

INTERFAITH DIALOGUE IN TANZANIA



**Integrity of Creation and Challenges of
CLIMATE CHANGE –
Mission and Responsibilities of
Religious Communities**



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Religious Communities**

February, 2012



Inter-Religious Council for Peace Tanzania

P.O Box 76951, Dar es Salaam
Tanzania

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**Konrad
Adenauer
Stiftung**

P.O. Box 6992
Isimani Street, Upanga
Dar es Salaam, Tanzania
Tel: +255 22 2153174
www.kas.de/tanzania

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List of Acronyms

KAS	Konrad-Adenauer-Stiftung
IRCPT	Inter Religious Council for Peace in Tanzania
BAKWATA	Baraza Kuu la Waislamu Tanzania
CCT	Christian Council of Tanzania
TEC	Tanzania Episcopal Conference
TAMPRO	Tanzania Muslim Professionals
CPT	Christian Professionals of Tanzania
FBO	Faith Based Organization
NGO	Non Governmental Organization
CBO	Community Based Organization
REA	Rural Energy Agency
HEP	Hydro Electric Power
GDP	Gross Domestic Product
GHI	Gross Happiness Indicator
WTC	World Trade Centre
TEDC	Tanzania Ecumenical Dialogue Council
SAUT	St. Augustine University of Tanzania
GHG	Green House Gas
TANESCO	Tanzania Electricity Supply Company

1.0 INTRODUCTION

1.1 Background Information

Climate change is a global crisis which requires global solutions that put the well-being of all people first, especially the most vulnerable. This is reinforced by the reality that it is the poor and vulnerable who are most profoundly affected by the environmental impact of climate change such as droughts, floods, water shortages and rise in sea levels. It has been noted that Tanzania is already experiencing visible effects of climate change, such as floods, prolonged droughts, desertification, rising sea levels, and depletion of rain forests. The available water, which was a God given gift for human beings and animals, is becoming more and more scarce.

Faith communities have a crucial role to play in pressing for changes in behavior at every level of society and in every economic sector.

Religious leaders have a key role to play, probably more than any other section of society. This is because they have the backing of their followers. Whatever they preach, worshippers will easily believe and act accordingly. They can use the same approach to impart knowledge of mitigating climate change and rescue the nation from occurring disasters such as floods and droughts. Religious leaders can educate people on proper environment management such as planting trees. People must understand that this earth is like a renting home. It is being rented to human beings from the time of birth to the time of death. So human beings are expected to ensure that they manage their home wisely. It has to

remain green, clean, and unpolluted. If our ancestors did not manage the environment, nobody would have been proud of it today.

The Interreligious Council for Peace Tanzania (IRCPT) in cooperation with Konrad-Adenauer-Stiftung conducted a workshop to enhance the capacity of the religious leaders on addressing issues related to climate change.

This activity was implemented through an Interfaith Dialogue among religious communities which brought together religious leaders and experts from different faiths to discuss and deliberate on issues of common interest pertaining to climate change. Experts on climate change were invited to give technical presentations on climate change.

1.2 Objectives of the Workshop

1.2.1 Overall Objectives

- The overall objective of the workshop was to strengthen interfaith collaboration through interfaith dialogue and action on issues of common interest
- Then, it was to create a forum for interfaith dialogue and action among religious leaders.

1.1.2 Specific Objectives

- a) Promote information exchange on Climate Change among faith based organizations
- b) Identify priority actions on Climate Change for which faith communities can engage in future

1.3 Expected Outputs of the Workshop

- Religious leaders will have been informed on different issues pertaining to climate change
- Religious leaders will come up with key issues for future planning on climate change programming

1.4 Participants

The workshop was attended by about 50 representatives of Faith Based Organizations (see full list on Appendix 2). They included leaders from Muslim Council of Tanzania (BAKWATA), Christian Council of Tanzania (CCT), Tanzania Episcopal Conference (TEC), Buddhist Community, Bahai, Mufti's Office in Zanzibar, Tanzania Muslim Professionals (TAMPRO), Christian Professionals of Tanzania (CPT) and key persons from Stella Maris Mtwara University College and Nishati Associates.



*The short coffee break was used to take a group picture of all participants.
(In front: Stefan Reith, Sheikh Manyanya, Bishop Munga and Father Makunde)*

2.0 OFFICIAL OPENING

2.1 Welcoming Remarks and Opening Prayer



The IRCPT Secretary General, Rev. Fr. Anthony Makunde welcomed all participants to the workshop, thanking them for their willingness to participate in the event. He told the audience that the workshop was a two-day event, which will discuss on climate change and come up with proposed actions that will lead to increased participation of faith-based organizations on environment issues. He reminded them that Creation and Environment are two inseparable issues for faith communities. “It is our primary duty to protect and nurture the environment so that it protects us” he noted. The issue of climate change is not a political agenda, but a responsibility of religious communities as well. He urged participants to ensure that their ideas are translated into action for all faith communities, ensuring they become a model: e.g. how many trees do we plant each year, what type of vehicles are we using etc.

The welcoming remarks were followed by a brief note from the KAS Country Representative Mr. Stefan Reith, who explained that the issue of climate change is an international agenda and the fact that KAS would like to see it considered more actively. He told the participants that there are global initiatives on climate change happening in different countries and that he would like to see more collaboration on the same issue with faith communities.

2.2 Keynote Address

The keynote address was given by Dr. Bishop Stephen Munga from Christian Council of Tanzania (CCT). In his talk, His Grace stated that climate change is a reality which cannot be denied. As examples, he cited the melting of snow on Kilimanjaro Mountain, the change in rainfall patterns, floods, and prolonged droughts to give only a little evidence for the change.



The Bishop said that according to research findings, human beings are the main contributors to the problem of climate change and hence also the solution to it. He also said that the human being has turned to be both, an irresponsible steward and an opponent of the creator by working against His plan of good creation. He thus pointed out that the solution to climate change is in changing the behaviour of the human being.

However, Bishop Munga lauded efforts made by religious leaders and FBOs at global level towards addressing the challenges of climate change. He observed that moral teachings about climate change have significant impact on transforming life-style and individual thinking regarding the protection of the environment.

The prelate then said that religious communities have a key leadership role to play in retarding the effects of climate change. He underscored the importance of unity and collaboration among religious groups in addressing challenges of climate change.

Bishop Munga urged religious leaders and FBOs to advocate and act for policy change to ensure that country policies and legal framework are favorable to the protection of the environment and sustainable development.

He finally expressed hope that at the end of the two-day workshop, the delegates would be able to identify priority areas and relevant strategies for intervention.

2.3 Presentation of Papers

2.3.1 Paper 1: Climate Change and Mitigation: Rethinking Beyond COP 17, Durban, November, 2011

The paper was presented by Rev. Dr. Aidan Msafiri, Senior Lecturer, Department of Philosophy, Stella Maris Mtwara University College. In his presentation Dr. Msafiri highlighted on the following key points:



- The key questions to be addressed before thinking of mitigation.
- Vital facts and examples of the effects of climate change in Tanzania which include:
 - √ Problems in hydro-electric power generation due to prolonged drought
 - √ Widespread health hazards, e.g. increased malaria infection, instances of acute cholera outbreak and meningitis

- √ Infrastructural dilemmas and crises, e.g. El Ninos, causing huge damages to infrastructures
- √ Negative effects on agricultural production and pastoralism, e.g. annual decrease in production of both, food and cash crops, and loss of pastures. According to the presenter, all the examples listed above are 'wake up calls'.
- As means to mitigate the challenges of climate change he said FBOs and religious leaders need to:
 - √ **Act personally** by reviewing one's own life style, taking steps to planting trees, and using locally produced agricultural products.
 - √ **Act communally** as interfaith entity, hold bonanza, eco-prayers, awareness raising programmes, and introducing environmental subjects in their schools.
 - √ **Act ecclesially and ecumenically** in promoting fundamental values such as justice, peace, partnership, accountability, responsibility, discipline etc.
 - √ **Act nationally** for common wellbeing and national happiness.
- Climate change is an ethical problem, which needs ethical solution.
- Religious leaders should be role models in promoting good moral values that preserve the environment.

- As role models, FBOs need to be innovative in making use of alternative energy sources.
- There is a need to reorient the economies to be “God-centered economies”.
- Need for faith-based “Think Tanks” cherishing environmental values, passion, and professionalism to provide advice, research, and address climate change issues.
- Develop alternative globalization, addressing people and earth (AGAPE) model in fighting for worldwide justice.
- Ethics of climate change and mitigation – the 10 interrelated values.
- Climate change poses impending threats to the future of humans, non-humans and the cosmos of today and future generations.
- Reiterated that climate change means a “Wake-Up Call” or “Kairos” that challenges everybody to shun the culture of greed and selfishness.
- Need for character formation through role modeling
- Need for collective development of true values and cultures of compassion, care, and solidarity in bringing about deep change as the best way to save the environment.

2.3.2 Paper 2: The Challenge of Climate Change for the Future Supply of Safe and Sustainable Energy – The Potential of Renewable Energies for Tanzania

The paper was presented by Mr. Finias Magessa, Renewable Energy Expert, Nishati Associates. The paper focused on the following:



- Introduction to climate change
- Main factors contributing to climate change land use, fossil fuel use, burning and clearing of tropical forests, green house gas emissions.
- Features attributed to climate change in Tanzania - changing weather patterns, decrease in food production, new health risks, melting of ice on the peak of Kilimanjaro.
- General challenges of climate change - impact on food security and economic growth, energy availability. Poor developing countries are mostly at risk as they mainly rely on agriculture.
- Situation of energy supply in Tanzania - majority of Tanzanian population lives on biomass (90%) - against the other lower energy consumption shares (petroleum 8%, electricity 1.2% and others as solar, wind, etc. 0.8%). But budget allocation by the Energy and Minerals Ministry is less than 1%.

- Current situation of energy use and potential future needs for Tanzania.
- Climate change related challenges to the current and future supply of safe and sustainable energy – generation of electricity relying on hydro system (53%) while rainfall decreases and rural communities depending on natural forests by 90% while drought persists.
- Potentials of renewable energy in Tanzania is high for solar radiation, wind and biomass are abundantly available, and development partners are interested in renewable energies.
- Examples of functioning renewable energy projects in Tanzania – e.g. Mawengi mini hydro (generating 300kW), Matembwe micro hydro (90 kW), and several others.
- Priority areas and opportunities for future action include: developing policy, strategy and legal framework, developing and supporting implementation of programmes and projects on low carbon efficient energy technologies, planning and supporting increased use of decentralized modern safe energy systems and promoting renewable energy knowledge management.

Mr. Magessa said other priority areas include establishing robust forest management systems to stop forest fires and deforestation of catchments areas. Developing capacity of public and private sectors to formulate, raise investment capital,

implement and tap inherent carbon credit benefits in clean and safe energy projects, and developing mitigation and adaptation programmes.

▪ **What should be done**

- √ Every religious leader is obliged to preserve the land and environment as a responsibility given to him by God.
- √ The government or single stakeholders acting individually, cannot overcome the challenge.
- √ Concerted efforts are required from all stakeholders including religious organizations.
- √ Some religious organizations already promote and use decentralized clean energy systems.

▪ **Practical Proposals**

- √ Religious leaders should deliberately and practically embark on planning, packaging information, and promoting use of renewable energy technologies and services as means of keeping the earth.
- √ Every establishment (education, health and social facilities) of religious organizations should aim at first tapping all locally available clean energy resources before thinking about fossil fuel.
- √ Religious leaders should influence the Government and its members of congregation regarding the climatic, economic and social

importance of using locally available renewable energy technologies and services.

- √ Pilot and demonstrate feasible and viable use of renewable energy technologies on their establishments and on that of their members of congregations.
- √ Promote to congregation members and the community as a whole the requirement to take care of environment as a responsibility and terms of reference from God.

2.3.3 Remarks from the Key Discussant, Sheikh, Nasibu Manyanya



- After the two presenters, Sheikh Manyanya, who is an activist on environment, opened up a discussion from FBO representatives on the topic at hand.
- He noted that, being representatives of our faith communities, we have a key role to play.
- To him, religious teachings should guide on how to protect the environment as part of God's Creation. He noted human beings have a unique role concerning what is happening to our environment and therefore our practices have to be guided by ethical considerations as opposed to economic gains alone.

- He also noted that faith communities have the capacity to engage since there are already experts deeply vested in climate change in the communities. In this respect, he also referred to the strong team which went to COP 17 in Durban. He was of the opinion that while we think of external support, we need to take account on our own resources as well.
- He therefore asked participants to consider the issue of climate change in a broader perspective, which looks at practical solutions to the surrounding problems.

3.0 PRESENTATIONS FROM GROUP DISCUSSIONS

Participants were divided into four groups with specific guiding questions on which they were supposed to discuss and report back.

The guiding questions included:

1. Religious Leaders looking holistically at policy issues.
2. Basing on Dr. Aidan Msafiri's presentation - specific things FBOs can do to support:
 - a) Adaptation to climate change.
 - b) Mitigation of climate change.
3. Basing on Mr. Finias Magesa's presentation – Identify available opportunities and how they can be used for the benefit of FBOs and other groups (Thinking outside the box).

The main issues brought out during the group discussions were the following:

Group 1: Religious Leaders

1.
 - a) Conduct ToT's of Religious Leaders on the basic facts of climate change.
 - b) Faith Based Organizations prepare Action Plan on climate change.

2. Develop FBO's policy on climate change and environmental issues (after review of existing policies).
3. Do advocacy on climate change issues based on policy at place.
4. Preparation of Interfaith Guide on climate change.
5. Put in place Interfaith bulletin on climate change.
6. Each FBO to do afforestation to improve institutions habitat.



The groups discuss passionately

Group 2: Adaptation to climate change

Objective	Activity	Resources	Responsible	When
To improve integrity of creation by assisting communities	Sensitization on constructing water reservoirs, bore holes and use of rain water for irrigation.	Religious leaders, water experts, publications.	Religious leaders, water experts.	
to adapt to climate change.	Building capacity of citizens to cultivate short period and drought resistant crops.	Agricultural experts, short period and drought resistant crops.	Agricultural experts.	
	Promote modern livestock keeping.	Livestock experts.	Livestock experts.	
	Lobbying the government on irrigated farming.	Religious leaders, Policy.	Religious leaders (IRCPT)	
	Providing adequate education to the believers on climate change.	Religious leaders, experts on climate change, publications.	Religious leaders, experts on climate change.	
	Building capacity of Religious leaders on climate change and lobbying.		IRCPT, KAS	

Lobbying developed nations to provide funds to developing countries to address the challenges of climate change.		IRCPT, KAS	
Strengthening FBO to track funds set aside for addressing climate change.		IRCPT, KAS	
Educating believers to combat diseases resulting from climate change, e.g. malaria.		Religious leaders.	
Building solidarity with victims of catastrophes resulting from climate change.	Food, beddings, clothes, counselors.	Religious leaders.	



The groups in discussions

Group 3: Mitigation of climate change

Objective	Activity	Resources	Responsible	When
<p>Overall Objective To mitigate challenges and impact of climate change.</p> <p>Specific Objective: 1. To educate the society about climate change.</p>		Religious leaders, water experts, publications.	Religious leaders, water experts.	
	Giving sermons	Religious leaders.	Religious leaders	Feb – April, 2012
	Conducting seminars, symposiums and workshops.	Expert believers, participating believers, prayer houses, conference rooms, stationeries, funds, time.		
	Encouraging believers to participate in social groups on climate change.			
2. To initiate projects to mitigate challenges of climate change.	Planting trees and cleaning of the environment.	Religious leaders, believers, experts, youths, funds, conference rooms, play grounds, land, seedlings/trees, implements.	Religious leaders, coordinators, committees.	March – May, 2012.

2. To initiate projects to mitigate challenges of climate change.	Planting trees and cleaning of the environment.	Religious leaders, believers, experts, youths, funds, conference rooms, play grounds, land, seedlings/trees, implements.	Religious leaders, coordinators, committees.	March – May, 2012.
	Theatre Arts and sports activities e.g. bonanza, events, exhibitions.			June – July, 2012, Nov. – Jan., 2013
	Educational and sensitization trips			June – July, 2012, Nov. – Jan., 2013
3. FBOs being good examples of in the society.	Planting trees and ensuring clean environment around their institutions.	Religious leaders, believers, experts, seedlings/trees, implements for cleanliness, funds.	Religious leaders, related committee.	Feb – Dec, 2012
	Use of alternative energies.			
	Avoiding excessive use of energy.			

4. To advise and lobby the government to introduce policies and laws, which mitigate challenges of climate change.	Preparing debates.	Religious leaders, experts, government leaders, MPs, funds, conference rooms, transport.	Religious leaders, relevant committee, IRCPT.	Feb – Dec, 2012.
	Meeting targeted government leaders and lobby them, e.g. dinner.			
	Meeting and discussing with Members of Parliaments.			
	Working in partnership with related NGOs, CBOs.			

Group 4: Available opportunities of renewable energies and how they can be used for the benefit of the FBOs and other groups

Building Awareness

1. Teachings on climate change in religious sermons.
2. Preparing publications on environment protection with citations from the holy books.
3. Identifying services offered by FBO, which affect or protect the environment (education, health, agriculture and livestock keeping).
4. Recognizing available policies and laws relating to environment and climate change.
5. Building capacity and knowledge of Religious leaders (Study tour to micro-hydro and biogas units, trainings, workshops, RET and EBP).

Available opportunities

1. Availability of policies and laws on environment.
2. Availability of the believers (religious followers).
3. Availability of examples of usage of technologies, which are friendly to the environment.
4. Availability of residues, which can be used as alternative energy.
5. Availability of FBO owned institutions such as schools, hospitals, and centers of behavior change.

6. Presence of supportive institutions for alternative energies e.g. Rural Energy Agency (REA).
7. Availability of professionals.

Strategy and Plan of Action

1. Identifying strengths and weaknesses of available policies and laws and carrying out advocacy.
2. Making inventory of institutions, professionals and eco-friendly resources which are locally available.
3. Preparing and establishing places for demonstrations and pilot projects.
4. Conducting study tour for capacity building.
5. Executing and monitoring implementation of policies.
6. Religious institutions should establish environment desks for monitoring environmental issues and their establishments.
7. Religious leaders should walk the talk – use eco-friendly resources in their houses and places of worship.
8. Develop policies, which promote usage of environment friendly energies.

Appeal

1. Religious leaders should change and convince their followers to change and follow teachings on environmental protection.

2. Religious leaders should convince the government to oversee, prepare, and review good policies and laws, which protect the environment.
3. Religious leaders should ask the government to put in place simple policies to promote use of eco-friendly technologies.



Afterwards the results are shared with the rest of the participants.

4.0 DISCUSSION IN PLENARY SESSIONS

The main issues raised in the plenary sessions were the following:

1. There is need to change behavior to save the environment.
2. We will achieve our goals only if there is cooperation and solidarity.
3. Let us teach our children good behaviour, e.g. caring for the environment.
4. We ought to love the environment.
5. We need to walk the talk to contain the challenges of climate change.
6. There is need to create enabling environment for the youth to be able to employ themselves and make use of the country's resources.
7. There is need to teach our children universal virtues such as caring for the environment, love, service to humanity etc.
8. There is need to challenge globalization and free market economy, which lay too much emphasis on economic gains regardless of the resulting environmental destruction.
9. We need globalization with a human face instead.
10. There is need to invest in behaviour change to contain challenges

11. There is need of lobbying our leaders to put in place strategies, which will improve the environment.
12. The action plan should include the component of donor for purposes of getting funds.
13. We should not depend too much on donors.
14. There is need to review existing legal frameworks and policies on environment to close gaps.
15. There is need to examine if economic production is done in environmentally friendly and sustainable ways.
16. There is need to examine cultures of different ethnic groups, which are unfriendly to environmental sustainability e.g. the culture of setting bushes on fire in order to get prey.
17. There is need to look at human rights and cultures.
18. Implementation of some of the issues raised in the presentations could start immediately.
19. Religious leaders should make use of different opportunities to talk about climate change.
20. There is need to meet government leaders and discuss rather than issuing statements in newspapers.
21. There is need to work with interfaith committees where they exist.
22. There is need to have short and long term plans.
23. Capacity building should be given highest priority.

5.0 CLOSING

The two days workshop was closed after agreeing on the formation of a task force to finalize the resolutions, which will be shared with the members within three weeks.

In his closing remarks, the Secretary General of IRCPT, Rev. Fr. Anthony Makunde said as follows:

1. It was time to take action since commitment had already been made in the joint communiqué on climate change and the COP 17.
2. Faith Based Organizations are perfect partners to make a difference on climate change in the country since they have the potential of reaching out to the majority of citizens. However, there is need to work together.
3. There is need to start with awareness raising about climate change, which will contribute to mitigation or adaptation.
4. Finally, he called upon the participants to be good summoners of what was learnt from the workshop.

Within his part, KAS Resident Representative Stefan Reith said he was delighted to be with the participants for the two days. He thanked the Chief Guest Bishop Dr. Munga, the Discussant Sheikh Ali Manyanya, the presenters, the moderator and all participants for their contributions. He also ensured that KAS would be pleased to work with FBOs again,

adding that KAS was committed to work with them and connect them to other supporters.

Giving a vote of thanks on behalf of the participants, Mr Ali Mose, from the Ahmaddiya Muslim Jamaat extended appreciations to IRCPT and KAS for organizing the workshop, to the Chief Guest for his keynote address, and to the presenters for their papers. He also said that the workshop had widened their knowledge on climate change.

He stated that IRCPT is an important organization as there is no other interfaith movement in the country that unites leaders of different religions such as IRCPT.

Expressing participants' commitment to IRCPT's work, he said: "Since IRCPT is our baby, do not hesitate to convene us whenever need arises regardless of availability of funds...you should not spare us, give us challenges."

Finally, the Chief Guest, Bishop Dr. Munga thanked the delegates for the active participation during the two days of workshop and declared the workshop closed at 15:40 p.m.

APPENDIX 1: KEYNOTE ADDRESS AND PAPERS PRESENTED

Keynote Address by Bishop Dr. Stephen Munga

Integrity of Creation and Challenges of Climate Change – Mission and Responsibilities of Religious Leaders

A Keynote Address Delivered to a Workshop of Religious Leaders

Habour View Hotel – Dar es Salaam on 31st January – 1st February 2012

*Your Excellency Religious Leaders,
Faith Based Organizations Secretaries General,
Women and youth of faith,
IRCPT Secretary General Fr. Anthony Makunde,
KAS country representative Stefano Reith,
Ladies and Gentlemen,
Peace be with you all!*

Ladies and Gentlemen,

It is a pleasure for me to be with you today to discuss and deliberate on this important issue of climate change which is affecting us all. Far above that it is a great honor for me to get the opportunity to give this keynote address on such an important and pressing issue. Beyond this keynote address and all the discussions which are going to take place I believe we will not end up being another 'Durban' rather we will come up with very substantial agreements which will take us to visible actions. Therefore, allow me to highlight some few general observations as a reminder to us all.

Firstly, is an affirmation that climate change is a reality. There are a good number of indicators in our country which supports this affirmation: the melting of snow on Mount Kilimanjaro; prolonged drought with consequent water shortages, diminishing fertile and productive land with consequent food shortages, changes in rainfall patterns and periods with resultant catastrophes like the flood crises we experienced last year, etc. In short, for a poor and technically underdeveloped country like ours both the magnitude and intensity of the impact of climate change in geographical, social, and economical dimensions is difficult to encompass and explain.

Secondly, there is a growing consensus among the scientific communities that human activities are the largest contributor to the problem of climate change. In other words, the human family in God's creation is the cause of existential suffering and hardship of the whole creation. From that point of view human beings have become both a stumbling block and a problem to well being of the rest of the creation. Instead of being the measure of life sustainability, the measure of sustainable development, and the measure of beneficial civilization by being responsible stewards and co-creators of God, human beings have become opponents of the creator by working against God's plan of 'good creation'. Actually, all the hesitations we learn from the Durban statements of COP 17 by some of the parties, that hindered the way to a conclusive positive agreement, reflect a strange phenomenon in human moral thinking. We are not so much concerned with environmental destruction where there are economic gains. Just as Bishop Desmond Tutu said in his opening speech prior to the COP 17 meetings that the world is our home and we have to live here; and that it is strange that some of us do not see it this way instead they are systematically engaged in destroying the very home we live in. That being the case, the first solution to climate change is to

change human beings – the way we think and act in relation to the rest of creation. If we do not change and continue on our current course, then we should expect more destruction such as extreme natural disasters, extreme drought and food insecurity, mass migration, health hazards and different sorts of insecurity. Obviously, such destructions will affect all of us, and as we have heard again and again, poor countries particularly Africa, will be the most affected. In addition to all that, climate change is seen to be a threat to peace as it limits the means of existential survival.

Thirdly, as many of us are aware of the seriousness of the problem of climate change we are also aware of the efforts put by various stakeholders, including Faith Based Organizations (FBOs), in trying to address the issue. At the global level many religious leaders and religious communities are taking actions to address the challenges of climate change. Today, there are growing numbers of religious leaders and FBOs lifting up the faith and moral dimensions of climate change in their teaching and practice. In their teaching they assist their believers to discover the connection between the challenges of climate change and the foundations of their faith and apply that understanding in practice. They are working for transforming the way of thinking and personal life-style so as to have a profound impact in the way they relate to environment. In other words, this teaching leads to a rediscovery of lost understanding that we are a component of the environment. These are commendable efforts which will gradually lead to an increased number of “green congregations” that are committed to modeling environmental practices and other similar positive results.

Ladies and Gentlemen,

What should we do? It is important to know that unity of will and action is essentially a pre-requisite for achieving such

required ends. Thus we need to remove the barriers that hinder us from collaborating in addressing the challenges of climate change. We need to go beyond the boundaries of our thoughts and beliefs in order to create such unity. Furthermore, we have to realize and appreciate the fact that such unity is built on multi religious collaboration and as we stand at a last point of return that is the only survival option we have before us which can lead us to victory. Together we have to rebuild our home which we have destroyed. In simple words we can say: if we want to survive today and assist future generations then we have to keep this planet beautifully alive and safe for all of us. Therefore, religious communities have a key leadership role to play in retarding the effects of climate change. Let each one of us again and again ask this question: “How can I faithfully and creatively live the teachings of my faith so as to care for the earth that supports me, other human beings and the whole creation?”

Challenges of climate change have helped us to create a common ground upon which all religions stand and struggle for the sustenance of the highest common gift namely the gift of life. Life as highest gift is life as given by the highest source of life. That being the case, life has to be protected responsibly. That is partly the reason why we all share a common commitment to justice, peace, solidarity, tolerance, respect, trust, moderation and service. Religion is thus already strengthening the ethical framework for action on climate change. It does so because it constitutes a body of knowledge for educating our communities about values that lead to a common global responsibility. Religion has the power to create motivation for change and encourage its followers to take necessary steps in order to reach the required goal even when sacrifices are needed in order to achieve such desired goal. Global warming and the resulting climate change challenge our generations in

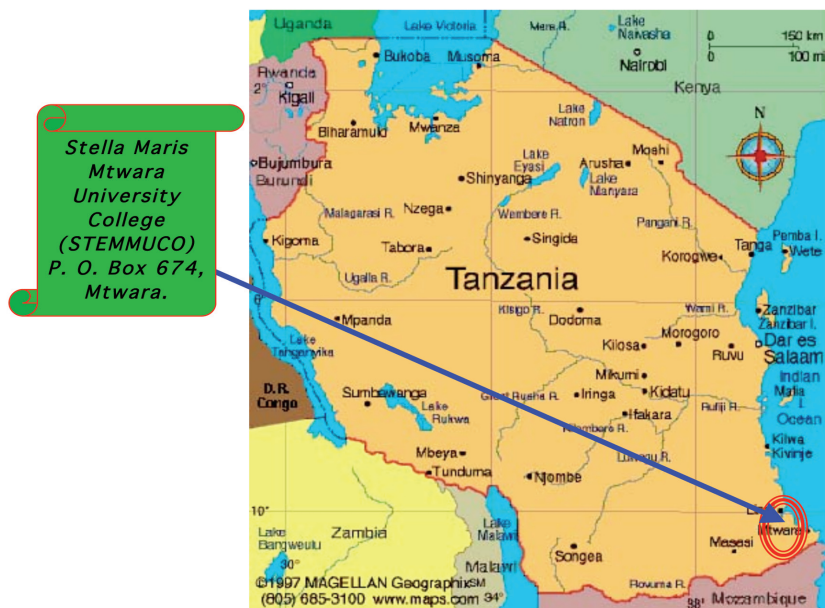
various fundamental ways which science alone cannot solve the problem. We need to transform and liberate the human thinking in order to win this war against climate change. If human beings are the major cause of climate change then they are also the solution to it.

Another worth mentioning action is to reach out to the wider communities. Among the many alternative ways is for the religious leaders and FBOs to advocate and act for policy change. This is important because what FBOs do have to have impact in the whole society and that impact has to be sustainable. Public laws and policies are thus important in this connection as they bind all people equally. The issues here are: how clear and focused are our environmental and investment laws and policies and how do they function? Pressing for good laws and policies can help us also to transform our economies so that they operate as environmental friendly instruments for sustainable development.

We Religious Leaders in Tanzania have made our commitment in our statement to COP 17 that we will engage ourselves and our communities in addressing climate change issues strategically in terms of adaptation and mitigation. As we deliberate in this two days workshop on the theme: Integrity of Creation and Challenges of Climate Change – Mission and Responsibilities of Religious Leaders, it is my sincere hope that we will be able to identify priority areas and relevant strategies for intervention. In so doing, we have to be honest to our own commitments. This is the best opportunity ever to work together as responsible stewards of God; and therefore, let us show the world that we are truly and honestly responsible stewards of His creation. May God pour upon us His wisdom as we continue to deliberate on this important topic!

Paper 1: Climate Change and Mitigation: Rethinking Beyond COP 17, Durban, November, 2011

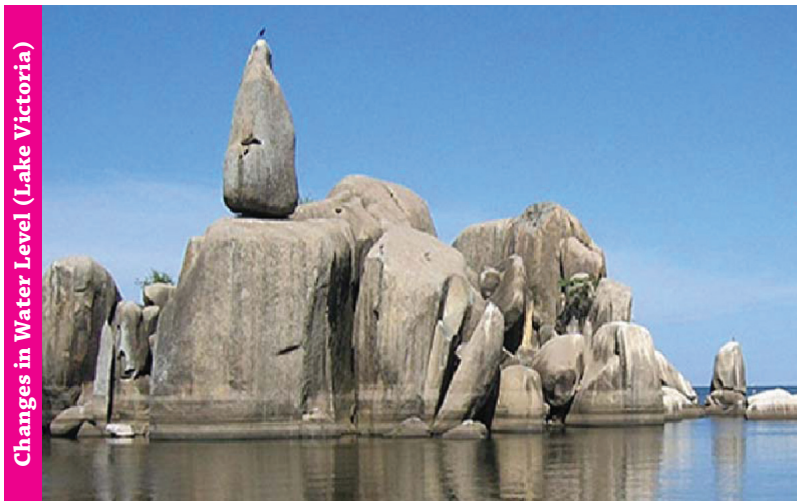
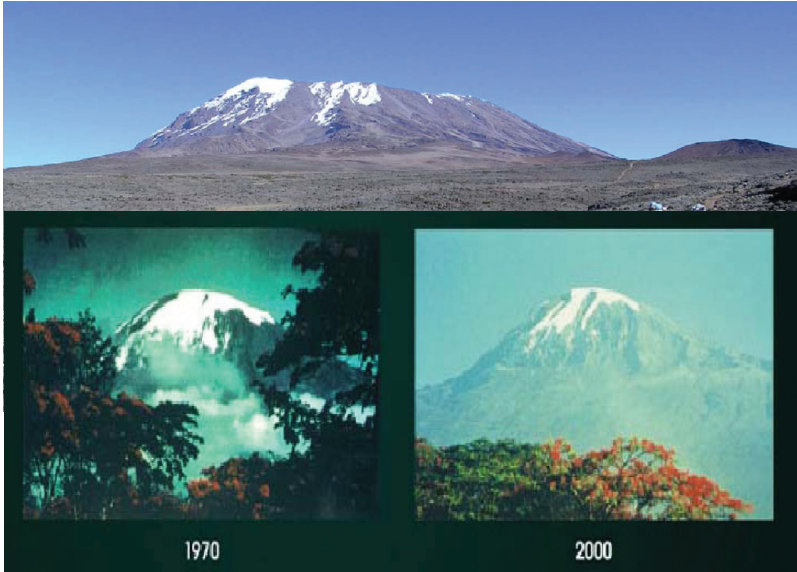
The paper was presented by Rev. Dr. Aidan Msafiri, Senior Lecturer, Department of Philosophy, Stella Maris Mtwara University College, St. Augustine University of Tanzania (SAUT).



Climate Change:-

According to Encyclopedia Britannica,(2008) climate change refers to “periodic modification of Earth’s Climate brought about as a result of changes in the atmosphere as well as interactions between the atmosphere and various other geological , chemical, Biological, and geographic factors within the Earth’s system.” Example; Mt. Kilimanjaro, Lake Victoria.

Drastic Changes in Mt. Kilimanjaro (1970-2000)



Mitigation:-

Before Thinking of Mitigation, let's ask ourselves Questions:-

- Where does our Materialistic and Consumeristic Culture lead us to after the World Population hit 7 billion on the 31st October 2011?
- Do we see climate change as the greatest human catastrophe of our times hard hitting the poor or we simply ignore its threats to soil fauna today, tomorrow and thousands of years to come?
- As Faith Based Organizations could we rediscover the fundamental African and global Earth Keeping Values and Principles, norms to curb ever growing Climate Change or not?
- Do we wait until we reach the point of no return? Could we consider CO17 here in Durban as a “Wake up Call” last point of return?
- Are we aware of the invisible aspects and impact of climate change particularly to Africa.
- Do we take the issue of environmental Stewardship and Sustainability simply as other political propaganda?
- What can African Faith Based Thinking Tanks Scholars, Elite Politicians and Leaders do to Convene the greatest Polluters to Change their Life Styles?
- Do we know that “When good people do nothing, Evils increases”?

Vital Facts and Examples on the Effects of Climate Change in Tanzania

The Hydro-Electric Power (HEP) Nightmare and As A Result of Climate Change:-

- First, due to prolonged drought spells, both the Mtera and Kidatu HEP dams have failed to supply enough water to produce electricity.
- The quality and dignity of life of many Tanzanians especially those living on the big Cities and towns (e.g. Dar es Salaam, Mwanza, Arusha, Morogoro, Tanga, Moshi etc) is at stake. Big rivers (e.g. Pangani River and its very fertile basins) are now dwindling both as a result of less annual precipitation and glacier activity.
- River Pangani gets its water mainly from the glaciers and iceberg of Mt. Kilimanjaro, and the highest mountain in Africa (5,993 meters a.s.l.).



The Widespread Health Hazards Brought by Climate Change:-

- Malaria outbreak is now reaching catastrophic proportions in Tanzania. Admittedly, due to rise in mean temperatures, today, Mosquito causing malaria do survive even in the then cooler regions and areas of Tanzania e.g. Kilimanjaro, Mbeya, Kagera, Iringa, Njombe. These regions in particular are reporting increased incidences of malaria infections ever.
- Tanzania has recently been experiencing acute cholera and dysentery instances. Among others, the Dar es Salaam, Pwani (Coastal Region) Lindi, Mtwara and Tanga region in particular are experiencing repeated outbreaks and even more deaths. Other regions or places in Tanzania (e.g. Dodoma, Singida, Mbulu etc) are said to have increased incidences of air borne diseases e.g. Meningitis during the hot seasons of the year.

Infrastructural Dilemmas and Crises brought by Climate Change:-

- Unexpected El Nino spells have for several years now caused huge damage especially to the entire Tanzania infrastructure. These include railways, roads, airports, ports, power lines and sewage systems. The City of Dar es Salaam is the worst hit and we all know this!
- Heavy rainfall also, result into massive destruction of infrastructure and road building and maintenance.
- Unpleasant traffic jams in the city of Dar es salaam affect the society by staying very long hours on the road, inhaling

toxic emissions and a hypertensive generation which lacks sufficient sleeping hours. As religious leaders from all over Tanzania are we individually or collectively not affected by this crises and nightmare.

Negative Effects on Agricultural Production and Pastoralism:-

- Unpredictability and unreliability of rains, drastically affects agricultural production of both food and cash crops has remarkably been on the decrease year after year. Maize production for instance has decreased by 34% in the central regions of Dodoma, Singida and Arusha. In the so-called “Big Five” (Iringa, Mbeya, Ruvuma, Rukwa and Morogoro) maize production has decreased to 15%.
- The annual rise in mean temperature through climate change has far reaching pastoral consequences. For several years now cattle rearing regions in Tanzania especially Mwanza, Shinyanga, Singida, Arusha, Dodoma have continuously experienced prolonged and severe drought and tsetse fly plague. Today, almost 60% of Tanzania’s pasture land unsuitable not only to animal (cattle, goats, sheep, donkey).

Mitigation: Roadmaps and Pathways for Good (Best) Practice by Churches and Religious Leaders in Tanzania

Admittedly, there is great wisdom in the old Latin saying which goes “Nemo dat non quod habet” (Literary: You cannot give something which you do not have). What can we offer to others and to the world community in terms of environmental values, role models, plans? As religious leaders could we make a difference in the endless climate change debates spearheaded

by politicians and mere environmental scholars, “gurus” “periti” etc? Are our daily pastoral, familial and congregational life styles increasing or reducing the effects of climate change and environmental destruction? What is our “added value” in the quest for a more sustainable and less consumerist philosophy in the contemporary consumer culture nationally and globally?

Acting Personally

Rational beings created with intelligence, (“Rational Animalis”) and will power, we need to critically review our own life-styles. We need to become role models and champions of caring and preserving our own environment, respect human, biological rights of all created beings not only for today, but for hundreds of generations to come. Examples: plant trees, do not burn charcoal, use locally organically grown flowers, do not import.



Acting Communally

Prof. John S. Mbiti puts it, “I am because we are,” we need to go beyond our own personal and/or individualistic parameters. These could include inter-faith, eco-liturgical prayers, retreats, seminars, bonanzas, fiestas, feasts, sports competitions, creation spiritualities (the role of eco-prayers very crucial: Ref. 5 fingers) awards, awareness raising and programmes, arts, poems, songs, caravans, re-afforestation activities, as well as environmental subjects and/or courses from primary, secondary schools up to tertiary (college/university) levels

Acting Communally

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- A faith based institutions need to develop new “AGAPE” (Alternative Globalization Addressing People and Earth) model in fighting for earth’s and climate justice. This must be based on the Great Commandment of Love (Mt. 22:37-37) love of God and love of neighbour, human and non-humans.

Acting Ecclesially and Ecumenically

- Churches have great responsibility to emulate and foster values and virtues. (“Habitus”=habit/character). This

underpins not only the strength of faith-based institutions, but underlines the difference and the “added values” as a whole. Hence, the need for our churches to really become formative “loci” (areas) of fundamental human values and virtues. That is, the transcendental values and motivations for deep change.

- These values and virtues include preservation of life, charity/agape, justice, equity, peace, dignity, partnership, , compassion, true friendship, care, forgiveness, trust, accountability, responsibility, discipline, moderation, transparency, sustainability, quality and foresight and future fitness. (Ref: “He who can lead oneself can lead others too”) if we are imbued and led by such values (individually and ecclesially) then, we can lead others.
- Churches, we need to re-orient our economies to be “God –Centered economies” and not “Mammon-centered”. The later is simply based on cut-throat competition, mere production and consumption regardless of ecological implications. (Cfr. Lk. 6:38),
- “People of faith committed to cherish a living earth: Earth is God’s handiwork, a sacred gift, a seamless cloth, woven from many connecting threads. As children of God, as threads in the cloth alive with African vibrant Spirit, let us rejoice in its beauty, cherish its diversity, nurture and respect all that has life, restore and heal what is broken, struggle for justice and equity for all.
- A Maasai scholar O. Koryongi (1999: 25) strongly attests that the earth provides “grass, other plants and water on which their livestock depend for survival...That on the earth

(land) grow plants which provide them with sacred plants (“Oreteti”) used for rituals medicines. Sacred mountains, hills and other lands...the “endoinyoormorwak” where age groups begin to constitute a vital element of rituals which must be performed regularly....

Acting Nationally for Common Welfare /Wellbeing and National Happiness

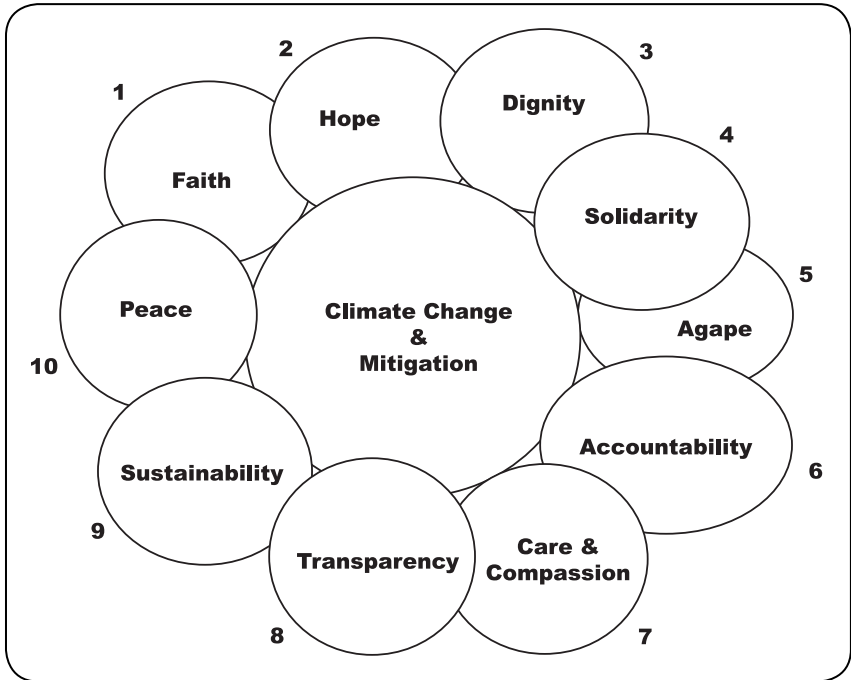
- Rethink on the weaknesses of the current illusive neo-liberal formula in measuring economic development GDP/ GNP. John M. Itty (2008:17-28) ably argues that the GDP raises even when less people are employed, (through capital intensive technology), GDP grows even when the production of guns, bombs, narcotics, liquor, GDP grows even when natural disasters occur (Cfr. Money spent to repair the obsolete WTC in New York, to clean the B.P. Oil spills on the Gulf of Mexico.
- The Tsunami, Katrina. Irene disasters etc.). GDP grows even when the environment is damaged. How? It gives financial gains to the economically powerful against the marginalized and poor at the BOP (Bottom of the Pyramid). Lastly, GDP grows even when the prices of oil increase.
- This is a real true reality and scenario in Tanzania today. What are the politicians telling us in the national budget? What should then be adopted? Gross Happiness Indicator (GHI) caring with quality and dignity to all citizens and the poorest in particular.
- The national and regional levels, the role of our faith-based “Think Tanks” who possess environmental values, passion

and professionalism, need to be reinstated and respected. Again, environmental problems need environmental solutions. Our “Think Tanks” need to engage themselves fully in the issue of climate change. Further, they (“Think Tanks”) need to exercise their competence and foresight in researching and addressing issues concerned with climate change, life, sustainability and the wellbeing of all. They should encourage the national use of alternative energy sources: solar, wind, natural gas, biofuels, energy saving bulbs, building, PC’s etc.

Church Organizations/Institutions as Role Models:-

- The church organizations need to be really innovative. Hence, moving from Ignorance and Illusions to Innovation (Ref. 3I’s). The example of the alternative energy source by the Catholic Diocese of Njombe and the Benedictine Missionaries of Peramiho and Ndanda are commendable. The need to move from “talkshops” to “workshops” from “drinking wine and preaching water” etc.” Additionally, together, the Tanzania Ecumenical Dialogue Council (TEDC) in particular needs to send a clear message for true and deeper change to international Climate Conference such as the Nov-Dec. 2011 Climate Conference in Durban, South Africa.
- The churches our compass of action especially in terms of climate change mitigation needs to particularly revolve around the following ten human and religious value circles.

Ethics of Climate Change and Mitigation



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- The above mentioned 10 values, norms, virtues etc. are intrinsically interwoven and interrelated. They form the key pillars and “ethos” of the faith-based model of climate change mitigation and adaptation different from pure “Scientific” approaches or models. Hence, making both a deep impact and difference. Such faith-based values, virtues and life views are complementary holistic and extremely crucial.

Concluding Remarks

- Climate change poses impending threats to the future of all us, (humans, non-humans and the cosmos of today and future generations.) We feel, see and breathe the effects of climate change hourly and daily.
- Among others, the following concluding remarks and affirmations need to be re-iterated in particular. First, climate change means a “Wake-Up Call” (“Kairos”) to rediscover the sanctity of dignity of life in its entirety. It challenges our churches and religious institutions to avoid the culture of greed and selfishness.
- The fight against greed, lust and envy, which significantly contribute to climate change locally and globally necessarily, needs to start with our own selves. How? By not allowing luxuries become needs and vice versa. Our daily life styles on the churches need to be re-examined.
- Third, in the quest for the so-called “good practice” or even “best practice” a qualitative value-centered approach needs to be adopted. Truly, when a policy is qualitatively wrong, there is no amount of money or time can repair the irreversible loss it might cause (Refer complete extinction of biological species, vanishing ice glaciers on top of Mount Kilimanjaro, dried national parks and forests etc.)
- Kalonzo Musyoka, (June, 2011) put it, the climate change debate should entail full involvement and participation particularly of the poorest of the poor, vulnerable, disadvantaged and marginalized groups. Climate change is per se a human rights issue. With rising temperatures,

locally and globally, human lives particularly in developing poor nations of the world are increasingly being affected by compromised health, financial burdens as well as socio-cultural and existential disruptions.

- Churches and church leaders, the crisis of climate change urges us to rethink anew on the relevance of integral human formation and education to our followers especially children and youth. These are daily losing values of collective responsibility and cohesion in life and earth care tradition life styles and attitudes.
- True character formation through role modeling is extremely important. This approach needs to put more emphasis on the formative and transformative dimensions than simply on the informative aspect. Note that “a preacher may teach by what he tells, he may teach by what he shows, but he may teach most by what he is.” Admittedly, the power of example is holistic!
- The Great Commandment of Love (Mt 22:37-39) to God and neighbor, (humans and non-humans) should be the motivating principle in our collective quest for a credible climate change ethic and ethos in Tanzania today. We should avoid environmental tourism, “environmental politics,” “environmental per diem,” “environmental gymnastics and acrobatics” or more so “environmental show-off culture” for recognition or fame. (Note: two people who rescued a dying person in burning house. The first one was asked what motivated him to take such a risk. He replied, I felt obliged to rescue life as my human responsibility. The second one simply said I just wanted to become famous and get Nobel Prize!!!).

- In short, let us individually and collectively develop true ethos and cultures of compassion, care, empathy, solidarity and earth as well as life caring values in bringing about deep change as a best practice to save our sick rivers, sick air, sick mountains, valleys, forests, depleted resources and the entire environment as a whole. God bless our churches and God bless our environment. God bless Tanzania. And God bless Africa.

Reference

Rev. Dr. Aidan G. Msafiri, is a senior Lecturer and Head of the Department of Philosophy and Ethics at the St. Augustine University (SAUT) Mtwara Center. He holds a first class PhD (Doctorate) in Environmental Ethics from Vienna State University, Austria.

In 2003 he received the first Austrian Prize for Dissertation on the dialogue between economics, ethics and religion. Among other academic publications include:

Towards A Credible Environmental Ethics For Africa: A Tanzanian Perspective, Nairobi, CUEA Publications, 2007,

Globalization of Concerns Vol. I, Dar es Salaam, Dar es Salaam University Press, DUP, 2008,

Inculturing Traditional Medicine In Africa: A Reality or Myths in Africa Tomorrow, Salvatorian Institute of Philosophy and Theology Vol.12/No. I, June, 2010 and Rediscovering Christian and Traditional Values For Moral Formation, Nairobi. CUEA Publications, 2010.

Paper 2: The Challenges of Climate Change for the Future Supply of Safe and Sustainable Energy – The Potential of Renewable Energies in Tanzania

The paper was presented by Finias Magessa, Renewable Energy Expert, Nishati Associates.

Introduction to climate change

- Climate includes patterns of temperature, precipitation, humidity, wind and seasons.
- Climate change affects more than just a change in the weather; it refers to seasonal changes over a long period of time.
- These climate patterns play a fundamental role in shaping natural ecosystems, and the human economies and cultures that depend on them.
- Because so many systems are tied up to climate, a change in climate can affect many related aspects of where and how people, plants and animals live, such as food production, availability and use of water, and health risks.

Main Factors Contributing to Climate Change

- Many factors are contributing to climate change, from fossil fuel use, land use, to burning and clearing of tropical forests.
- The World energy system is responsible for more than half of the anthropogenic greenhouse gas emissions (GHGs)—

mainly carbon dioxide (CO₂) and methane—in the Earth’s atmosphere. Majority of these emissions is due to fossil fuel use, which represents about 75% of total energy use.

- The burning and clearing of tropical forests is a major source of greenhouse gas emissions. It accounts for roughly 16 percent of total global emissions, more than all of the world’s cars, trucks, ships, trains and planes combined. Protecting an acre of rainforest reduces emissions as much as removing 14 cars from the road.
- The increase of these GHGs is causing global warming leading to climate change, which has adverse effects on the environment.

Features Attributed to CC in Tanzania

- Changing weather patterns impacting on food production and species migration.
- Higher temperatures from GHG exposing millions of people to new health risks, especially from “vector-based” diseases like malaria – already mosquitoes are common in Kilimanjaro which used not to be the case before.
- Higher temperatures from GHG causing melting of ice on the peak of mount Kilimanjaro.
- Decrease of water availability by up to 50 percent in some locations as a result of changing weather patterns, rising sea levels and other climate change. Fresh water scarcity risks becoming even more acute in drought-stricken zones.

- Prolonged dry seasons and unpredictable rain seasons.
- The IPCC estimates that the average sea level will rise between 0.18 to 0.59 meters (0.6 and 2 feet) in the next century. Sea level rise is already contaminating freshwater supplies in Thailand, Israel, the Pacific Islands, China and Vietnam.
- About 25 percent of mammals and 12 percent of birds may become extinct over the next few decades, as warmer conditions alter their habitats and human development blocks them from migrating elsewhere.

General Challenges of Climate Change

- Potential for major impact on food security, employment, incomes, and economic growth.
- Increased temperature in tropics and varying rainfall patterns has resulted into reductions in crop yields which can be expected to lead to localized food price hiking.
- Predicted to deepen poverty both directly and indirectly. Direct impacts include the loss of life, livelihoods, assets, infrastructure, etc., from climatic extreme events.
- Malnutrition from the reduction in crop yields would increase the severity of the above mentioned “vector based” diseases feature. With more than 75% of Tanzanians being employed in agriculture, the country remains not exclusive.
- Conflict is increasing over strained ecosystems and local communities are being forced from their homes.

- Has a direct impact on energy availability for communities, households and for economic undertakings. The impact is even higher for countries and communities with limited purchasing power for alternatives.
- Poorer developing countries are most at risk since they are more reliant on agriculture, more vulnerable to coastal and water resource changes, and have less financial, technical and institutional capacity for 'adaptation'.
- Africa is particularly susceptible due to the desertification process, declining run-off from water catchments areas, declining soil fertility, dependence on subsistence agriculture, the prevalence of AIDS and vector-borne diseases, inadequate governance mechanisms, and rapid population growth.

Energy Supply Situation of Tanzania

- Similar to all other East African countries, the majority of Tanzanian population lives on biomass (90%) - against the other lower energy consumption shares (petroleum 8%, electricity 1.2% and others as solar, wind, etc. 0.8%).
- **Biomass:** Resources in Tanzania include woody, biogas, liquid biofuel and biomass co-generation. Administration of the forests in Tanzania includes 38.83 million hectares.
- Total installed grid capacity by end of 2010= 1,051 MW; Hydro= 561 (53%); and thermal (HFO and NG) = 490 MW. (Hydro in 2002 = 98%); Electricity import from Zambia and Uganda ≈ 12 MW.

- **Hydro:** Only 12% of the 4700 MW potential is exploited; Small hydropower – potential \approx 388MW, less than 8MW developed.
- **Natural Gas:** Proven potential of natural gas is about 45 billion cubic metres. Recently more discovered in Mkuranga. Contribution of NG in thermal power generation $>60\%$.
- **Coal:** Reserves are estimated at about 1,200 million tones. 304 million tones are proven and less than 150,000 t/a are being utilized. Plans underway to generate up to 600MW electricity from coal – sites include Kiwira, Mchuchuma and Katewaka.
- **Solar:** Between 2800 -3500 hours of sunshine per year with a global radiation between 4- 7kWh/m²/day. Average solar flux in some parts based on 24 hours can be as high as 300W/m² or more. However only about 1.8 MW is installed.
- **Wind:** Proven wind power generation sites exist including Makambako in Njombe district, Kititimo in Singida and around Mkumbara of Kilimanjaro region. In Makambako and Kititimo wind speeds recorded are in excess of 7m/s.
- **Geothermal:** Estimated potential of up to 600 MWe - identified geothermal sites include Mbeya Area - between Lake Rukwa and Lake Nyasa, Arusha near the Kenyan border (Lake Manyara, Lake Eyasi, Lake Natron, Rufiji Basin, 60 km east of Musoma and areas around Mt. Kilimanjaro and Mt. Meru.

Current situation of energy use and potential future needs for Tanzania

- **Biomass-** More than 90% of primary energy consumption in Tanzania is from biomass. Studies and reports put woody fuel consumption in Tanzania in 2005 at 46.2 million cubic metres of solid round wood.
- Biomass co-generation- The following private companies are generating electricity from biomass either for own use or for selling to TANESCO, Sugar factories (generating 38MW), TANWAT (Wood/Forestry generating 2.5MW), Sao Hill (Wood/Paper generating 1.0MW), Mufindi Paper Mills (generating 15MW). Sugar factories have capacity to generate 200MW from Bagasse.
- **Wind** – use of wind for mechanical and electric power exist but not thorough documented. Plans are underway to generate 100MW in Singida region. More power could be generated.
- **Geothermal-** Not yet in use- studies estimate potential of up to 600 MWe – **could be exploited.**
- **Solar- only** about 1.8MWp are in use and thermal applications not well coordinated and documented –resource is locally available and use could be intensified.

Current situation of energy use and potential future needs for Tanzania

- Petroleum consumption by sector: Transport ≈ 40%; Industry≈ 20%; Households≈20%; Agriculture≈10%; commerce and others ≈10%

- **Electricity** connectivity rate: In urban areas $\approx 30\%$; in rural areas $\approx 2\%$; on average $\approx 14\%$ countrywide.
- **Natural gas**: $\approx 83\%$ for power generation and $\approx 17\%$ thermal application in industries.
- **Coal**: 2MW generated at Kiwira.
- **Oil exploration** being pursued by >11 companies-No oil discoveries so far.
- **Oil import 2008** - 1.8 million tonnes/annum; significant depletion of the foreign currency reserve.

Climate change related challenges to the current and future supply of safe and sustainable energy

- Electricity capacity generation depend 53% on hydro systems which experience prolonged dry seasons and less rainfall.
- Unreliable rainfall adversely impact on the existence of natural forests which are primary source of energy (90%) for majority of poor and rural Tanzanians.
- Unreliable availability of fuel wood, the only affordable energy option for the poor, is a crisis as will result in an increased price increasing further poverty of the poor.
- Increased poverty further deprives the poor capabilities to acquire alternative energy sources.

Potentials of RE in Tanzania

- Abundantly and locally available resources in Tanzania including solar radiation, wind, hydro, biomass and wastes.
- Most RETs and services are proven and are able to provide energy for both domestic and commercial purposes; some local capacity and technical know-how is available.
- There exist inherent carbon credit benefits in most RE projects and activities that could be tapped by Tanzanian developers.
- There is an increased development partners interest and opportunities for LDCs, Tanzania inclusive, to benefit from carbon credits – incentives include standardised baselines, automatic additionality for projects less than 5MW and 20GWh, no registration fee for CDM projects and availability of EB loans to prepare PDD, validation and first verification.
- Hiking price of petroleum products, of which Tanzania is fully dependent on imports.

Cases of some RE pilot projects already well functioning in Tanzania

- **Decentralized RE mini and micro hydro grids** - Mawengi mini hydro 300kW – operated by LUMAMA power users supplying power to 3 villages downstream with a plan of extending to other 4 villages upstream.

- Matembwe micro hydro 90 kW (operating even after TANESCO arrival in the area, competing with TANESCO (cheaper) with no power shed.
- Mavanga mini hydro 145kW and Lugarawa mini hydro 150kW in Njombe.
- **Waste to energy project-** Sisal waste turned to energy (300 KW) at Katani Limited in Tanga (with a plan to increase capacity to more than 1MW)
- Slaughter houses waste to energy – Kisakasaka village in Zanzibar, Nyangao village in Lindi and Ilagala village in Kigoma @ 10kW each.

RE Pilot Projects Cont.

- **Fuel switch from HFO to NG** – already more than 30 industries have switched since 2004 including Tanzania Portland Cement, Kioo Ltd, Tanzania Breweries Ltd, Aluminum Africa Ltd, Karibu Textile Mills, Friendship Textile Mills, Bora Industries, NIDA Textile Mills, Tanzania Cigarettes Co. Ltd, Lakhani Textiles Mill, Mukwamo Industries, Murzar Oil Mills Ltd, and Murzah Soap Industries Ltd.
- **UNDP solar PV Market transformation project in Mwanza region** –where more than 15 solar companies are operational as a result of the solar PV pilot project sustaining the market.
- **Uzi Island Solar battery charging stations for rural electrification** – initially 10 SBCS system installed for every 5 households within 300 metres diameter @120Wp each and batteries @70 -100Ah each.

- KAKUTE solar systems dissemination approach.

Priority Areas and Opportunities for Future Action

- Develop policy, strategy and legal institutional framework for daily planning and implementation of safe energy activities at district and local level.
- Develop and support implementation of programmes and projects on low carbon efficient energy technologies and services in partnership with private sector, DP and other relevant stakeholders at district and local level.
- Plan and support increased use of decentralized modern safe energy systems for powering rural economy, communities, institutions and households.
- Enhance RE knowledge management for RE at all levels.
- Establish robust forest management systems to stop forest fires and unsustainable deforestation of catchments areas.

Priority and opportunities for future action Cont.

- Develop capacity of public and private sector of Tanzania to partner, formulate, raise investment capital, implement and tap inherent carbon credit benefits in clean and safe energy projects.
- Develop mitigation and adaptation strategies/programmes and resources for tapping both national and international resources and opportunities.

- Protect natural ecosystems and tropical forests such as wetlands, peatlands, coral reefs and mangroves – which also reduce the risk of catastrophic impacts like floods and droughts, contributing to food and freshwater security for both rural and urban communities.
- Deliberate support and enhance local R&D on RE systems and commercialization of such developments in collaboration with the private sector and interested stakeholders.

What Should be Done?

- Holy books records the fact that Mankind was created by God and put into Garden Eden to till and keep it.
- Every religious leader is obliged to keep the land and environment as a responsibility from God.
- Alone the government and or with single actors cannot overcome the challenge.
- Concerted efforts are required from all stakeholders including religious organizations.
- Some religious organizations already promote and use decentralized clean energy systems.

Some Practical Proposals

- Religious leaders should deliberately and practically embark on planning, packaging information and promoting use of RETs and services as means keeping the Earth (our Eden).

- Every establishment (education, health and social facilities) of religious organizations should aim at first tapping all locally available clean energy resources before thinking Fossil Fuel.
- Religious leaders should influence the Govt. and its members of congregation on the climatic, economic and social importance of using locally available RETs and services.
- Pilot and demonstrate feasible and viable use of RETs on its establishments and on that of their members of congregations.
- Promote to members of your congregations and the community at large the requirement to take care of environment as a responsibility and TOR from God.

Thank you for Your Attention

Asanteni kwa Kunisikiliza

Appendix 2: List of Participants

S/N	Name	Area of Work	Tel. No.
1.	Hindu Lilla	IRCPT	0713411111
2.	Sr. Clementina Mwashalanila	TEC - Mbeya	0755202789
3.	Fr. James Chaula	TEC- Njombe	0767384379
4.	Rev. Dr. Aidan Msafiri	TEC	0754679090
5.	Rahma Salim	BAKWATA	0655112055
6.	Swaumu Athumani	BAKWATA	0657951414
7.	Becky Fairley	BAHAI	0755833850
8.	Cyrilo Lubinga	CPT	0713764593
9.	Othman Saleh	Mufti's Office Zanzibar	0777471038
10.	Sharif Haji	TAMPRO	0716776226
11.	Siki Magoha	TAMPRO	0717070795
12.	Frank Chuwa	TEC	0762151515
13.	Abdillah Kombo	Ahmadiyya	0767519497
14.	Gilbert	Norwegian Church Aid	0786025454
15.	Thomas Godda	CCT/Trustee	0784602262
16.	Finias Magessa	Energy & Environment	0784816537
17.	Rev. Pauna Sekoro	Buddhist Association	0713451746
18.	Desderia Maita	TWIN	0754434395
19.	Jacqueline Sombe	The African News Paper	0714317111
20.	Jamal Kalunde	Mwananchi News Paper	0713856970
21.	Meena Merly	Ebony Radio	0717593217
22.	Esther Frank	Business week News Paper	0715613470
23.	Doreen Sambu	Wapo Radio	0657691910
24.	Godwin Mongi	Bahai National OFC	0753259259
25.	Abdulrahman Ame		
26.	Fr. Anthony Makunde	IRCPT	0754033351
27.	George Khanga	IRCPT	0713334615
28.	Abdul Mulokozi	IRCPT	0718744874
29.	Erasto Moyo	IRCPT	
30.	Shamim Daudi	IRCPT	0713518002
31.	Asia Hussein	IRCPT	0713645666
32.	Teddy Kimatare	Kind Heart Afrika	
33.	Gallus Marandu	TEC	0754624399

34.	Benedict Shemfumbwa	TEC	0688312148
35.	Elie Chansa	PCT	0713554153
36.	Sistus Mallya	PCT	0754669897
37.	Germanus Kyafula	LHRAGG	0655768346
38.	Latif Amars	FORUM CC	0713660140
39.	Ramadhani Ngogomela	BAKWATA	0717620714
40.	Pascalina Seffu	BAHAI Community	0755261940
41.	David Daud	CPT	0716754191
42.	Zaria Dunia	National Muslim Council	0652553196
43.	Dalphina Rubyema	TEC	0762614701
44.	Nasibu Manyanya	BAKWATA	0755525510
45.	Rev. Chediell Sendoro	CCT	0754304444
46.	Hamza Mtunu	BAKWATA	0782200935
47.	Alli Mose	Ahmadya Jamaat	0717554488
48.	Thomas Godda	CCT	0717013404
49.	Fr. Benedict Shemfumbula	TEC	0688312148
50.	Abdillah Kombo	Ahmadiyya	0767514497
51.	Frank Chuwa		0762151515
52.	Beatrice Kamugisha	Forum CC	0716918623
53.	Ramadhan Ngogomela	BAKWATA	0717620714
54.	Stephen Munga	CCT	0784423968
55.	Fr. Gallus Marandu		
56.	Caroline Joseph		
57.	Stefan Reith	KAS	0688411246
59.	Richard Shaba	KAS	0715596009
60.	Erasto Ndeuka	KAS	07132153174
61.	Kristina Knobeldorff	KAS	0686998951
62.	Judith B. Mndolwa	KAS	0754326482
63.	Gerald Thommes	KAS	0717650879
64.	Adili Kalekezi	TAMPRO	0773334617
65.	Happy Changala	New Habari/rai	0756270622
66.	Paulinus Otilia	Mtanzania	0713666543
67.	Vicent Kasambala	Upendo Radio	0718518660
68.	Consolata Vactor	Radio Maria	0654217459

Climate change is a global crisis which requires global solutions that put the well-being of all people first, especially the most vulnerable. This is reinforced by the reality that it is the poor and vulnerable who are most profoundly affected by the environmental impact of climate change such as droughts, floods, water shortages and rise in sea levels. It has been noted that Tanzania is already experiencing visible effects of climate change, such as floods, prolonged droughts, desertification, rising sea levels, and depletion of rain forests. The available water, which was a God given gift for human beings and animals, is becoming more and more scarce.

Religious leaders have a key role to play, probably more than any other section of society. This is because they have the backing of their followers. Whatever they preach, worshippers will easily believe and act accordingly. They can use the same approach to impart knowledge of mitigating climate change and rescue the nation from occurring disasters such as floods and droughts.



Inter-Religious Council for Peace Tanzania
P.O. Box 76951, Dar es Salaam
Tanzania