food security and poverty reduction.

4. Establish finance and insurance instruments for agriculture development especially for small and medium scale farmers and entrepreneurs.

5. Immediately invest and develop agro-industries for value-addition of food produce from the EAC region.

6. Ensure that all food security strategies and actions have in-built resilience to weather variability and adaptation to Climate Change.

7. Ensure that all food security strategies and actions have in-built gender and HIV/AIDS considerations.

B: Climate Change

1. Adopt a Regional Climate Change Policy to guide Climate Change actions in the EAC region.

2. Urge EAC Partner States to strengthen their meteorological and hydrological services.

3. Endorse the establishment of the EAC Climate Change Fund to specifically support adaptation and mitigation activities, including supporting research institutions of excellence in the area of technology development and demand-driven studies especially for Climate Change Adaptation.

4. Direct EAC Secretariat to develop a mechanism for managing the Climate Change fund and report by the next Summit;

5. Ensure that the Partner States undertake actions to increase funding for Climate Change adaptation.

6. Ensure that all EAC Partner States strengthen the emergency preparedness of the Health Systems to deal with the health impacts of Climate Change.

7. Ensure that all Partner States create special institutional arrangements in the short to medium term, flexible enough to coordinate Climate Change actions by different players.
8. Ensure that all EAC Partner States fast track the ratification of the Protocol on Environment and Natural Resources.

9. Direct the EAC Secretariat to finalize the EAC Climate Change Master Plan within six months and ensures its immediate implementation thereafter.

10. Ensure that all Partner States mainstream Climate Change in all the National Development processes.

11. Ensure that education and public awareness are up-scaled to enhance knowledge on the causes and impacts of Climate Change.

And Further Decide;

1. to establish funding mechanisms to mobilize adequate resources for the investment and working capital required to meet the objectives set in this declaration and invite all stakeholders including development Partners to support the operationalisation of the decisions under this declaration; and

2. that the Sectoral Council on Environment and Natural Resources is the highest decision making body on all matters regarding to climate change

3. that the Council of Ministers should follow up with Partner States, the EAC Secretariat, and other relevant stakeholders on the implementation of this declaration and report progress and outcomes to the Summit of Heads of State, annually.

Adopted, this ....., 2010, in Arusha, Tanzania