



**FORESTS' AND CLIMATE CHANGE**  
**INTEGRATING CLIMATE CHANGE ISSUES INTO NATIONAL FOREST**  
**PROGRAMMES**  
**WORKSHOP REPORT**

**National Workshop on integrating climate change issues into national forest programmes**  
**Dar es Salaam Tanzania: 13 – 15 April 2010**

## Table of contents

<b>Table of contents</b> .....	<b>2</b>
<b>ABBREVIATIONS AND ACRONYMS</b> .....	<b>3</b>
<b>SUMMARY</b> .....	<b>4</b>
<b>1 INTRODUCTION</b> .....	<b>7</b>
<b>2 OBJECTIVES AND PARTICIPANTS OF THE WORKSHOP</b> .....	<b>7</b>
<b>3 PRE-WORKSHOP INFORMATION AND TRAINING DAY</b> .....	<b>8</b>
<b>4 WORKSHOP</b> .....	<b>10</b>
<b>4.1 Official Opening</b> .....	<b>10</b>
<b>4.2 Background report</b> .....	<b>11</b>
<b>4.3 Group work</b> .....	<b>11</b>
<b>5 RESULTS AND RECOMMENDATIONS</b> .....	<b>12</b>
<b>5.1 Mitigation</b> .....	<b>12</b>
5.1.1 Key mitigation issues .....	12
5.1.2 Gaps.....	12
5.1.3 Priority needs.....	12
5.1.4 Responses .....	13
5.1.5 Priority actions .....	14
5.1.6 Conclusions .....	14
5.1.7 Recommendations .....	15
<b>5.2 Adaptation</b> .....	<b>15</b>
5.2.1 Definition.....	15
5.2.2 Key adaptation issues .....	15
5.2.3 Gaps.....	16
5.2.4 Priority needs.....	16
5.2.5 Responses .....	17
5.2.6 Priority actions .....	17
5.2.7 Conclusions .....	18
5.2.8 Recommendations .....	18
<b>6 CLOSING AND FUTURE ACTION</b> .....	<b>19</b>
<b>6.1 Closing</b> .....	<b>19</b>
<b>6.2 Future action</b> .....	<b>19</b>
6.2.1 Status of forest policy and result of workshop taking in revision of NFP .....	19
6.2.2 Dissemination of workshop summary to climate change stakeholders.....	19
<i>Annex 1: Programme of the workshop</i> .....	<b>20</b>
<b>Annex 2: List of Participants</b> .....	<b>23</b>
<b>Annex 3: Terms of Reference for Group Discussions</b> .....	<b>26</b>
<b>Annex 4: Summary of working groups</b> .....	<b>29</b>
<b>Annex 6: Findings of background report</b> .....	<b>39</b>

## **ABBREVIATIONS AND ACRONYMS**

CSOs	Civil Society Organisations
FAO	Food and Agriculture Organisation of the United Nations
FBD	Forestry and Beekeeping Division
LGAs	Local Government Authorities
MAFSC	Ministry of Agriculture, Food Security and Cooperatives
MKUKUTA	Mkakati wa Kukuza Uchumi na Kupunguza Umaskini
MKURABITA	Mkakati wa Kurasimisha na Biashara za Wanyonge
MNRT	Ministry of Natural Resources and Tourism
NAFOBEDA	National Forestry and Beekeeping Database
NAFORMA	National Forest Resources Monitoring and Assessment
NAFRAC	Natural Forest Resources and Agroforestry Centre
NBKP	National Beekeeping Programme
NFBKP	National Forest and Beekeeping Programme
NFP	National Forest Programme
NCCSC	National Climate Change Steering Committee
NGOs	Non Governmental Organisations
PFM	Participatory Forest Management
REDD	Reduced Emissions form Deforestation and forest Degradation
SFM	Sustainable Forest Management
TaTeDo	Tanzania Traditional Energy Development and Environment Organisation
TFS	Tanzania Forest Service
UNFCCC	United Nations Framework Convention on Climate Change
VPO	Vice President's Office
UN	United Nations

## **SUMMARY**

### **BACKGROUND**

The Ministry of Natural Resources and Tourism, Forestry and Beekeeping Division in collaboration with FAO organized a three days workshop on Integrating Climate Change Issues into National Forest Programme. The workshop was held in Dar es Salaam from 13 – 15<sup>th</sup> April 2010, at Dar es Salaam International Conference Centre.

The objectives of the workshop, in the context of a national forest programme process, were to raise awareness and share information on forests and climate change issues, and to get stakeholders' views on policy issues and possible responses.

Participants from the forest and climate change policy community including the FBD, the National Climate Change focal point {Vice President's Office (VPO)- Division of Environment}, Ministries (Agriculture, Food Security and Cooperatives (MAFSC); Livestock Development and Fisheries; Energy and Minerals; Water and Irrigation; Regional Administration and Local Government); NGOs; Private Sector; researchers and academia were invited.

### **MITIGATION OF CLIMATE CHANGE**

The workshop came with a number of issues on mitigation of and adaptation to climate change and reached a number of conclusions and recommendations. The main drivers of deforestation and forest degradation are direct use of forest resources, such as for energy (charcoal and fuelwood) and timber, conversion of forest land into other uses for new settlements and infrastructure development, expansion of agriculture, uncontrolled grazing, weak law enforcement, and inadequate human and financial resources shifting cultivation and fires. Deforestation and forest degradation contribute to climate change.

Measures to mitigate climate change include afforestation, strengthening of agro-forestry, improved forest management and governance - in particular through scaling up PFM, and by more efficient use of wood resources, including as alternative source of energy.

Currently, a policy on forest and climate change that addresses the main issues and drivers of deforestation and forest degradation does not yet exist. This is a gap. However, review of the national forest policy, development of a REDD strategy, and the envisaged process to revise the national forest programme are avenues to address these issues. Other gaps include human capacities, financing, sectoral coordination, as well as data and information.

Priority needs to address the drivers of deforestation and forest degradation include better control and management of the direct uses of forests, such as timber harvesting, charcoal making, harvesting for fuelwood and better planned and regulated conversions of land use. Improvement of governance, in particular through more solid financing strategies and cost-benefit sharing mechanisms, and strengthened law enforcement are equally important.

To benefit from mitigation opportunities, there is to establish and implement land use plans and adhere to the plans, raise awareness, and improve forest management and governance, improve agricultural productivity, livestock keeping, agroforestry, range management, and to increase the efficiency in the use of wood products and wood as source of energy.

The workshop recommended that the priority needs identified be integrated into forest and climate change relevant policies, strategies, and programmes, and in legal and institutional frameworks.

In order to strengthen mitigation efforts in relation to forests, the workshop stressed the need to undertake a number of priority actions such as strengthening human capacity, the data and information bases, improved financing, and coordination mechanisms.

## **RECOMMENDATIONS**

The main recommendations on mitigation of climate change are:

- (i) Relevant institutions should incorporate climate change in their policies, strategies and programmes;
- (ii) The government should allocate adequate funding for forest management activities and increase human capacity;
- (iii) In order to improve forest administration, MNRT should hasten the establishment and operationalisation of TFS;
- (iv) MNRT/FBD and LGAs should put emphasis on strengthening management of existing forest reserves to minimize forest degradation through, staff recruitment and training, provision of facilities to enhance forest management, rational allocation of funds and staff in the forest reserves;
- (v) Strengthen the coordination among the participating institutions in climate change initiatives;

## **ADAPTATION TO CLIMATE CHANGE**

Climate change has impacts on different natural resources dependent people, including forest adjacent communities, rural communities far from forests, and urban communities. These benefit from forests in numerous ways. Consequences include increased food insecurity, poor human and animal health, and more pronounced resource use conflicts.

Similarly, climate change has adverse impacts on forest ecosystems and trees outside forests in Tanzania. It increases risks of decreasing ecosystems and genetic biodiversity, or changes in ecosystem dynamics due to outbreak of pests, diseases or fire, or due to uncontrolled encroachment of or immigration of settlers into forests.

Different efforts have been taken to adapt to climate change so far, including shifting living spaces or land management systems, the introduction of agro-forestry practices or more sustainable agricultural practices. Also, forest policy review has taken climate change adaptation issues better into account. The workshop, however, considered the current situation to be insufficient and inadequate in human capacities, data and information, as well as in financing arrangements. Sectoral coordination amongst sectors and organisation at different levels, in particular amongst the forest, agriculture, livestock, energy, environment and water sectors and organisations is poor.

Standardisation of terms used, better communication and coordination mechanisms both vertically and horizontally by the sectors, improved human capacity and technology, the mapping of vulnerability of communities at all levels, efforts to increase awareness of climate change at all levels, as well as the social and economic empowerment of the rural communities were identified as priority needs to help enhance the resilience of natural resources dependent people affected by climate change.

In order to enhance the resilience of forest ecosystems and trees outside forests affected by climate change impacts, restoration and conservation of genetic diversity, the planting of natural tree species, screening of climate change adaptive species and enhanced research were emphasised.

Knowledge management and communication, strengthened sectoral coordination, human capacity and technology development, restoration and conservation of genetic diversity, conduction of research on priority climate change issues on all forests as well as on trees outside forests, and scaling up of agroforestry were identified as priority adaptation options that should be included as strategic statements in the national forest programme under the institutional framework.

Strengthening human capacity, operational planning and implementation, data information and communication, financing, and coordination mechanisms are priority actions required to be undertaken in order to strengthen adaptation efforts in relation to forests,.

## **RECOMMENDATIONS**

The main recommendations regarding adaptation to climate change are:

- (i) to strengthen National Level coordination of climate issues;
- (ii) to replicate the NCCSC at regional and district levels;
- (iii) to undertake concerted efforts to build adaptive capacities of natural resources dependent communities through market access, financial services and incentive schemes; and
- (iv) to promote sustainable land management practices for improved livelihoods and healthy ecosystems.

## **1 INTRODUCTION**

The impacts of climate change are being felt globally. In Tanzania, the impacts are unfolding at unprecedented and devastating rates. The changes have adverse effects economically, socially and environmentally. This has far reaching implications not only to the livelihoods of Tanzanians but also to the economic and social development of the country. Efforts should therefore be made to ensure that climate change aspects are incorporated in development policies.

The Forestry Department of FAO and the National Forest Programme Facility have initiated a joint effort to assist countries address emerging policy issues related to forests and climate change through integrating climate change considerations into National Forest Programmes.

Against this background, the Ministry of Natural Resources and Tourism (MNRT), Forestry and Beekeeping Division (FBD) in collaboration with FAO organized a three day workshop (13<sup>th</sup> to 15<sup>th</sup> April 2010) on Integrating Climate Change Issues into National Forest Programme.

This is a report of the workshop and the pre-workshop information and training day.

## **2 OBJECTIVES AND PARTICIPANTS OF THE WORKSHOP**

The Ministry of Natural Resources and Tourism, Forestry and Beekeeping Division in collaboration with FAO organized a three days workshop on Integrating Climate Change Issues into National Forest Programme. The workshop was held in Dar es Salaam from 13 – 15<sup>th</sup> April 2010, at Dar es Salaam International Conference Centre.

The objectives of the workshop, in the context of a national forest programme process, were to raise awareness and share information on forests and climate change issues, and to get stakeholders' views on policy issues and possible responses. The programme of the workshop can be found in Annex 1.

Participants from the forest and climate change policy community including the FBD, the National Climate Change focal point {Vice President's Office (VPO)- Division of Environment}, Ministries (Agriculture, Food Security and Cooperatives (MAFSC); Livestock Development and Fisheries; Energy and Minerals; Water and Irrigation; Regional Administration and Local Government); NGOs; Private Sector; researchers and academia were invited. The list of participants is shown in Annex 2.

### **3 PRE-WORKSHOP INFORMATION AND TRAINING DAY**

The objective of the information and training day addressed key issues on forests and climate change and also a briefing on NFP's in general and Tanzania's NFP in particular. The objective of the day was to ensure that everyone had similar level of understanding going into the workshop.

The opening presentation on "Climate Change and Forest brief - Mitigation and Adaptation" was presented by Jesper Tranberg (FAO). The presentation first looked at the definition of mitigation and adaptation and the role of forests in the global carbon cycle. The role of forestry in mitigation was highlighted, including the perspective of forest management options.

In the third presentation Jesper Tranberg (FAO) gave an overview of "Climate Change and Forest - international issues". Here focus was on the political realities, noting that mitigation needs to happen in both industrialized and developing countries, but that financial and technical support would be needed to enable the latter. The outcomes of the Copenhagen meetings of the United Nations Framework Convention on Climate Change (UNFCCC) in December 2009 were highlighted, in particular those related to the forestry sector. Specific mention of forests in the Copenhagen Accord was indicative of the importance attached to reducing emissions from deforestation and forest degradation and other forest mitigation potentials in developing countries (REDD+). Issues still under negotiation in UNFCCC, including on REDD+ and on land use, land use change and forestry (LULUCF) were presented. Key points on how best forestry could respond to the international policy developments were provided. This presentation helped to participants on the general status of negotiations, possible outcomes, agreements and implications thereof.

Michael Chihambakwe (NFP-Facility) explained the concept of National Forest Programmes (NFP). His presentation titled "The Concept of National Forest Programmes" introduced the concept and emphasized that it must be embedded in the country's efforts towards sustainable development (hence mobilizing the contribution of forests and forestry). Mr. Chihambakwe explained that a National Forestry Programme is a country specific process, a multi-stakeholder dialogue and a framework for sustainable forest management (SFM), and further emphasized what it is not. The presentation also provided a guide for the formulation of an NFP, by looking at clustering of NFP principles, the phases and the elements in NFP formulation. The presentation concluded by looking at challenges ahead, highlighting how to put it into practice, long term focus, quality standards and monitoring.

Mr Juma Mgoo, Acting Assistant Director, Forest Development, FBD made a presentation on climate change policy framework in Tanzania. Mr Mgoo said that in 1998 the Government approved a revised National Forest Policy. The policy takes cognisance of macro-economic and other sectoral policies, ranging from environmental conservation to sustainable development of the land based natural resources. The NFP and National Beekeeping Programme (NBKP) were endorsed by the Government in 2001. The two programmes have been merged/aligned and are now called National Forest and Beekeeping Programme (NFBKP). The NFBKP is a strategic planning instrument to implement the National Forest and Beekeeping Policies of 1998 and putting into operation the commitments and obligations derived from international agreements and inter-governmental processes.

Currently, the National Forest Policy is under review and the review process is at final stages of approval. Issues related to climate change and public private partnership for sustainable forest management have been incorporated in the draft policy.

Mr Mgoo said that climate change is seriously impacting on forests and forest ecosystems and therefore environment. He mentioned a number of challenges in addressing climate namely



deforestation and degradation are taking place in both reserved and unreserved forests but more so in the unreserved forests due to inadequate resources to implement active and sustainable forest management, increased trade in forest products including charcoal which has resulted in accelerated tree harvesting to levels above allowable cuts.

Mr Mgoo pointed out the need to have reliable data on existing forest resources and identify areas with high potential and opportunities to expand plantations in the future. Further, Mr Mgoo listed some key issues which need further study namely management of the land and woodland resources for sustainable development, effective involvement of local people in various forest-based activities i.e. tree growing, harvesting, processing, beekeeping and marketing, and a nation wide study is needed to assess the existing baseline carbon stocks in forestry.

Mr Evarist Nashanda, a member of the National REDD Task Force presented a paper on the development of the Tanzania-National REDD Strategy. He said this is being done in a consultative manner (through consultative workshops at national, regional, district and ward/local levels) and so far it has involved the development of National REDD Framework, Literature Review, Study Tours, commissioning of In-depth Studies and selection of REDD Demonstration projects (Pilot projects).

Mr Nashanda said that according to the National framework for REDD, the key issues to be addressed by the National REDD Strategy are establishment of Baselines, Establishment of monitoring system for monitoring, reporting and verification (MRV), Financial Mechanisms and Incentives, Stakeholder engagement and involvement of local communities, Coordination of REDD activities, Market Access /Negotiation, Governance for REDD, Capacity building, Research and Information/Knowledge dissemination & networking. The strategy is expected to be completed by December 2010.

## **4 WORKSHOP**

### **4.1 Official Opening**

The workshop was opened officially on 14<sup>th</sup> April 2010 by the Permanent Secretary of the Ministry of Natural Resources and Tourism, Dr. Ladislaus Komba. In his speech, the Permanent Secretary emphasised on the importance of climate change issues for Tanzania and its forests. Dr Komba said that:

- (i) Climate change is one of the largest challenges Tanzania faces. It is expected to affect all people and all ecosystems, leading to dramatic changes for some of them. Tanzania experienced climate change such as decrease in ice in Mount Kilimanjaro, land slide in Same District and floods in Mpwapwa and Kilosa districts.
- (ii) The strategic significance of the links between forests and climate profoundly change the way forests are seen, how they are used, and how they are to be managed sustainably.

Dr Komba further alluded to the need to address forests and climate change as a strategic issue pro-actively, in policies and practice. He said that:

- (i) Forests play a key role both in mitigating climate change, and in adaptation to climate change – but this often is not well recognized in strategic policy frameworks.
- (ii) Issues related to climate change and forests are embedded in a much wider natural resource and land use context and thus need a broad approach.
- (iii) The timing of this workshop fits well with a new draft forest policy elaborated, a REDD strategy under development, and a revision of the national forest programme about to be started.

Dr Komba hoped that the consultation at this workshop would contribute to sound strategic decisions and policy guidance and made a commitment that the Ministry would implement the recommendations of the workshop.

Lastly, Dr Komba thanked FAO and Finland for supporting forestry development in general and the workshop in particular.

### **Remarks by FAO Country Representative, Dr. Louise Setshwaelo**

In her opening remarks the FAO Country Representative, Dr. Louise Setshwaelo, pointed out that climate change is a very important issue in the forestry sector for Tanzania and that the strategic significance of the links between forests and climate, profoundly change the way forests are seen, how they are used, and how they are to be managed - sustainably.

The Country Representative further emphasised the need to address forest and climate change issues, pro-actively, in policies and practice and pointing out that the issues are often not well recognized in strategic policy frameworks including programmes. Further more she stressed that action to mitigate or adapt to climate change, will only have full impact, if done in coordination with other land uses and sectors and in an integrated and coordinated approach with in the different efforts. She pointed out that the timing of the workshop and seemed to fit well, with a new draft forest policy elaborated, a REDD strategy under development, and a revision of the national forest programme about to be started.

## **4.2 Background report**

As back ground information for the workshop an extensive report was prepared. The report was presented at the workshop and distributed to participants. The report covers impacts of climate change in Tanzania, vulnerability to climate change, mitigation of and adaptation to climate change. Also, the current state of integration of climate change issues into forest policy, legal and institutional frameworks were covered and a assessment of the needs, issues and options given. The key findings and recommendations are presented in Annex 5 and the report is available online.

## **4.3 Group work**

During the workshop, the participants worked in two groups. One group discussed mitigation and the other adaptation. The purpose of the group work was to identify key issues, gaps and priority needs, as well as responses and action needed for the better inclusion of climate change issues (mitigation and adaptation) in national forest policies, and for more integrated and coordinated policy making on forests and climate change issues through national forest programme processes. The Terms of Reference for Group work are shown in Annex 3.

The moderators and reporters of the two working groups were:

- Adaptation
  - Moderator: Dr Aichi Kitalyi
  - Reporter: Ms. Victoria Maeda and Mr. Isaya Mwangwone
  
- Mitigation
  - Moderator: Mr Charles Meshack
  - Reporter: Ms. Kay Kairuki

At the end of each working group session the discussion was summarised and presented in plenary. The results are presented in the following chapter five and the summary of each working group session is available in Annex 4.

## **5 RESULTS AND RECOMMENDATIONS**

The workshop came with a number of issues on mitigation of and adaptation to climate change and reached a number of conclusions and recommendations as follows:

### **5.1 *Mitigation***

#### **5.1.1 Key mitigation issues**

A number of factors were identified to be main drivers of deforestation and forest degradation in Tanzania. These are direct use for resources, such as for energy (charcoal and fuelwood) and timber. Forest land is converted into other uses for new settlements and infrastructure development, or expansion of agriculture. It is degraded as a consequence of uncontrolled grazing or shifting cultivation, and by induced or natural events such as floods, fire, or landslides. One main factor is related to governance such as poor administration or coordination, weak law enforcement, and inadequate human and financial resources, but also to wider socio-cultural aspects, such as prevailing beliefs, or inadequate awareness.

Mitigation measures also provide opportunities in Tanzania. This includes afforestation, strengthening of agro-forestry, by improving forest management and governance - in particular through scaling up PFM, and by more efficient use of wood resources, including as alternative source of energy.

#### **5.1.2 Gaps**

Currently, a policy on forest and climate change that addresses the main issues and drivers of deforestation and forest degradation does not yet exist. However, the processes currently under way to revise the national forest policy, to develop a REDD strategy, and the envisaged process to revise the national forest programme are avenues to address these issues.

The main gaps to be addressed relate to a number of factors, including human capacities, financing, sectoral coordination, as well as data and information. In view of the task ahead, the human capacity is inadequate – both in relation to the number of staff, and levels of knowledge needed. Similarly, the available funding is clearly inadequate compared to the amount of work ahead, and the diversity of tasks to manage. In this regard, the efforts undertaken by the government to establish forest & carbon related funds are noted as a significant development. Despite its importance, coordination amongst sectors is very weak, as is the co-ordination and administration across different levels. The consequence of weak coordination is failure in achieving policy goals and expected outputs. Contributing to this is the fact that essential data and existing information is scattered, outdated, and unreliable. The currently ongoing efforts to undertake a solid forest resource assessment is thus highly important and timely.

#### **5.1.3 Priority needs**

The workshop identified a number of priority needs to address the drivers of deforestation and forest degradation identified. This comprises better control and management of the direct uses of forests, such as timber harvesting, charcoal making, harvesting for fuelwood and better planned and regulated conversions of land use. Equally important is to improve governance, in particular through more solid financing strategies and cost-benefit sharing mechanisms, and strengthened law enforcement. Contingency measures are needed to contain natural and man made disasters, in

particular floods and drought. Last, but not least, social and cultural beliefs and attitudes that run counter to efforts of mitigating climate change need to be addressed.

To benefit from mitigation opportunities, it is required to establish and implement land use plans and adhere to the plans, raise awareness levels and education, to provide incentives to halt people from cutting trees and to protect them, to create income generating activities, and to improve law enforcement. This is part of a wider improvement of forest management and governance, including in its finance, human resources, information, administration, and communication components. Moreover, it is essential to helping to improve agricultural productivity, livestock keeping, agroforestry, range management, and to increase the efficiency in the use of wood products and wood as source of energy.

#### **5.1.4 Responses**

The workshop participants recommended that the priority needs identified be integrated into forest and climate change relevant policies, strategies, and programmes, and be appropriately considered in possible adaptations in legal and institutional frameworks.

With regard to afforestation, the workshop participants recommended to consider its integration in the forest policy and related act, the environmental policy and related act, the REDD strategy, as well as in the national forest programme. The main responsible body, the Forestry and Beekeeping Division of the MNRT, will collaborate with a wide range of actors, in particular with local governments, the private sector, civil society organizations, communities, and other governmental departments.

In order to strengthen mitigation it is essential to prepare land use plans, and adherence to and recognition of such plans in MKURABITA. Land use planning issues fall primarily into the responsibility of the National Land Use Planning Commission, local governments, as well as the Ministry of Land and Urban Settlement. Land being a cross cutting issue, a wide range of relevant ministries need to be involved in establishing better land use.

The workshop stressed the need to improve forest management and governance in terms of strengthening law enforcement, preparation/updating of management plans and adhering to the plans and engagement of other stakeholders such as communities through community based management and joint forest management, an issue to be particularly taken up by the MNRT and FBD. Appropriate attention should be given in the forest policy and act, the national forest programme, the REDD strategy, but also in the wildlife policy and act, in forest management plans and in MKUKUTA. Adequate involvement is required of local governments as implementers of policies, the Ministry of Economic and Finance Planning for allocation of financial resources, and the Public Service Management for development of human resources.

Efficient use of wood resources and provision/availability of alternative sources of energy is one of the priority responses identified in the workshop. Measures include use of energy saving/efficient stoves, reduction of logging and sawmill waste, use of logging and sawmill waste in energy generation, use of properly dried wood and use of preservative treated wood. This should be adequately recognized in the forest policy and related act, the national forest programme, and in the energy policy. While this is a responsibility of the MNRT (FBD), a large number of other bodies need to act, including CSOs such as TaTEDO, local governments, the Ministry of Finance and Economic Affairs (through adjusting taxations), the Ministry of Energy and Minerals, research institutions, and the forest industries.

A further priority response is through education and awareness raising campaigns on importance of forests in general, their role in mitigating of and adapting to climate change and opportunities

provided by measures to address climate change, which should be promoted by MNRT (FBD) in forest policy, the national forest programme, in the REDD strategy, as well as in Sera ya Habari. To be effective, such campaigns, need a range of bodies to be involved, in particular CSOs, the media, academic institutions, the Ministry of responsible for Education, local governments, as well as the Ministry of Information, Sports and Culture.

Finally, agro forestry, agricultural productivity, range management were considered priority areas for response strategies. Adoption of agroforestry is low while agricultural productivity is also low. Livestock keeping is practiced on pastoralist basis. It is essential that agriculture, livestock, water and environmental policies as well as the national Agroforestry Strategy, take appropriate account of climate change issues. To be effective, these strategies need to be taken up consistently in the forest policy, REDD strategy and the national forest programme. Apart from the MNRT (FBD), a range of other Ministries needs to be involved, including those responsible for Agriculture, Water and Irrigation, Livestock and Fisheries. Further relevant bodies include NAFRAC, research institutions and CSOs.

### **5.1.5 Priority actions**

In order to strengthen mitigation efforts in relation to forests, the workshop participants stressed the need to undertake a number of priority actions. These concern first and foremost strengthening human capacity, the data and information bases, financing, and coordination mechanisms.

With regard to human capacities, the workshop recommended improvement of capacity through employment, training and development, in community mobilization, and in the formulation and strengthening of environmental committees. This capacity building is necessary at national (ministerial), local government and village levels.

Data and information need to be strengthened primarily by improving the forest data archive/NAFOBEDA system and by carrying out regular national forest resources assessment. Action on these points is required at national (ministerial), local government and village/project level.

Financing is a key priority action. This comprises actions to allocate adequate funding for forest management through mechanisms such as revolving funding, payment for environmental services schemes, to mobilize more funds, developing a fundraising strategy, the scaling up of conservation funds, and the operationalisation of the Tanzania Forest Fund. This requires action at ministerial, local and village levels.

A fourth priority action area concerns coordination mechanisms. Workshop participants particularly called for harmonizing and streamlining cross cutting policies, programmes, strategies such as gender, wildlife, water, mining, and livestock, as well as to fast track the establishment of the Tanzania Forest Service (TFS). This is mainly to be undertaken at ministerial level.

### **5.1.6 Conclusions**

The main conclusions on mitigation of climate change are:

- (i) There is overdependence on biomass, especially wood based energy and is one of the major causes of deforestation and forest degradation;
- (ii) Climate change issues are not incorporated in some of the forest related policies and strategies;
- (iii) Funding is a major limitation in forest management;

- (iv) Tanzania has not yet submitted its definition of forest to UNFCCC for purposes of carbon trade; and
- (v) There is weak sectoral coordination on climate change related issues

### **5.1.7 Recommendations**

Based on the conclusions, the main recommendations on mitigation of climate change are:

- (vi) FBD/MNRT should build a strong case for convincing the government to subsidize electricity and other alternative sources of energy to reduce the use of wood energy and therefore reduce deforestation and forest degradation;
- (vii) Relevant institutions should incorporate climate change in their policies, strategies and programmes;
- (viii) The government should allocate adequate funding for forest management activities and increase human capacity;
- (ix) In order to improve forest administration, MNRT should hasten the establishment and operationalisation of TFS;
- (x) MNRT/FBD and LGAs should put emphasis on strengthening management of existing forest reserves to minimize forest degradation through, staff recruitment and training, provision of facilities to enhance forest management, rational allocation of funds and staff in the forest reserves;
- (xi) Improve governance at all levels for REDD to be operational and successful;
- (xii) Strengthen the coordination among the participating institutions in climate change initiatives;
- (xiii) Control charcoal production by issuing license to few identified groups or organizations;
- (xiv) Expedite the submission of Tanzania's definition of Forest to UNFCCC; and
- (xv) Environmental education on climate change to be streamlined in all levels of education from primary up to Universities.

## **5.2 Adaptation**

### **5.2.1 Definition**

Adaptation is the adjustments in ecological, social and economic systems in response to climate change.

### **5.2.2 Key adaptation issues**

Climate change has impacts on different natural resources dependent people, including forest adjacent communities, rural communities far from forests, and urban communities. These benefit from forests in numerous ways, including by accessing timber and non-timber forest products, which in turn contribute to food security, herbal medicines, income and employment opportunities, and through other direct and indirect benefits.

Natural resources dependent people face a number of risks that increases their vulnerability to impacts of climate change. This includes adverse change in rainfall patterns, such as heavy rains and floods and droughts which lead into reduced water flows, in seasonal pattern of weather conditions, as well as higher frequencies of landslides and soil erosion. This in turn increases risks of outbreaks of pests and diseases as well as fire incidences, and generally leads to resources degradation and

decreased land productivity. Consequences include increased food insecurity, poor human and animal health, and more pronounced resource use conflicts.

Similarly, climate change has adverse impacts on forest ecosystems and trees outside forests in Tanzania. It increases risks of decreasing ecosystems and genetic biodiversity, or changes in ecosystem dynamics due to outbreak of pests, diseases or fire, or due to uncontrolled encroachment of or immigration of settlers into forests.

### **5.2.3 Gaps**

Different efforts have been taken to adapt to climate change so far, including shifting living spaces or land management systems, the introduction of agro-forestry practices or more sustainable agricultural practices. Also, forest policy review has taken climate change adaptation issues better into account.

The workshop participants felt that current forest and climate change policies and strategies address the main issues and risks of increasing vulnerability of natural resources dependent people in the currently ongoing revisions of policy frameworks. This concerns in particular the new draft forest policy, the current environmental policy, the national REDD framework and the related strategy which is currently under development. Also, national climate change steering and technical committees have been established.

The participants were also of the view that current forest policy and climate change and strategies fully take into account the main risks and possible impacts on forest ecosystems and trees outside forests. It was seen to be covered both through the policies and frameworks stated above, and through ongoing research on climate change as well as through work in the context of international conventions and commitments (e.g. the Millennium Development Goals, or the UN Convention on Desertification).

The participants of the workshop, however, considered the current situation to be insufficient and inadequate in human capacities, data and information, as well as in financing arrangements. Moreover, they noted the poor coordination amongst sectors and organisation at different levels, in particular amongst the forest, agriculture, livestock, energy, environment and water sectors and organisations.

### **5.2.4 Priority needs**

The participants identified a number of priority needs to help enhance the resilience of natural resources dependent people affected by climate change. Apart from standardizing terms used, this encompasses better communication and coordination mechanisms both vertically and horizontally by the sectors, improved human capacity and technology, the mapping of vulnerability of communities at all levels, efforts to increase awareness of climate change at all levels, as well as the social and economic empowerment of the rural communities.

In order to enhance the resilience of forest ecosystems and trees outside forests affected by climate change impacts several aspects were emphasized as priority needs. This comprises the restoration and conservation of genetic diversity, the planting of natural tree species, and enhanced research. Further priority needs identified were the screening of climate change adaptive species, the scaling up of the domestication of the rare/endangered species, and the elaboration of a national species red list map.



### **5.2.5 Responses**

Priority responses should help to enhance the resilience of natural resource dependent people discussed in day 1. A number of priority adaptation options were identified by the participants that should be included as strategic statements in the national forest programme under the institutional framework. The following paragraphs specify the most important priority areas identified:

Knowledge management and communication should be taken up as priority response to climate change in the national forest programme parts related to institutions and human resources, as well as in NGO programmes, by the respective responsible bodies.

Human capacity and technology should be strengthened in disseminating spatial information (GIS laboratories, Biotechnology, Climate Change). This can and should be emphasized by the responsible bodies in the respective national forest programme sections on institutions and human resources, in research and training programmes, as well as NGO programmes.

The participants of the workshop also called for increased efforts in sectoral coordination, e.g. between agriculture, energy, and forest related bodies such as the MNRT and the MAFSC, in particular in relation to farm lands and forest plantations.

The restoration and conservation of genetic diversity is a priority response which is of particular relevance to be integrated into Forest Reserves management plans, Village Land Use plans, Research and training programmes, NGO programmes by the respective responsible bodies.

A further priority response is to conduct research on priority climate change issues on all forests as well as on trees outside forests. This is action to be taken by MNRT, Research and training institutions, NGOs.

The workshop participants also called for scaling up of the agroforestry options by MNRT and the MAFSC as a priority response for adapting to climate change. This includes in particular the domestication of rare and endangered species.

### **5.2.6 Priority actions**

In order to strengthen adaptation efforts in relation to forests, the workshop participants stressed the need to undertake a number of priority actions. These concern first and foremost strengthening human capacity, operational planning and implementation, data information and communication, financing, and coordination mechanisms.

Human capacity should be strengthened in particular through a training programme to build local capacity at all levels as well as through economic empowerment of local communities. Operational planning and implementation should be strengthened through wider stakeholders' participation and coordination (vertical and horizontal) as well as through a national database that incorporates climate change data. Data information and communication should be strengthened by linking it to VPO, through strengthening web-based sharing of information, and by strengthening forest publicity and extension units at national and zonal centers. Adequate financing needs to be ensured through government commitment and related budgetary allocation decisions. Better coordination mechanisms are particularly needed between VPO, Ministerial units, the National Climate Change Steering Committee (NCCSC), the National Climate Change Technical Committee, and the REDD Task Force.

### **5.2.7 Conclusions**

The main conclusions on adaptation to climate change are:

- (i) The NCCSC is not replicated at lower levels;
- (ii) The capacity of natural resources dependent communities for adapting to climate change is low; and
- (iii) Current land management practices are not sustainable and have adverse effects on livelihoods and health of ecosystems

### **5.2.8 Recommendations**

The workshop participants in particular recommended the following regarding adaptation to climate change:

- (v) to strengthen National Level coordination of climate issues;
- (vi) to replicate the NCCSC at regional and district levels;
- (vii) to undertake concerted efforts to build adaptive capacities of natural resources dependent communities through market access, financial services and incentive schemes; and
- (viii) to promote sustainable land management practices for improved livelihoods and healthy ecosystems.

## **6 CLOSING AND FUTURE ACTION**

### **6.1 Closing**

The workshop was closed on 15<sup>th</sup> April 2010 by the FAO representative and the Director of Forestry and Beekeeping Division, Dr F Kilahama.

The FAO representative, Ewald Rametsteiner, thanked the Forestry and Beekeeping Division for a very well arranged workshop and also the stakeholders for their presence and very active participation in the meeting. He emphasised that by involving a broad range of stakeholder, the workshop has succeeded in elaborating quite concrete suggestions for consideration of where and how to integrate climate change into the national forest programme. Finally he congratulated the participants and FBD on their achievements over the three days of the workshop, and wishing best success.

In his closing remarks the Director of Forestry and Beekeeping Division, Dr F Kilahama emphasised on securing forests to sustain them. The forests have national and global importance. He informed participants that however efforts to do so are being undermined by inadequate funding. There are budget cuts in the sector. Thus, the major challenge in the forest sector is funding. He called for the need to make a case for forestry to be one of the priority sectors so that it can be allocated more funds.

He apprised participants that the establishment of TFS and Tanzania Forest Fund has reached advanced stages. These are expected to lead to improvement in forest management through improved service delivery and reliable funding.

The Director mentioned that FBD has launched NAFORMA which is expected to generate data on forests and their value. He emphasised that however the major drive of NAFORMA is on estimating the amount of carbon the forests hold. On REDD, Dr Kilahama said that there are a lot of issues to be sorted out before benefits are realised.

Dr Kilahama said that climate change is here to stay and cooperation and collaboration are needed to tackle its impacts. He thanked FAO and Finland for supporting the workshop. He also thanked workshop participants for their participation and declared the workshop officially closed.

### **6.2 Future action**

#### **6.2.1 Status of forest policy and result of workshop taking in revision of NFP**

Currently, a policy on forest and climate change that addresses the main issues and drivers of deforestation and forest degradation does not yet exist. However, the processes currently under way to revise the national forest policy, to develop a REDD strategy, and the envisaged process to revise the national forest programme are avenues to address these issues.

#### **6.2.2 Dissemination of workshop summary to climate change stakeholders**

The workshop requested FBD to share the outputs of the workshop with the responsible bodies, and invited the bodies addressed by these conclusions and recommendations to take them into account in policies, programmes, that are reviewed, revised or newly developed, and in the adaptation of legal and institutional frameworks.

## Annex 1: Programme of the workshop

National Workshop on integrating climate change issues into national forest programmes; Dar es Salaam Tanzania: 13 – 15 April 2010

### Programme



EMBASSY OF FINLAND

### Workshop on Integrating Climate Change Issues into National Forest Programme , Dar es Salaam International Conference Centre, 13 -15<sup>th</sup> April 2010

#### Day One; 13 April 2010: Pre-workshop information and training day

TIME	SUBJECT	RESPONSIBILITY
<b>OPENING SESSION</b>		
10:30-10:50	<ul style="list-style-type: none"> <li>- Opening and Introduction of Participants</li> <li>- Pre- workshop Introduction</li> <li>- Programme of the day</li> </ul>	All FBD/FAO
<b>TECHNICAL SESSION (sessions include 20 min presentation and 10 min discussion, Chair: ministry)</b>		
10:50-11:20	<b>Climate Change and Forest brief</b> - Mitigation and Adaptation	FAO
11:20-11:50	<b>Reduced Deforestation and Forest Degradation</b> - Global and national	VPO – E REDD Task Force Chair
11:50-12:20	<b>Climate Change and Forest international issues</b> - UNFCCC and international negotiations	FAO
12:20-13:30	<b>Lunch break</b>	
13:30-14:00	<b>What is an nfp?</b>	Facility Coach
14:00-14:30	<b>Forest and Climate Change relevant Policy Framework in Tanzania</b>	ADFD - FBD
14:30-15:00	<b>Existing forest and CC projects</b>	REDD Coordinator
15:00-15:40	<b>Discussion of issues related to climate change, forests and nfp</b>	Chair

TIME	SUBJECT	RESPONSIBILITY
<i>15:40-16:10</i>	<i>Coffee break</i>	
<b>16:10-17:00</b>	<b>Discussion of issues related to climate change, forests and nfp .continues</b> Program and setup of the workshop Ending of pre workshop	Chair  Participants

### Workshop day 1, April 14 2010

TIME	SUBJECT	RESPONSIBILITY
<b>OPENING SESSION</b>		
<b>09:00-09:30</b>	- Registration	All
<b>09:30-10:30</b>	- Welcome Remarks - Introduction of participants - Remarks by FAO  - Official Opening	Director, FBD Participants FAO Country Representative Permanent Secretary - MNRT
<i>10:30-11:00</i>	<i>Coffee break (group photography+interviews)</i>	
<b>TECHNICAL SESSION</b>		
<b>11.00-11.40</b>	Workshop programme, objectives Participants expectations	Chair Participants
<b>11:40-12:30</b>	<b>Integrating climate change issues into national forest programmes</b> - Results of the background report - Discussion on report findings	Consultant
<i>12:30-14:00</i>	<i>Lunch break</i>	
<b>WORKING GROUP SESSION</b>		
<b>14:00-16:00</b>	<b>Working Group Session 1</b> - Group I, Mitigation and NFP - identifying key issues, gaps and priority needs - Group II – Adaptation and NFP – identifying key issues, gaps and priority needs	Moderator I Mr. Charles Meshack Moderator II Dr. Aichi Kitalyi
<i>16:00-16:30</i>	<i>Coffee break</i>	
<b>16:30-17:30</b>	<b>Plenary presentation of results and discussion</b>	Chair/Group Rapporteurs

### Workshop day 2: 15<sup>th</sup> April 2010

TIME	SUBJECT	RESPONSIBILITY
<b>09.00-09.15</b>	<b>Recap of workshop day one</b>	Chair

<b>TIME</b>	<b>SUBJECT</b>	<b>RESPONSIBILITY</b>
<b>9:15-11:00</b>	<b>Working Group Session 2</b> <ul style="list-style-type: none"> <li>- Group I, Mitigation and NFP – Discussion on responses and actions needed</li> <li>- Group II – Adaptation and NFP – Discussion on responses and actions needed</li> </ul>	Moderator I Mr. Charles Meshack Moderator II Dr. Aichi Kitalyi
<i>11:00-11:30</i>	<i>Coffee break</i>	
<b>11:30-12:00</b>	<b>Plenary presentation of results and discussion</b>	Chair/Group Rapporteurs
<i>12:00-13:30</i>	<i>Lunch break</i>	
<b>WAY FORWARD SESSION</b>		
<b>13:30-15:00</b>	<b>Working group session result follow-up</b> <ul style="list-style-type: none"> <li>- Identification of ways to follow up results of the working group sessions (in plenary or groups, as appropriate)</li> </ul>	Chair
<i>15:00-15:30</i>	<i>Coffee break</i>	
<b>15:30-16:30</b>	<b>Conclusions and Recommendations from the workshop</b> <ul style="list-style-type: none"> <li>- Conclusion adopted by the participants</li> </ul>	Chair
<b>CLOSING SESSION</b>		
<b>16:30-17:00</b>	- Closing	Director, FBD

## Annex 2: List of Participants

### National Workshop on integrating climate change issues into national forest programmes; Dar es Salaam Tanzania: 13 – 15 April 2010

#### List of Participants

S/N	FULL NAME	ORGANIZATION	CONTACT ADDRESS
1	STEPHEN MSEMO	Forestry and Beekeeping Division	<a href="mailto:smsemo@mrnt.go.tz">smsemo@mrnt.go.tz</a>
2	S. IDDI	Sokoine University of Agriculture CONSULTANT	<a href="mailto:iddisaid@yahoo.com">iddisaid@yahoo.com</a>
3	MSHAGHULEY M. ISHAKA	Ministry of Agriculture, Food Security and Cooperatives	<a href="mailto:ishimshagu@yahoo.com">ishimshagu@yahoo.com</a>
4	JARED OTIENO	Forestry and Beekeeping Division	<a href="mailto:otieno2uk@gmail.com">otieno2uk@gmail.com</a>
5	ISAYA MNANGWONE	Forestry and Beekeeping Division	<a href="mailto:mnangwone2650@yahoo.com">mnangwone2650@yahoo.com</a>
6	KASSIM H. MADEWEYA	Department of Commercial Crops, Fruits and Forestry (DCCFF), Zanzibar	<a href="mailto:kl-madeweya@yahoo.com">kl-madeweya@yahoo.com</a>
7	RAYMONDI R. KILLENGA	Eastern Arc Mountains Conservation Endowment Fund	<a href="mailto:raykillenga@yahoo.co.uk">raykillenga@yahoo.co.uk</a>
8	HERIEL MSANGA	Tanzania Tree Seed Agency	<a href="mailto:ttsa@morogoro.net">ttsa@morogoro.net</a>
9	MATHEW MPANDA	International Centre for Research in Agroforestry	<a href="mailto:m.mpanda@cgiar.org">m.mpanda@cgiar.org</a>
10	JOSEPH MCHAU	Regional Administrative Secretary - TANGA	<a href="mailto:mchaujj@yahoo.com">mchaujj@yahoo.com</a>
11	SOUD M. JUMAA	Society for Natural resources Conservation and Development (SONARECOD), Zanzibar	<a href="mailto:soudjumaa@yahoo.com">soudjumaa@yahoo.com</a>
12	KAY KAGARUKI	WILDLIFE DIVISION	<a href="mailto:kkagaruki@gmail.com">kkagaruki@gmail.com</a>
13	SULEIMAN SHAZIL	Unguja District Forest Office - ZANZIBAR	<a href="mailto:shazil60@yahoo.com">shazil60@yahoo.com</a>
14	ZAHABU E.	Sokoine University of Agriculture	<a href="mailto:zahabue@yahoo.com">zahabue@yahoo.com</a>
15	SANGITO SUMARI	GREEN RESOURCES	<a href="mailto:sangito2003@yahoo.com">sangito2003@yahoo.com</a>
16	RAHIMA NJAIDI	Muungano wa Jumuiya za Misitua Tanzania (MJUMITA)	<a href="mailto:rnjaidi@gmail.com">rnjaidi@gmail.com</a>

S/N	FULL NAME	ORGANIZATION	CONTACT ADDRESS
17	CHARLES MESHACK	Tanzania Forest Conservation Group	<a href="mailto:cmeshack@tfcg.or.tz">cmeshack@tfcg.or.tz</a>
18	EWALD RANEISTEINER	FAO, Rome	<a href="mailto:ewald.tawel.steines@fao.org">ewald.tawel.steines@fao.org</a>
19	INGE JONCKHEERE	FAO, Rome	<a href="mailto:inge.jonckere@fao.org">inge.jonckere@fao.org</a>
20	MARJANA HYPENEN	EMBASSY OF FINLAND	<a href="mailto:marjaana.hypponen@forminifi">marjaana.hypponen@forminifi</a>
21	JESPER TRANBER	Food and Agriculture Organization of the United Nations (FAO), Rome	<a href="mailto:ttsa@morogoro.net">ttsa@morogoro.net</a>
22	LUKINDO A. MULSARY	District Forest - LUSHOTO	<a href="mailto:lukindo@yahoo.com">lukindo@yahoo.com</a>
23	LAWRENCE MBWAMBO	Tanzania Forestry Research Institute	<a href="mailto:lmbwambo@yahoo.com">lmbwambo@yahoo.com</a>
24	AICHI KITALYI	International Centre for Research in Agroforestry	<a href="mailto:a.kitalyi@cgar.org">a.kitalyi@cgar.org</a>
25	MARY LIWA	Tanzania Women Leaders in Agriculture and Environment (TAWLAE)	<a href="mailto:maryliwa@yahoo.com">maryliwa@yahoo.com</a>
26	VICTORIA MAEDA	Tanzania Tradition Energy Development Organizations (TaTEDO)	<a href="mailto:victoria.maeda@tatedo.org">victoria.maeda@tatedo.org</a>
27	HADIJA RAMADHAN	Forestry and Beekeeping Division	<a href="mailto:hadijakiimu@gmail.com">hadijakiimu@gmail.com</a>
28	FORTUNATE SENYA	Forestry and Beekeeping Division	<a href="mailto:forjan2003@yahoo.com">forjan2003@yahoo.com</a>
29	GLADNESS A. MKAMBA	Forestry and Beekeeping Division	<a href="mailto:gmkamba@yahoo.com">gmkamba@yahoo.com</a>
30	JUMA MGOO	Forestry and Beekeeping Division	<a href="mailto:jmgoo@mnrt.go.tz">jmgoo@mnrt.go.tz</a>
31	WILHELMINA MZAGA	Forestry and Beekeeping Division	<a href="mailto:wmzaga@yahoo.com">wmzaga@yahoo.com</a>
32	ADEODATHER LUPINDU	Ministry of Livestock Development and Fisheries	<a href="mailto:adelupindu@yahoo.com">adelupindu@yahoo.com</a>
33	NEEMA R. KHAMIS	Ministry of Water and Irrigation	<a href="mailto:neema-kh@yahoo.com">neema-kh@yahoo.com</a>
34	MICHAEL CHIKAMBAKWE	FAO - National Forest Programme	<a href="mailto:michael.chihambakwe@fao.org">michael.chihambakwe@fao.org</a>
35	MICHAEL HAONGA	THE GUARDIAN	<a href="mailto:michaelhaonga@yahoo.com">michaelhaonga@yahoo.com</a>
36	JEMA NGWALE	ROYAL DANISH EMBASSY	<a href="mailto:jemngw@um.dk">jemngw@um.dk</a>
37	MERJA MAKELA	EMBASSY OF FINLAND	<a href="mailto:merja.makela@forminifi">merja.makela@forminifi</a>
38	T. SILINGE	Ministry of Energy and	<a href="mailto:tsilige@yahoo.com">tsilige@yahoo.com</a>



<b>S/N</b>	<b>FULL NAME</b>	<b>ORGANIZATION</b>	<b>CONTACT ADDRESS</b>
		Minerals	
39	GRATUN B. NSHEHAMBO	CHANIKA CDM Associates	<a href="mailto:gmshehambo@yahoo.com">gmshehambo@yahoo.com</a>
40	MARIA RUIZ-VILLAR	FAO, Rome	<a href="mailto:maria.ruizvillar@fao.org">maria.ruizvillar@fao.org</a>
41	YASSIN MKWIZU	ROYAL NORWEGIAN EMBASSY	<a href="mailto:Yassin.Bakari.Mkwizu@mfa.no">Yassin.Bakari.Mkwizu@mfa.no</a>

### **Annex 3: Terms of Reference for Group Discussions**

#### **Background**

The role of forests in climate change mitigation and adaptation is now widely recognized. With regard to mitigation, the inclusion of carbon sinks and carbon store functions of forests in national policies is important. A REDD mechanism, the establishment of which is now being discussed in UNFCCC, could potentially provide financial incentives to developing countries to reduce deforestation and forest degradation, expand and restore forest areas, and help implement sustainable forest management. With regard to adaptation, the impacts of climate change on provision of forest benefits are becoming increasingly evident in many parts of the world. Climate change is expected to pose a major challenge for the livelihoods of forest dependent people as well as forest product dependent sectors of the economy. All of these issues have major implications on forest policy and on the sustainable management of forests.

It is important that the forest sector devises ways to integrate mitigation and adaptation challenges and opportunities in national forest policies. National forest programmes have been recognised by the international dialogue on forests as the framework to put international agreement into practice and as the platform for addressing issues related to sustainable forest management, including climate change.

The Forestry Department of FAO and the National Forest Programme Facility have initiated a joint effort to assist countries address emerging policy issues related to forests and climate change through integrating climate change considerations into National Forest Programmes.

Against this background, the Ministry of Natural Resources and Tourism, Forestry and Beekeeping Division in collaboration with Food and Agriculture Organization of the United Nations (FAO) have organized a workshop on Integrating Climate Change Issues into National Forest Programme. The event will be held in Dar es Salaam from 13 – 15<sup>th</sup> April 2010, at Dar es Salaam International Conference Centre.

The objectives of the workshop are to raise awareness among and share information with stakeholders on integration of climate change issues in national forest programmes.

Participants from the forest and climate change policy community including the Forestry and Beekeeping Division, the National climate change focal point (Vice President Office - Environment), Ministries (Agriculture, Livestock, Energy and Mineral, Water and Irrigation, Local Governments), NGOs, Private Sector and researchers and academia have been invited. During workshop days (on 14 and 15<sup>th</sup> April 2010)<sup>3</sup>, the participants will work on two groups.

#### **Scope and Objectives of the Group Work**

One group will discuss on mitigation part and the other on adaptation. The purpose of the group work will be to identify key issues, gaps and priority needs, as well as responses and action needed for the better inclusion of climate change issues (mitigation and adaptation) in national forest policies, and for more integrated and coordinated policy making on forest and climate change issues through national forest programme processes.

The group work will consider the following key questions discerned in the background paper.

## Specific Tasks

Group one will work on Mitigation and group on Adaptation. Basing on the issues raised above each group will discuss and come up with findings and or suggestions that will form a basis for issues to be integrated into Tanzania's policy, legal and institutional frameworks.

### 3.1 KEY QUESTIONS on MITIGATION

#### DAY 1

##### **Q1: Forest and mitigation - Key issues and factors**

- (i) What are the main issues and drivers in deforestation and forest degradation (DD) in Tanzania?
- (ii) What mitigation measures (afforestation, improved forest management) are opportunities in Tanzania?

##### **Q2: Current situation and gaps – mitigation and policy frameworks**

- (i) Do the current forest and climate change policies and strategies fully address the main issues and drivers of deforestation and degradation?
- (ii) Do the current forest and climate change policies and strategies fully take mitigation opportunities (e.g. afforestation, restoration) into account?
- (iii) What is the current situation (and gaps) in human capacities, data and information, financing, and co-ordination amongst sectors and organizations on different levels?

##### **Q3: Priority needs**

- (i) Which options to address drivers in deforestation and forest degradation should have highest priority?
- (ii) What are priority needs, and which mitigation options should have highest priority?

#### DAY 2

##### **Q4: Possible responses: policy/programme; legal framework; institutional framework**

- (i) How should priority mitigation options be best integrated in forest and climate change policies/strategies and programmes; in legal and institutional frameworks?

##### **Q5: Priority actions in implementation**

- (i) What are priority actions in human capacities, operational planning and implementation, data and information, financing, and coordination mechanisms amongst sectors and organizations on different levels?

### 3.2 KEY QUESTIONS on ADAPTATION

#### DAY 1

##### **Q1: Forest and adaptation - Key issues and factors**

- (i) How does climate change impact on vulnerability of natural resource dependent people – and what are the main risks?
- (ii) How does climate change impact on forest ecosystems and trees outside forests – and what are the main risks?

##### **Q2: Current situation and gaps – adaptation and policy frameworks**

- (i) How have the forest and land use sectors adapted to climate change?
- (ii) Do the current forest and climate change policies and strategies fully address the main issues and risks of increasing vulnerability of natural resource dependent people?
- (iii) Do the current forest and climate change policies and strategies fully take into account the main risks and possible impacts on forest ecosystems and trees outside forests?
- (iv) What is the current situation (and gaps) in human capacities, data and information, financing, and co-ordination amongst sectors and organizations on different levels?

### **Q3: Priority needs**

- (i) What are priority needs to help to enhance the resilience of natural resource dependent people affected by climate change impacts?
- (ii) What are priority needs to help to enhance the resilience of forest ecosystems and trees outside forests affected by climate change impacts?

## **DAY 2**

### **Q4: Possible responses: policy/programme; legal framework; institutional framework**

- (i) How should priority adaptation options be best integrated in forest and climate change policies/strategies and programmes; in legal and institutional frameworks?
  - specify goals / responses concretely:
    - What? Who? Where?
  - Consider:
    - policy processes (forest, climate change, agriculture,...) and/or documents
    - Legislation (forest, land use,...)
    - institutional and organizational arrangements
  - Formulate concrete recommendations to be submitted to responsible organisations

### **Q5: Priority actions**

- (i) What are priority actions in human capacities, in operational planning and implementation, in data, information and communication, in financing, and in coordination mechanisms amongst sectors and organizations on different levels?

### **3.3 Plenary Discussion and Way forward**

All participants will sit as a Team Work to discuss the findings or issues from the group work. With the guidance of the Facilitators, Moderators and FBD major findings will be addressed. A report on the major findings and lessons learned from the workshop, including a revision of the preliminary assessment, as necessary will be drafted by the national consultant. This report will contribute to better integration of climate change issues into Tanzania's forest policy, legal and institutional frameworks.

#### **Annex 4: Summary of working groups**

##### **National Workshop on integrating climate change issues into national forest programmes Dar es Salaam Tanzania: 13 – 15 April 2010**

#### **SUMMARY OF GROUP WORK**

##### **Question one: Forest and mitigation-key issues and factors**

##### **Qn I: what are the main issues and drivers of deforestation and forest degradation in Tanzania?**

- Direct use for resources
  - Charcoal
  - Timber
  - Energy
- Conversion of forest land into other uses
  - Settlement
  - Infrastructure-to be stated in the positive
  - Uncontrolled grazing
  - Shifting cultivation
  - Expansion for agriculture
- Governance
  - Poor coordination
  - Poor law enforcement
  - Poor administration
  - Inadequate human and financial resources
- Natural or manmade agents
  - Floods
  - Fire
  - landslides
- Social cultural aspects
  - Beliefs
  - Inadequate awareness
  - Hunting

##### **QII: what mitigation measures are opportunities in Tanzania?**

- (i) Afforestation
- (ii) Better land use plans in place
- (iii) Improved forest management and governance
- (iv) Efficient use of wood resources
- (v) Education awareness raising campaigns
- (vi) Agro-forestry
- (vii) Improved agricultural productivity
- (viii) Alternative sources of energy
- (ix) Provision of incentives to halt people from cutting trees and protecting them
- (x) Income generating activities
- (xi) Improved law enforcement

(xii) **Q2: Current situation and gaps-mitigation and policy framework**

**QI: do the current forest and CC policies and strategies fully address the main issues and drivers of DD?**

- (i) We don't have the CC policy yet. The environment is legal framework which cuts across all sectors. REDD is a new concept so its not mentioned anywhere in any policy or strategy. The current FP and the EP doesn't include the issue of CC.
- (ii) Environmental policy recognizes the role of forestry in CC

**Q II: do current FP and CC policies take mitigation opportunities into account**

- (i) There is a process of developing the REDD strategy and policy is under review which will be an avenue to address these issues.

**QIII: Gap in human capacities, data and information**

- (i) Human capacity: inadequate (present 1700 needed 2600) this doesn't take into account other stakeholders from the village levels upwards including CSOs
- (ii) Financing very little as compared to the amount of work or area of management. The govt is in the process of establishing forest funds & carbon funds, endowment funds supporting eastern arc. (Comment-forest fund has been is already inplace.)
- (iii) Coordination is very weak amongst sectors. Mining sector may issue a permit without informing the forest sector.
- (iv) Organization on different levels-organisation at local level is very difficult hence fail to achieve output
- (v) Data and information is scattered, outdated, unreliable and there is initiative of resource assessment to update the information.

**Q 3: Priority needs**

**Q I: which options to address drivers of DD should have highest priority?**

- (i) Direct uses of forest
- (ii) Conversion of land use
- (iii) Governance
- (iv) Natural and manmade disasters
- (v) Social and cultural beliefs

**Mitigation options**

- (i) Better land use plans
- (ii) Improved forest management and governance (finance, human resources, sufficient data, administration, awareness creation)
- (iii) Efficient use of wood products and alternative sources of energy
- (iv) Improved agriculture, livestock keeping, agroforestry, range management

**Day 2 Group work on Mitigation:**

**Q4: possible responses: policy/program; legal framework; institutional framework**

- (i) How should priority options be best integrated in forest and CC policies/strategies/programs/institutional & legal frameworks

<b>WHAT</b>	<b>WHO</b>	<b>WHERE</b>	<b>REMARKS</b>
Afforestation	FBD	<ul style="list-style-type: none"> <li>• forest policy and Act</li> <li>• environmental policy and Act</li> <li>• REDD strategy</li> <li>• National Forest Program</li> </ul>	Other actors who will collaborate with FBD include; <ul style="list-style-type: none"> <li>• Local governments</li> <li>• Private sector</li> <li>• CSO</li> <li>• Communities</li> <li>• Other government departments</li> </ul>
Better Land use	<ul style="list-style-type: none"> <li>• National land use plan commission</li> <li>• Local government</li> <li>• Ministry of Land and Urban Settlement</li> </ul>	<ul style="list-style-type: none"> <li>• Land and Village act</li> <li>• land Policy</li> <li>• MKURABITA</li> </ul>	Land is a cross cutting issues therefore all relevant ministries will be involved. Prepare and implement land use plans.
Improved forest management and governance	MNRT (FBD)	<ul style="list-style-type: none"> <li>• Forest Act</li> <li>• NFP</li> <li>• REDD strategy</li> <li>• Wildlife policy and Act</li> <li>• MKUKUTA</li> </ul>	<ul style="list-style-type: none"> <li>• Local Governments (implementers)</li> <li>• Ministry of Economic and finance Planning</li> <li>• Civil service commission</li> </ul>
Efficient use of wood resources and alternative sources of energy	<ul style="list-style-type: none"> <li>• FBD,</li> <li>• CSOs (TaTEDO etc)</li> <li>• Local Government</li> <li>• Rural Energy Agency</li> <li>• MoF (taxations)</li> <li>• Ministry of energy and mining</li> <li>• Research institutions</li> <li>• Forest industries</li> </ul>	<ul style="list-style-type: none"> <li>• Forest Act</li> <li>• NFP</li> <li>• Energy policy</li> </ul>	
Education and awareness raising campaigns	<ul style="list-style-type: none"> <li>• FBD</li> <li>• CSOs</li> <li>• Media</li> <li>• Academic institutions</li> <li>• Ministry of Education</li> <li>• local Governments</li> <li>• Ministry of Information, sports and culture</li> </ul>	<ul style="list-style-type: none"> <li>• Forest policy</li> <li>• Sera ya habari</li> <li>• NFP</li> <li>• REDD Strategy</li> </ul>	
Agroforestry, agricultural productivity, range management	<ul style="list-style-type: none"> <li>• FBD</li> <li>• Ministry responsible for agriculture</li> <li>• Ministry of Water and Irrigation</li> <li>• Ministry of Livestock and Fisheries</li> <li>• NAFRAC</li> <li>• Research institutions</li> <li>• CSOs</li> </ul>	<ul style="list-style-type: none"> <li>• Forest policy</li> <li>• NFP</li> <li>• REDD strategy</li> <li>• Agriculture Policy</li> <li>• National Agro forestry strategy</li> <li>• Environmental policy</li> <li>• Livestock policy</li> <li>• Water policy</li> <li>• Rural development policy</li> </ul>	Coordination through National Agroforestry Steering Committee

### Q 5: Priority Actions in implementation

WHAT	ACTION	WHO & WHERE
Human capacities	<ul style="list-style-type: none"> <li>• improving human capacity through employment, training and development</li> <li>• Community mobilization,</li> <li>• formulation and strengthening of forest committees</li> </ul>	<ul style="list-style-type: none"> <li>• At National (ministerial level) Level</li> <li>• Local government</li> <li>• Village level</li> </ul>
Operational planning and implementation		
Data and information	<ul style="list-style-type: none"> <li>• Improve forest data archive/NAFOBEDA system</li> <li>• Carrying out regular national forest resources assessment</li> <li>• Synthesizing existing data (which are scattered)</li> </ul>	<ul style="list-style-type: none"> <li>• At National (ministerial level)</li> <li>• Local government</li> <li>• Village level/project</li> <li>• Forest level</li> </ul>
Financing	<ul style="list-style-type: none"> <li>• Allocation of adequate funding for forest management through mechanisms such as evolving funding, PES, mobilizing more funds, fundraising strategy</li> <li>• Scaling up of conservation funds (ENDOWMENT)</li> <li>• Tanzania Forest Fund</li> </ul>	Ministerial Local Village
Coordination mechanisms	<ul style="list-style-type: none"> <li>• Harmonize and streamline cross cutting policies, programs, strategies such as gender, wildlife, water, mining, livestock,</li> <li>• Fast track TFS</li> </ul>	Ministerial level

#### Concrete recommendations:

1. FBD/MNRT should strongly convince the government to subsidize electricity and other alternative sources of energy to reduce the use of wood energy
2. Relevant institutions should incorporate climate change in their policies, strategies and programs
3. The government should allocate adequate funding for forest management activities and increase human capacity
4. In order to improve forest administration, MNRT should hasten the establishment and operationalisation of TFS
5. MNRT/FBD and LGAs should put emphasis on strengthening management of existing forest reserves to minimize forest degradation through
  - a. Staff recruitment and training
  - b. Provision of facilities to enhance forest management
  - c. Rational allocation of funds and staff in the forest reserves
6. Improve governance at all levels for REDD to be operational and successful
7. Strengthen the coordination among the participating institutions in CC initiatives
8. Control charcoal production by issuing license to few identified groups or organizations.
9. Hasten the submission of Tanzania Forest definition to UNFCCC
10. Environmental education on climate change to be streamlined in all levels of education from primary up to Universities.



11. Support the promotion of sustainable modern technologies (such as biogas, solar energy and improved stoves)

## **POSSIBLE RESPONSES**

### **Q4. Means to best integrate the priority adaptation options in the forest and climate change policies/strategies and programme; in legal and institutional frameworks**

- From the priority needs that help to enhance the resilience of natural resource dependent people discussed in day ;

#### **Priority adaptation options are:**

- **Strategic statement in the nfp under the institutional framework in**
  - (i) Knowledge management, communication
  - (ii) Strengthening human capacity and technology in disseminating spatial information (GIS labs, Biotechnology, Climate Change).
  - (iii) Sectoral Coordination (Agriculture, Energy, Vs Forest)
  - (iv) Restoration and conservation of genetic diversity
  - (v) Conducting research on priority climate change issues
  - (vi) Scaling up of the agroforest options (eg. Domestication of rare and endangered species)

## **ADAPTATION GROUP**

### **1. FOREST AND ADAPTATION KEY ISSUES AND FACTORS**

The Vulnerable Natural Resources dependent people categories:

- (i) Forest Adjacent Communities
- (ii) Rural communities far from forests
- (iii) Urban Communities

**Definition:** Adaptation is the adjustments in ecological, social and economic systems in response to climate change

#### **Resources communities get from the forests**

- (i) Community living adjacent to forests have the possibility of accessing timber and non-timber forest products
- (ii) Food security,
- (iii) water,
- (iv) vegetables for domestic and economic consumption to meet the growing social and cultural values
- (v) Scenic and scientific values,
- (vi) ecotourism development
- (vii) Land conservation,
- (viii) pollination
- (ix) wood carvings,
- (x) handcraft,
- (xi) plant anchorage

## **FOREST ADAPTATION**

**Q1.i) Main Risks/impacts of the climate change on vulnerability of natural resources dependent people**

- (i) Immigration to forests
- (ii) Change in rainfall patterns (Heavy rains and floods)
- (iii) Crops destruction by wildlife
- (iv) Fire incidences
- (v) Resources degradation and food insecurity
- (vi) Poor human and animal health
- (vii) Resource use conflicts
- (viii) Seasonal pattern of weather conditions
- (ix) Reduced water flows
- (x) Landslides and erosion
- (xi) Diseases outbreak

**ii) The Impacts/main risks of climate change on forest ecosystems and ToF**

- (i) Decrease in ecosystems biodiversity
- (ii) Decreased land productivity
- (iii) Outbreak of pests and diseases
- (iv) Fires outbreak results into changes of the ecosystems
- (v) Change of weather patterns
- (vi) Decrease in genetic diversity

**Adaptation and policy framework**

**Q2.i) Main risks/impacts on the forest and land-use sectors adapted to climate change:**

- (i) Shifting from one place to the other
- (ii) Review of forest Policy and Legislation
- (iii) Changes in land management systems
- (iv) Introduction of agro-forestry practices
- (v) Implementation of the Sustainable agriculture

**ii) Current forest and climate change policies and strategies address the main issues and risks of increasing vulnerability of natural resources dependent people:**

- a. Four statements in the draft policy cover the climate change issues
- b. Environmental policy advocates the climate change initiatives
- c. National REDD strategy and framework also address climate change
- d. National climate change steering and technical committees established

**iii) Current forest policy and climate change and strategies fully take into account the main risks and possible impacts on forest ecosystems and TOF:**

- (i) The current Forest Policy which is still on review will address the main issues and risks of vulnerability of natural forests dependent people.
- (ii) Climate Change Policy is not yet prepared though the strategies and framework have been developed
- (iii) The four clear statements in the forest policy addressing climate change
- (iv) Research on climate change
- (v) The joint cooperation with international conventions (eg. MDG, Convention on Desertification)

**iv) Current situation (gap) in human capacities, data information, financing and coordination amongst sectors and organisation on different level:**

- (i) Human capacity is low
- (ii) Inadequate data and information (ecological, forests, carbon, land-use and energy)

- (iii) Poor coordination among the forest, agriculture, livestock, energy, environment and water sectors and organisations
- (iv) Inadequate and poor financing coordination

### Q3. PRIORITY NEEDS

i) Needs that help to enhance the resilience of natural resources dependent people affected by climate change:

- Standardized definitions and terms
- Communication and coordination mechanisms both vertically and horizontally by the sectors
- Improved human capacity and technology
- Mapping of vulnerability community at local to national levels
- Increasing awareness of the climate change to all levels
- Social and economic empowerment of the rural communities

ii) **Priority needs to help to enhance the resilience of forest ecosystems and trees outside forests affected by climate change impacts:**

- Restoration and conservation of genetic diversity
- Screening of climate change adaptive species
- Conducting researches on priority topics
- Scaling up of the domestication of the rare/endangered species
- Prepare a national species red list map
- Emphasize the planting of natural tree planting species

WHAT	WHO	WHERE
Knowledge management and communication	MNRT, NGOs	NFP (institutions and human resources), NGO programmes.
Strengthening human capacity and technology in disseminating spatial information (GIS labs, Biotechnology, Climate Change).	MNRT, Research and training institutions, NGOs	NFP (institutions and human resources), Research and training programmes, NGO programmes
Restoration and conservation of genetic diversity	MNRT, Communities, Research and training institutions, NGOs	Forest Reserves, Village Land, Research and training programmes, NGO programmes
Conducting research on priority climate change issues	MNRT, Research and training institutions, NGOs	All forest and Trees outside forests
Scaling up of the agroforestry options (eg. Domestication of rare and endangered species)	MNRT, MAFSC	Farm lands, Forest plantations
Sectoral Coordination (Agriculture, Energy, Vs Forest)	VPO, Land use based Ministries	VPO

### Q5. Priority Actions

➤ Human capacity

- (i) Training programme to build local capacity at all levels
- (ii) Economic empowerment of local communities

➤ Operational planning and implementation

- (i) Wider stakeholders' participation and coordination (vertical and horizontal)
- (ii) National database incorporates climate change data

- Data information and communication
  - (i) National database incorporation of climate change data linkage to VPO
  - (ii) Strengthening virtual sharing of information (web based)
  - (iii) Strengthen forest publicity and extension units at national and zonal centers
- Financing
  - (i) Government commitment – budget allocation

WHAT	WHO	WHERE
<ul style="list-style-type: none"> <li>➤ Human capacity Training programme to build local capacity at all levels Economic empowerment of local communities</li> </ul>	VPO, MNRT, MFEA, NGOs, Development partners, Financial institutions, Local Govt., Presidents office public sector management	All levels
<ul style="list-style-type: none"> <li>➤ Operational planning and implementation               <ul style="list-style-type: none"> <li>▪ Wider stakeholders' participation and coordination (vertical and horizontal)</li> <li>▪ National database incorporates climate change data</li> </ul> </li> </ul>	VPO, MNRT, Local Govt., NGOs, Development partners, Financial institutions, National bureau of statistics	Operational plans, NBS, Sector Ministries
<ul style="list-style-type: none"> <li>➤ Data information and communication               <ul style="list-style-type: none"> <li>▪ National database incorporation of climate change data linkage to VPO</li> <li>▪ Strengthening virtual sharing of information (web based)</li> <li>▪ Strengthen forest publicity and extension units at national and zonal centers</li> </ul> </li> </ul>	VPO, MNRT, Local Govt., NGOs, Development partners, National bureau of statistics	NBS, Sector Ministries, VPO.
<ul style="list-style-type: none"> <li>➤ Financing Government commitment – budget allocation</li> </ul>	VPO, MNRT, MFEA, VPO, Local Govt., Development partners	Budget
<ul style="list-style-type: none"> <li>➤ Strengthening of Coordination mechanism Replicate NCCSC, National Climate Change, Technical Committee and REDD taskforce at lower levels</li> </ul>	-VPO - Ministerial Units - Regional and District authorities	National level Sectoral Ministries Local Govt.

## **RECOMMENDATIONS**

- 1.Strengthen National Level coordination of climate issues
- 2.NCCSC should be replicated at regional and district levels
- 3.Concerted efforts build adaptive capacities of Natural resources dependent communities through market access, financial services and incentive schemes
- 4.Promotion of sustainable land management practices for improved livelihoods and health ecosystems

## **Annex 6: Findings of background report**

### FORESTS AND CLIMATE CHANGE INTEGRATING CLIMATE CHANGE ISSUES INTO NATIONAL FOREST PROGRAMMES BACKGROUND PAPER FOR THE NATIONAL WORKSHOP IN TANZANIA

#### SUMMARY AND ISSUES FOR CONSIDERATION

##### **Key observations**

- (i) Population censuses and surveys show that Tanzania has one of the fastest growing populations in the world. Rapid population places huge pressure on forests
- (ii) Forest resources contribute significantly to rural incomes
- (iii) There is overdependence on woodfuel for energy. It accounts for more than 90 % of energy use in the country. This also places huge pressure on forests.
- (iv) Deforestation was estimated at 412,000 ha per annum between 1990 and 2005 (FAO 2009).
- (v) Tanzania considers REDD to be a viable option that can provide opportunities for the country to meet its obligations of managing her forests and woodlands on a sustainable basis and therefore contribute to carbon emission reductions and at the same time respond to poverty reduction initiatives accordingly. The government is therefore envisaging to participate in the future REDD policy and in its development. Already a process to develop a National Strategy and Action Plan for REDD has been initiated. To benefit from REDD, drivers of deforestation must be addressed.
- (vi) Climate change is one of the biggest global problems posing challenges to sustainable livelihoods and economic development, particularly for developing countries like Tanzania. The adverse impacts of climate change on environment, human health, food security, human settlements, economic activities, natural resources and physical infrastructure are already noticeable in Tanzania.

##### **Key questions**

- (iii) What are the main risks from climate change to the forest sector?
- (iv) Have climate change risks been taken into account in the national forest policy and national forest programme?
- (v) How can the risks be mitigated?
- (vi) Which mitigation option has highest priority?
- (vii) Are forest mitigation options currently incorporated in policies and national forest programme?
- (viii) Is there any reference to climate change adaptation in the national forest policy and national forest programme? How has the sector adapted to climate change?
- (ix) To what extent have programmes and plans been implemented?
- (x) Is there adequate capacity financially and human resources for effective implementation of the national forest programme?
- (xi) What key policy and legislative changes are required to promote adaptation of climate in the context of the national forest policy and national forest programme?
- (xii) Are the objectives of the national forest policy and national forest programme at risk of being undermined by climate change impacts? Did any climatic event or trend affect the attainment of the national forest policy and national forest programme objectives?
- (xiii) Is there any risk that implementation of the national forest policy and national forest programme may lead to increased vulnerability of the affected natural and human systems?
- (xiv) How can the national forest policy and national forest programme help to enhance the resilience of people affected by climate change impacts?

- (xv) Does the current forest policy ensure that the country have sufficient data on forests to be able to report on forest carbon stocks and stock changes?
- (xvi) Is there sufficient awareness among decision makers and stakeholders on climate change, its impacts, and appropriate adaptation responses? How can relevant information be communicated to decision makers?
- (xvii) Are the institutional frameworks and coordination mechanisms adequate to address the new challenges and opportunities posed by climate change on forests?

### **Future needs**

- (i) Financial resources to facilitate sustainable forest management and capacity and focus on engaging with international funds that supports mitigation and adaptation action.
- (ii) Capacity building cross sectoral collaboration among government, civil and non-governmental institutions.
- (iii) supporting implementation of relevant programme components, e.g. Biodiversity and Ecosystem conservation component
- (iv) Harmonizing the National Land Act and Village Land Act
- (v) Analysing factors limiting tenure security
- (vi) Research on Forestry and Biodiversity: effects of climate change to biodiversity; better forest management practices; development of country specific methodologies for assessing the impacts of climate change; development of plant species adaptable to climate change; and the demonstration of feasible alternative uses of forest and forest products.