

# CLIMATE INVESTMENT FUNDS

PPCR/SC.5/3  
March 3, 2010

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Meeting of the PPCR Sub-Committee  
Manila, Philippines  
March 16, 2010

**ZAMBIA: PROPOSAL FOR PHASE 1 FUNDING**

### **Proposed Sub-Committee Decision**

The PPCR Sub-Committee reviewed the proposal *Zambia: proposal for phase 1 funding* (document PPCR/SC.5/3) and endorses the proposal as a basis for undertaking activities for the preparation of a Strategic Pilot Program for Climate Resilience.

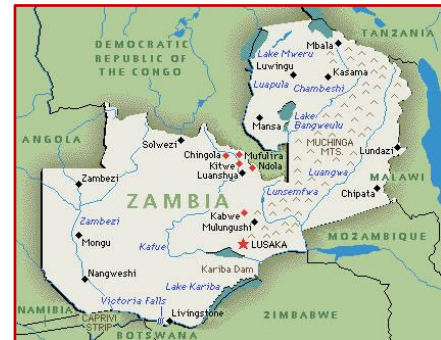
The Sub-Committee also approves USD 1.5 million in financing to support the preparation of Zambia's Strategic Pilot Program. The Sub-Committee invites the African Development Bank and the World Bank Group to work with Zambia, in consultation with other development partners, in the preparation of the Zambia Strategic Pilot Program for Climate Resilience.

**Preparation of a Strategic Program for Climate Resilience (SPCR)  
Proposal for Phase 1 funding from the PPCR**

**A. Background**

**Country Context**

1. **Despite rapid urbanization, 60 percent of Zambia’s population (12.6 million) is rural.** GNI per capita was US\$950/year in 2008 and poverty rates remained at 64 percent<sup>1</sup>, especially amongst small-scale farmers, female-headed households (60 percent of small-scale farmers) and elders. Some 47 percent of the population continues to lack access to safe drinking water.



2. **Zambia’s vulnerability to climate change is due to the fact that a significant proportion of its population and economy depend on climate-sensitive sectors such as agriculture and natural resources.** Out of a total labor force of 5 million, some 70 percent are engaged in agriculture, and the sector contributed to 21 percent of GDP growth in 2008. Water and energy, infrastructure, health and food security – all strategic sectors for national development goals – are also climate sensitive. Given that 12 percent of the land (750,000 km<sup>2</sup>) is suitable for agriculture and another 21 percent suitable for livestock grazing<sup>2</sup>, this vulnerability is likely to continue in the future unless adaptation policies are adopted. At the same time, the communities’ traditional ability to adapt to climate change has been hindered by progressive degradation of land and watersheds, and relatively weak integrated planning.
3. **Zambia is already suffering from climate change and variability.** From 1971-2005, it saw a 58 mm decline in historical rainfall (6 percent) relative to 1940-1970 (Fig. 7). The South-Western region was the most severely affected. Rainfall seasons in southern Zambia have become critically short<sup>3</sup>. Mean temperatures have been increasing by 0.6°C per decade since 1970 (Figs.5-6). At the same time, Zambia is experiencing more frequent and intense droughts and dry spells, and more recently floods, with serious consequences for livelihoods and infrastructure. Since 2000, Zambia has experienced nearly annual episodes of droughts and floods (Table 1), with the 2004/05 events affecting over 12 percent of the population.
4. **These trends are expected to intensify in the future.** Projected temperatures are expected to increase by at least 2.0°C by 2070. Future rainfall projections require further studies: simulations under one global circulation model (HADCM3) indicate a possible increase in average rainfall. Consistent with global projections, climate variability (intensity of droughts

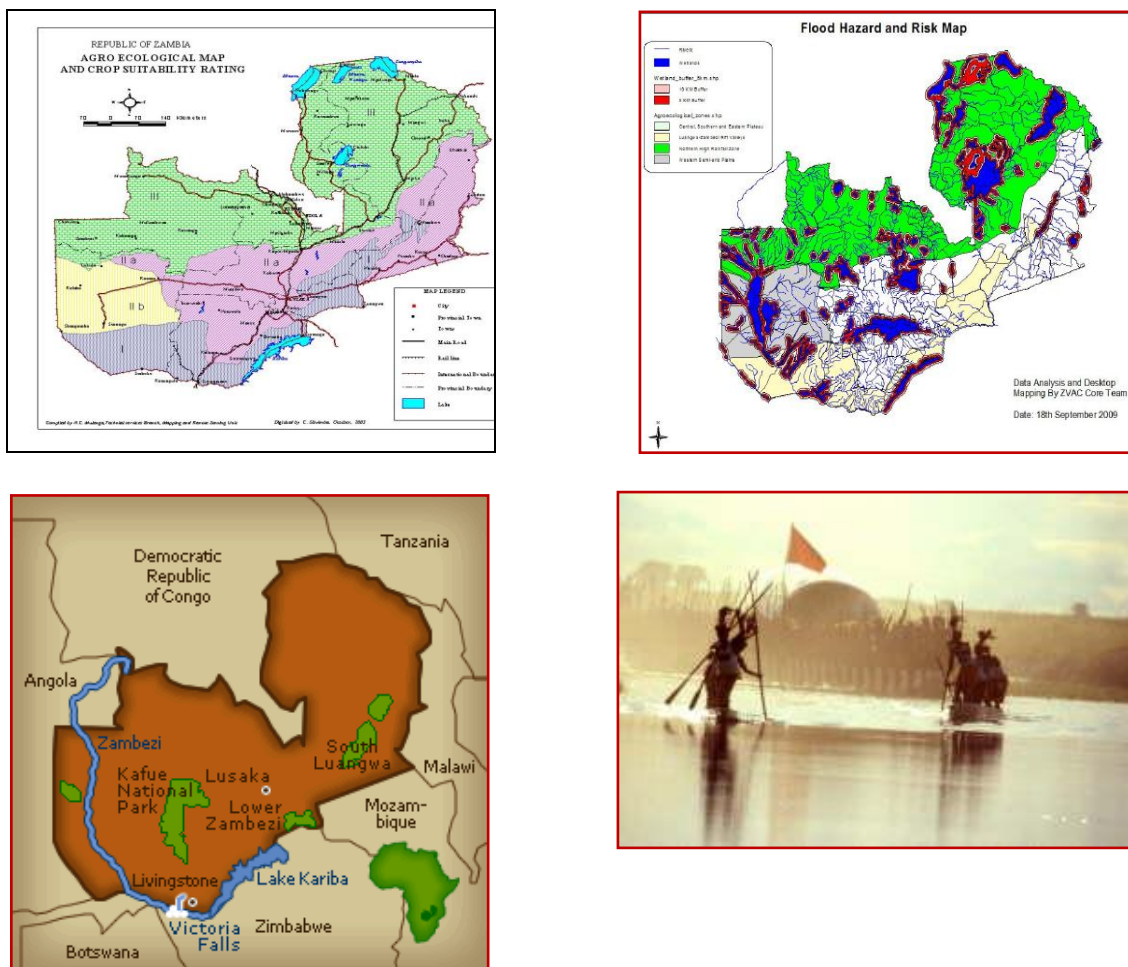
<sup>1</sup> Most recent available data (2008 and 2006). Sources: World Bank and Zambia’s Fifth National Development Plan.

<sup>2</sup> Sources: CEEZ and Mwangala (2009) “Country Scoping Note for Pilot Program Note on Climate Resilience in Zambia”; MoTENR (2007) “Formulation of the National Adaptation Programme of Action on Climate Change” and Jain, Suman (2007) “An Empirical Economic Assessment of Impacts of Climate Change on Agriculture in Zambia” World Bank Policy Research Working Paper 4291.

<sup>3</sup> Source: Tadross, M. et al (2010). Growing-season rainfall and scenarios of future change in southeast Africa: implications for cultivating maize. Climate Research. DOI: 10: 3354/cr00821.

and floods) is expected to increase in the future. Over the past three decades, floods and droughts have already cost Zambia an estimated US\$13.8 billion, or a loss of economic growth equivalent to 0.4 percent annually. In the absence of adaptation, rainfall variability alone could keep an additional 300,000 more Zambians below the poverty line and cost Zambia US\$4.3 billion in lost GDP over the next decade, reducing annual GDP growth by 0.9 percentage points.<sup>4</sup>

5. **Agro-ecological region I remains the most vulnerable zone of Zambia, but floodplains are at risk too.** It covers the eastern and southern rift valley areas and the southern part of the Western and Southern Provinces. It has the warmest and driest climatic conditions (less than 800 mm of rainfall per year) with highly variable rainfall and high erosion rates. Since the mid-2000s, however, floods have also affected the major river basins, the Northwestern, Northern, Western Provinces and southern part of Zambia (Figure 3).



**Figure 1 (clockwise):** Agro-Ecological regions of Zambia. Region I (grey) remains the most vulnerable, particularly to droughts.  
**Figure 2:** Risk of flood hazards for 2009/2010.  
**Figure 3:** Kuomboka traditional ceremony in the Zambezi at the end of the rainy season. It marks the movement of the King of the Lozi people from lower to higher grounds on the Barotse floodplain.  
**Figure 4:** Given that social, economic and watershed boundaries may need to be treated as a unit, priority areas within the Zambezi River Basin (to be further identified according to pre-agreed criteria) are expected to be targeted for pilot investments during Phase II of the PPCR, complementing funding of other donors in other highly vulnerable areas.  
**Sources:** National Adaptation Plan of Action: DDMU: 2009/2010 National Contingency Plan; [www.lusakatimes.com](http://www.lusakatimes.com);

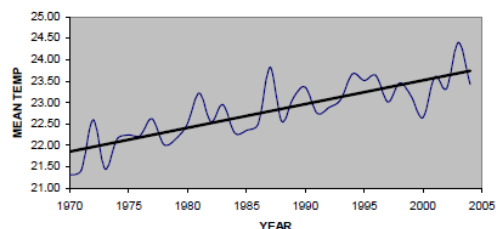
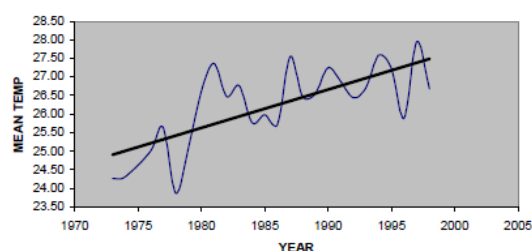
<sup>4</sup> World Bank 2009. Managing Zambia's Water for Sustainable Growth and Poverty Reduction. A Country Water Assistance Strategy for Zambia. June 2009 and background papers. The analysis used 12 Global Circulation Models.

**6. Fortunately, Zambia is making efforts to adapt. It must be assisted in these efforts.**

With the assistance of its development partners, Zambia is committed to strengthen its resilience against climate change, and use any opportunities that it may present. The Pilot Program for Climate Resilience will be integrated into the investment sources that are assisting in the emerging and growing national adaptation efforts.

## Climate Change Diagnosis

7. **Zambia has completed an analysis of historical climate change trends.** The Zambia Meteorological Department keeps all national climate records for 38 stations and 8 agro-meteorological stations. As an input to the NAPA, the Centre for Energy, Environment and Engineering of Zambia analyzed temperature trends over 35 years (1970-2005) for 29 stations, precipitation trends over 30 years (1970-2000), runoff data (1970-2000) and historical water abstractions in the Zambezi river basin. This analysis included indexes of climate variability and spatial resolution for all three agro-ecological regions<sup>5</sup>. Some gaps remain, such as collection of solar radiation data, adjustment of climate variability indexes, and spatial mapping.

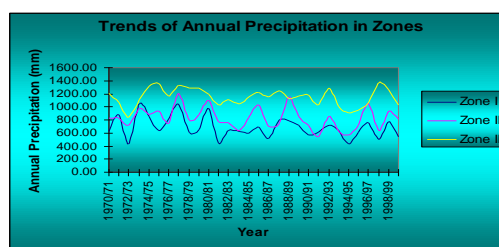


**Figures 5-7 (Clockwise):**

Temperature trends during November-December in Agro-Ecological Zone I (1970-2005); and in Zone III. Source: Jain (2007)  
Precipitation Trends in Zones I-III (1970-2000). Source: NAPA.

**Table 1 (below).** Incidence of Reported Drought and Flood Disasters in Zambia. Droughts tend to be under-reported.

Sources: Jain (2007); NAPA (2007)



Year	Disaster	Killed	Total affected
1978	Flood	11	30,900
1981	Drought		0
1983	Drought		0
1989	Flood		800,000
1990	Drought		1,700,000
1995	Drought		1,273,204
1998	Flood		1,300,000
2000	Flood		12,000
2001	Flood	5	617,900
2003	Flood		10,000
2003	Flood	4	1,000
2004	Flood	2	196,398
2005	Flood		4,000
2005	Drought		1,200,000
2007	Flood	4	1,400,000
2007	Flood		118,755
2007	Flood	1	34,776
2008	Flood	4	15,000

Created on: Oct-22-2009. - Data version: v12.07

Source: "EM-DAT: The OFDA/CRED International Disaster Database  
www.emdat.be - Université Catholique de Louvain - Brussels - Belgium

8. **While the historical climate change trends are clear, there are still gaps in future climate change scenarios.** The Centre for Energy, Environment and Engineering and the University of Zambia (Mathematics Department) have applied Global Circulation Models<sup>6</sup> to rainfall and temperature scenarios for the years 2010 to 2070, for the three main agro-ecological zones, the Zambezi river basin, and three vulnerable sites targeted by IUCN (Sesheke, Mwanabombwe, and Kapiri Mposhi). While the models agree that Zambia will experience higher temperatures in the future, there needs to be further application and harmonization of multi-model downscaled scenarios such as applied for the development of the Water Resources Strategy and the Kafue Gorge Lower Hydroelectric

<sup>5</sup> The indexes used were rainfall trends; rainfall categorization; ten-year seasonal rainfall average; ten-year rainfall decadal analysis; shifts in seasonal precipitation; temperature trend; temperature for coldest and hottest month; temperature anomalies for maximum and minimum and urban heat island effects on surface temperatures.

<sup>6</sup> CCCMA, CSIRO, HADCM3.

investment to confirm the direction of likely future rainfall changes.<sup>7</sup>

9. **The early warning system remains a major weakness.** In both the NAPA and the PPCR workshop, national stakeholders identified the early warning system as the number one priority for adaptation efforts. Key weaknesses include (a) insufficient capacity (particularly at the Meteorology Department) to meet growing demand for specialized services such as hazard mapping, downscaling impact modeling and satellite remote sensing; (b) the fact that national rainfall data are not digitized, (potential for unbiasing satellite rainfall estimates); (c) lack of hazard and risk mapping; and (d) strengthening of weather station and information networking.
10. Sectoral impact analyses have been comprehensive, although the cause-effect with climate change has not always been clear and further economic analysis is needed. As part of the NAPA, several academic institutions and NGOs carried out sector vulnerability assessments to correlate precipitation changes with key crops (maize, sorghum, sunflower), livestock (cattle, sheep, goats and pigs), fisheries (in the main flood plain fisheries areas), and malaria. The Centre for Energy, Environment and Engineering also applied a water balance model to predict reservoir storage capacity and hydropower potential for the Zambezi River Basin. In general, these analyses pointed to a significant and negative climate change effect (see Fig. 8), except for cattle, where the correlation was not immediately clear. There is a need, however, to strengthen regression (cause-effect) and economic analysis such as done by Jain (2009) for traditional crops, the WorldFish Center (Allison et al 2009) for fisheries, and IFPRI for hydro-crops using dynamic general equilibrium models (Turlow, Zhu and Diao, 2009). Subject to funding, the use of satellite remote sensing could also be integrated further into sectoral impact assessments.
11. **Vulnerability baseline and participatory assessments are on-going.** Several institutions<sup>8</sup> carried out vulnerability and adaptation (V&A) assessments, particularly in the Zambezi River Basin and on pilot project areas on Region I. Participatory vulnerability assessments were completed on Eastern and Southern Provinces using focused group discussions, household interviews, and expert opinion. During these consultations, farmers identified general reductions in the length of the growing season, an increase in frequency of droughts, earlier start of rains, and proposed local adaptation strategies. There have been also project-specific efforts to add rain gauges to specific catchments in the Zambezi and in the Southern Province, but they tend to be project specific and not add to a national, harmonized, long-term database. More recently, the Disaster Management and Mitigation Unit has sought to coordinate the collection of a national Comprehensive Vulnerability Assessment and Analysis baseline on nine sectors (health and nutrition, environment, agriculture, education, water and sanitation, social protection, infrastructure, energy, and HIV/AIDS). Subject to funding, the baseline is expected to be completed by January 2010, thus feeding into the process of the Sixth National Development Plan.

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<sup>7</sup> See Reference under footnote 4.

<sup>8</sup> CEEZ, IUCN, Zambia Agricultural and Research Institute, Copperbelt University, UNZA, Ministry of Agriculture and Cooperatives, Ministry of Energy and Water Development, Zambia Farmers' Union, Zambia Wildlife Authority, Ministry of Tourism, Environment and Natural Resources, and its Forestry Department, amongst others.

**12. Even though the analysis has been solid, decision makers and the general public seem poorly informed about climate change impacts and adaptation strategies.** PPCR stakeholders stressed the need to inform policy makers in key sectors, the private sector, community leaders, the media and legislators with simple messages, possibly modeled on the clarity of the HIV/AIDS campaign.

### **Institutional and Strategic Context**

**13. Reaching National Vision 2030 strategic goals will require climate-proofing key sectors, particularly agriculture, infrastructure, energy, environment and natural resources.** The primary concern of Government of Zambia is to protect its people, infrastructure and the economy. Under the Fifth National Development Plan (2006-2010), a first attempt was made to mainstream environment and climate change into the planning process. This approach was not yet comprehensive as only the agriculture and energy sectors were covered under climate change adaptation. Under the Medium Term Expenditure Framework and 2010 Budget, key sectors like Agriculture, Forestry, Fisheries and Environment were found to dedicate less than 25 percent of their budget to programs considered to be climate resilient. For some sectors, the proportion was less than 5 percent<sup>9</sup>.

**14. In recent times, policy makers and development partners are increasingly recognizing that adaptation to climate change is a major challenge that needs to be addressed so national development goals can be achieved.** Thus, adaptation to climate change is starting to be seen as part of a “smart growth” strategy, rather than an alternative or obstacle to growth. Under the Environment and Natural Resources Management and Mainstreaming Programme, efforts are underway to mainstream environment (including climate change) into critical strategic and policy documents, and start the process of developing a climate change strategy covering both adaptation and mitigation. The forestry policy and legal framework is also being revised to systematically incorporate climate change issues. On the Disaster Risk Management side, the collection of baseline vulnerability data is expected to feed into the mainstreaming of the Sixth National Development Plan. The Climate Change Facilitation Unit, Civil Society Organizations and the UK Government are also sponsoring awareness campaigns and advocacy work targeting the media, parliamentarians, farmers and schools. The PPCR should build on and seek to harmonize these efforts programmatically to reduce duplication and optimize the use of national capacity.

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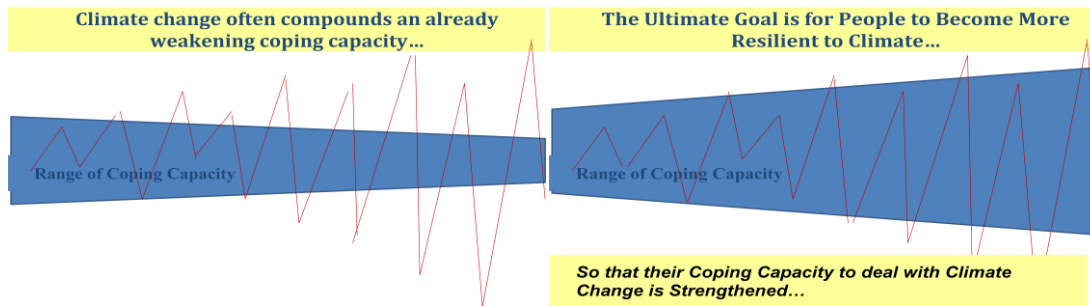
<sup>9</sup> Zambia Civil Society Climate Change Network’s Response to the Draft 2010-2012 Medium Term Expenditure Framework and 2010 Budget (Green Paper). Undated.



**Figure 8:** Vision 2030 Strategic Goals, Key Climate Risks and Adaptation Opportunities

Sector	2030 Vision Strategic Goals	Risks	Adaptation Examples
Agriculture	Efficient competitive, sustainable, and export-led agriculture sector that assumes food security and increased income by 2030	Reduced surface and ground water resources due to increased incidence of droughts	Agro-Forestry Climate-resistant varieties or crops
Infrastructure	Well developed and maintained socio-economic infrastructure by 2030	Excessive rainfall impacts on road network and air transport. Increased temperature impact on industrial processes	Strengthened O&M Review safety standards Risk mapping
Energy	Universal access to clean, reliable and affordable energy at the lowest total economic, financial, social and environmental cost, consistent with national development goals by 2030	Reduced hydro-power generation and/or flooding of energy infrastructure	Energy conservation Water management
Environment and Natural Resources	Productive environment and well conserved natural resources for sustainable socio-economic development by 2030	Reduced growth rates and shifts in species composition and size of forest cover due to climate change	Sustainable natural resource management

Figure 9: Adaptation as a Strengthening of Coping Ability



**15. Climate change has traditionally been part of the environmental mandate in Zambia.**

The Ministry of Tourism, Environment and Natural Resources has had the historical mandate for climate change adaptation and mitigation in Zambia. The Ministry chairs the Environmental Advisory Group, and manages the multi-donor Environment and Natural Resources Management and Mainstreaming Programme. The programme funds both environmental mainstreaming as well as national Environmental Fund. UNDP and Norway also fund a Climate Change Facilitation Unit, charged with developing a strategy, policy and legal framework on climate change<sup>10</sup>. Some sectoral Ministries (e.g. Agriculture) have established climate change focal points. At the deconcentrated district level, the focus has been primarily on forestry (mitigation) activities.

**16. Disaster management institutions are increasingly shifting towards risk reduction.**

Under the Vice President's Office, the Disaster Management and Mitigation Unit manages disasters, and coordinates multi-sectoral risk reduction information through the multi-sectoral Disaster Management Consultative Forum (a national platform) and its technical committee, the Zambia Vulnerability Assessment Committee. The Committee has started collecting vulnerability and needs assessment in nine sectors. Ministerial Disaster Risk Reduction focal persons have been appointed in 14 Ministries. The national platform is replicated at the provincial and district levels, as well as in some communities. Deconcentrated disaster management budgeting has started in some districts.

**17. Other Ministries, private sector and civil society play key roles on adaptation in Zambia.**

Adaptation to climate change is increasingly becoming a cross-sectoral issue, involving the Ministries of Finance and National Planning, Agriculture and Cooperatives, Energy and Water Development, Works and Supply, Communications and Transport, Local Government and Housing and Community Development and Social Services, several civil society and academic organizations, and increasingly the private sector.

**18. Despite this broad coverage, the institutional arrangements for adaptation in Zambia are not yet fully defined.** Sectoral Ministries coordinate Sectoral Advisory Groups (e.g. on Environment, Agriculture, Infrastructure, Health, Energy and Water, Local Government and Decentralization) with the participation of civil society. These groups provide the consultative fora for inputs to the Sixth National Development Plan, due to be finalized by June 2010. Being sectoral, they tend to experience difficulties in comprehensively addressing cross-cutting issues such as climate change. The Government of Zambia is currently consulting

<sup>10</sup> The Facilitation Unit is presently a temporary unit, from which a permanent structure should be developed.

internally on the best long-term institutional arrangements for climate change coordination. It is hoped that the PPCR can support existing efforts to reach an institutional consensus towards this goal. Until then, the Ministry of Finance and National Planning will coordinate Phase I of the PPCR.

19. **The legal framework for climate change adaptation and disaster risk management is under development.** The Climate Change Facilitation Unit is starting to prepare a National Climate Change Strategy and Policy. In parallel, the Disaster Management and Mitigation Unit is finalizing a Disaster Management bill, giving the Unit legal authority for guiding disaster management, risk reduction and other disaster management operations in Zambia. These initiatives need to be closely coordinated with the evolution of institutional mandates.
20. **Zambia has completed key review documents for adaptation and disaster risk management.** A National Adaptation Programme of Action was completed in 2007 and a Hyogo Progress Report in 2009. It has also drafted a Flood and Drought Management Plan. These documents, however, have not yet been formally implemented. The Second National Communication to UNFCCC is being completed.
21. **Programmatic investment in adaptation has been mainstreamed in sectoral programs.** Given Zambia's strong sectoral focus and lack of decentralized budgeting, donor financing for adaptation has been traditionally channeled through key Ministerial Programs: key donors include Finland, Norway, UNDP, Canada, UNEP, Germany, and GEF/World Bank/GEF for the Environmental Program; the EC, World Bank and AfDB for Transport; DFID and Sweden for Health; Denmark, Germany, Ireland, Norway and the World Bank for Water; AfDB, World Bank, Finland, FAO and USAID for Agriculture; and Germany for Decentralization. Annex 4 shows the existing donor support to programmatic adaptation financing in Zambia.

## **B. Zambia's Strategic Program for Climate Resilience (SPCR)**

### **Objective of the SPCR**

The objective of Zambia's Strategic Program for Climate Resilience would be to *mainstream climate change issues in the Sixth National Development Plan and other strategies in order to ensure sustainable economic development towards the attainment of the country's Vision 2030.*

22. The SPCR will be implemented in two phases:
  - Phase I to Formulate a Strategic Programmatic Framework for Climate Resilience
  - Phase II to Integrate Climate Resilience into Core Development Plans, Budgets and Investments.

### **PPCR Priority Components and Description**

23. The following consensus was reached on PPCR components during the Joint Mission workshop of November 16-17, 2009:

## ***Phase I - Preparation Towards developing the Strategic Program for Climate Resilience***

### Mainstreaming Climate Resilience into National Development Planning

24. This component aims to incorporate climate change considerations, and in particular adaptation to climate change into the development planning process and strategic plans.

#### **Expected Outcome:**

- Climate Change adaptation issues incorporated into the final plans and strategies of the most vulnerable sectors of Sixth National Development Plan
- For most vulnerable sectors, proportion of budgetary allocation allocated to climate adaptation activities increased by 20-30% in 2011 National Budget.

25. The main focus would be the **mainstreaming of the Sixth National Development Plan** (SNDP), paying particular attention at its *smart growth* strategy, i.e. advise the SNDP planners on how best to help Zambia reach its SNDP and longer-term goals (Vision 2030) while coping with climate change. Examples of strategic development goals which would be vulnerable to climate change include rainfed crops (particularly estate crops), cattle, hydropower targets, social infrastructure and climate-vulnerable health targets such as malaria control. The PPCR would seek to mainstream climate resilience into all key sectors of the SNDP.

26. The primary outputs of this component would be as follows:

1. A Sixth National Development Plan which incorporates climate resilience as a smart growth strategy in key strategic sectors.
2. Climate resilience mainstreamed in the Green Paper prepared for the 2011 National Budget. The Green Paper is a key document that provides indicative budgetary resources by sector.
3. Mainstreaming climate resilience in the Strategic Plans for Ministries of Agriculture, Works and Supplies, Health, Energy and Water, and Environment and Natural Resources. These strategic plans are key documents for implementation within the development planning process.
4. Building the “learning-by-doing” capacity of key sectoral planners in climate resilience.

27. The Planning Department within the Ministry of Finance and National Planning, which oversees the preparation of the SNDP, would take overall responsibility for this component, and issue appropriate mainstreaming guidelines to the Sectoral Advisory Groups responsible for inputs to the SNDP. It would also ensure that climate resilience is adequately reflected into the planning process. As an example, the Comprehensive Africa Agriculture Development Program in the Ministry of Agriculture and Cooperatives could be reinforced to include a section on climate risk management in the agriculture sector. Regarding the

Ministry of Tourism, Environment, and Natural Resources, it is noted that it is currently leading the Environment and Natural Resources Management and Mainstreaming Programme (a US\$43 million programme), so harmonization with the inputs provided by this programme will be essential. To ensure appropriate technical inputs and coordination with this and other important mainstreaming initiatives, the Ministry of Finance and National Planning would involve experts from the Ministry of Tourism, Environment and Natural Resources, the Disaster Management and Mitigation Unit, the Civil Society Climate Change Network, Academia, and Technical Assistance as needed.

28. The PPCR would fund *incremental* technical assistance and consulting services in support of this component, complementing and harmonizing the support provided by other development partners.

### **Strengthened Institutional Coordination**

29. This component aims to strengthen inter-sectoral coordination amongst national stakeholders responsible for climate change – including Ministry of Finance and National Planning, Ministry of Tourism, Environment and Natural Resources, Disaster Management and Mitigation Unit, Meteorological Department, Cabinet Office, other relevant Sectoral Ministries, Civil Society and Private Sector.

### **Expected Outcome:**

30. A national consensus on the institutional framework to coordinate climate change that builds upon existing programs and optimizes local capacity, by the Second Joint Mission.

The PPCR would support three main outputs during Phase I:

1. A consensus building process, amongst national stakeholders, to come up with strengthened institutional coordination mechanisms for Climate Change in Zambia, based on the principles of institutional sustainability, national ownership, and national and international best practices – including the growing need to bring together sustainable development, economic planning, climate change adaptation, and disaster risk management expertise. The First Joint Mission recognizes the need to mainstream climate change resilience consideration in the national planning processes and also acknowledges the cardinal role in this process that the Government has assigned to the National Planning Department in the Ministry of Finance and National Planning. The mission is also aware that there are in existence coordination and implementation roles regarding climate change. Through this component during Phase I, the mission expects that a consensus will be reached on an institutional structure for leadership and coordination, which will subject to discussion by the time of the Second Joint Mission.
2. The formulation of a National Climate Change Strategy by this national platform by the end of Phase I.
3. Gradual strengthening of climate change adaptation/disaster risk management units within key sectoral Ministries (long-term capacity building would be carried out during Phase II).

31. This component will be implemented by Ministry of Finance and National Planning, in close collaboration with Ministry of Tourism, Environment and Natural Resources and the Disaster Improved information for Decision Makers Management and Mitigation Unit.
32. The PPCR would fund workshops, training, technical assistance and incremental operating costs in support of this component.
33. This component aims to strengthen the awareness of policy makers, legislators, and key development partners on climate change issues, thus enabling them to make more informed decisions on development processes.

**Expected Outcome:**

34. Strengthened flow of information available to decision makers and the general public on climate change trends and impacts, thus enabling them to make more informed decisions.
35. The PPCR would support four major outputs:
  1. **Multi-model downscaled climate scenarios** – involving a national consensus on the final scenarios and capacity building for key national institutions (such as University of Zambia).
  2. **Sectoral impact analysis** – filling key gaps on sectoral impact analysis targeted at priority policy needs – for example, impact of climate hazards on strategic agriculture policy choices promoted under the Sixth National Development Plan (e. g. Coffee, cattle), and flood risk modeling.
  3. **Economic analysis** – based on the sectoral impact analysis, and targeting losses (and potential benefits) of climate change and variability to micro and macro-economic variables. This would be subject to data availability.
  4. **Strengthening climate information quality.** Initial digitization of satellite-based rainfall estimates, using digital photography and pattern recognition software. This correction will be critical to improve the accuracy of rainfall estimates downloaded from the SADC remote sensing unit, and ultimately Zambia’s early warning system. This would be started during Phase I but completed in Phase II.
36. The Ministry of Finance and National Planning would coordinate the involvement of key partners in this component, including Zambian Meteorological Department, DMMU, University of Zambia, CEEEZ, Climate Change Facilitation Unit, Ministry of Agriculture (Early Warning), ZESCO, Department of Water Affairs, and UN Institutions. The approach would be to build the capacity of key national champions, while linking them with international centers of excellence and/or experts. Thus, for multi-model downscaled climate scenarios, for example, experts from University of Zambia or CEEEZ could be linked to international modelers; for the economic analysis, experts from Ministry of Finance and

University of Zambia (Mathematics Department) could be guided by international resource economists.

37. This component would directly focus and support the mainstreaming needs of Component 1 – thus improving the quality and access to climate information – while at the same time preparing the way for Phase II.
38. The PPCR would fund technical assistance, training, workshops and incremental operating costs in support of this component.

### **Targeted Awareness and Communication**

39. This component aims to strengthen awareness on the critical importance of climate change adaptation in the development process.
40. The key audience would be policy makers in critical sectors (e.g. Agriculture, Environment and Natural Resources, Water, Local Government), private sector (Commerce and Industry), legislators (parliamentarians and house of chiefs, municipal leaders and traditional leaders), NGOs and civil society groups, the media and academia. The PPCR is expected to be only one of the contributing partners of this initiative.
41. The main outputs during Phase I would center around targeted dissemination of:
1. Copenhagen (opportunities, challenges, and negotiating strategies)
  2. The results of the analytical work developed under Component
  3. Longer-term awareness and communication would be left to Phase II.
42. To ensure close programmatic collaboration, Ministry of Finance and National Planning would involve qualified partners in the implementation of this component, including civil society partners, academia, and private sector.
43. The PPCR would fund workshops, awareness materials, technical assistance and incremental operating costs in support of this component.

### **Preparation for Phase II**

44. During Phase I, considerable effort will be dedicated to preparing a Strategic Programmatic Framework for Climate Resilience. The objective is **not just to prepare a pilot project but a programmatic framework that supports climate resilience in Zambia**. Through the mainstreaming, institutional strengthening, analytical and awareness efforts, **and through the joint collaborative efforts of all key development partners**, Zambia will have identified, by the end of Phase I, the roles of development partners this **integrated financing framework**,

of which the PPCR will finance a portion. Zambia will, however, require much more funding than what the PPCR can bring to become more climate resilient. The Pilot PPCR investment project will therefore need to be harmonized with other funding brought by the Government of Zambia, private sector and other development partners. Together, they form a program.

45. The Government of Zambia, in close consultation with Collaborating Partners, would need to decide by the end of Phase I whether a new Program for Climate Resilience is warranted, or whether financing would simply follow a programmatic framework and be part of existing national programs. The principle should be to build upon and harmonize with existing efforts and build on lessons of experience. PPCR Phase II should also follow the evolving institutional mandates for climate change in Zambia, which should be known by the time of the Second Joint Mission.
46. As such, Component 5 should result in two major outputs:
  1. A financing framework for a National Program for Climate Resilience – specifying the complementary role of the PPCR pilot investment relative to that of other funding.
  2. The design of the Pilot PPCR investment for Phase II.
47. The pilot SPCR would focus on priority areas in Western and Southern part of Zambia within the Zambezi River Basin. Within the basin, priority project areas should be identified based on:
  1. “Win-win” criteria (highest probability of success, high local commitment, access, etc.)
  2. High vulnerability (as revealed by sectoral and regional vulnerability indices).
  3. Complementarity vis-à-vis other funding/development efforts.
48. The Ministry of Finance and National Planning will establish a multi-stakeholder team and hire technical assistance, as needed, to prepare the programmatic framework and the Phase II pilot. To the extent possible, the PPCR would be aligned with other donor funds to leverage the funding of priority climate resilient investments within Sectoral Plans and/or Provincial Integrated Development Plans – thus ensuring effective mainstreaming of adaptation in Zambia.
49. To the extent possible, integrated planning should be promoted to encourage local adaptive response, both in soft adaptation measures (sustainable agriculture production and ecosystems) as well as in hard, engineering solutions (climate resilient infrastructure) - while at the same time providing local communities with the support and knowledge needed to adapt to climate change.



## **Phase II – Zambezi River Basin Pilot (*Priority Areas within the Zambian portion of the river basin, to be identified during Phase I*)**

50. Given that Phase II would need to be prepared during Phase I, the description provided below should be considered indicative only and subject to considerable adjustments during Phase I.

### **Strengthened Early Warning**

51. This component would strengthen the early warning information supporting the activities of the Meteorological Department, DDMU and sectoral agencies. It is expected to be national in scope, and potentially involve:

- Assist the Zambian Meteorological Department to digitize all rainfall station data and correct satellite-based rainfall estimates (to improve accuracy and spatial coverage)
- Assist DDMU in completing hazard mapping for key impacts (droughts, floods, and heat stress) and map key sectoral vulnerabilities.
- Long-term capacity building for the Zambian Meteorological Department, DDMU and Sectoral Ministries in downscaled climate forecasting, hazard mapping, satellite remote sensing, impact modeling and other priority early warning system components.
- Potential investment in synoptic and agro-met stations (in collaboration with other partners).

### **Sustainable Agriculture Production and Ecosystems**

52. This component aims to strengthen the adaptive capacity and livelihood of farmers and natural ecosystems in the most affected areas of southern and western Zambia in the Zambezi River Basin, focusing on sustainable agriculture production and natural ecosystems' outcomes.

53. Based on the results and findings of Phase I, priority sensitive and vulnerable targets (areas, farm blocks, and/or ecosystem resources) would be selected to make them climate resilience.

54. PPCR is expected to target the following investments:

- A **baseline study** on climate change vulnerability assessment in some of the selected sites of the Zambezi River Basin
- Select priority livelihood targets and **map their vulnerability** with and without climate change
- Under the climate change scenario, fund **practical and low-cost adaptation measures in sustainable agriculture production and ecosystems** – for crops, these might include, among others, conservation farming; water harvesting, flood water control and utilization; crop variety selection based on maturity period; water logging traits; changes in planting time;

sustainable agro-forestry systems (including bee keeping), etc. For livestock, this might include promotion of hardy breeds that could withstand climate change conditions.

- Training and **awareness** activities aiming at influencing farmers behavior.
- Long-term **policy and capacity support** at the national level (e.g. mainstreaming of climate change adaptation into Agriculture Policy).

55. The component would seek to work in an integrated manner in pilot agriculture and natural resources areas where basic infrastructure (such trunk roads, bridges, feeder roads, electricity, community irrigation infrastructure and social infrastructure) could also be adapted in face of climate variability and climate change. Small scale agriculture would be targeted as small scale holders are the ones most vulnerable to climate change. One outcome of this initiative would be to adapt and improve the productivity of small holder crops, and natural livestock systems in a sustainable manner and to build upon sectoral initiatives guided and financed by other partners under the Sectoral and Regional Strategic Plans.

### **Climate Resilient Infrastructure**

56. This component would seek to integrate climate resilience in infrastructure planning and investments to reduce its vulnerability to climate change impacts.

57. It would focus on the same pilot areas as the Sustainable Agriculture Production and Ecosystems component.

58. Based on the results of the mainstreaming and Phase I preparation activities, priority climate resilient infrastructure investments would be selected for financing under Phase II. The priority infrastructure to climate proof would be expected to be identified by regional plans of the pilot areas concerned.

59. This component would support a number of priority interventions during Phase II as follows:

- Carrying out risk assessment and flood mapping for the pilot areas on risk levels (return periods) for various infrastructure such as transport, dams, irrigation systems, power generation facilities, and buildings.
- Identifying and preparing a checklist of critical infrastructure that is particularly vulnerable to climate change.
- Priority climate resilient investments in infrastructure on the pilot areas expected to be affected by climate change and variability – this could cover transport (roads, waterways, railways and pipelines), communication, water and sanitation, energy, recreation, housing and institutional infrastructure (schools and health centers).
- Long-term policy support – such as upgrading regional and national standards and codes of practice that need to be adapted to climate change resilience (e.g. SATTC Standards on the design of roads and bridges, developing climate resilient infrastructure standards and specifications); creating a clearinghouse for information on transportation and climate change; ensuring that land use control tools such as Environmental Impact Assessments (EIAs) and land use plans take into account climate change and identify where appropriate

investments are less vulnerable to climate change; updating policies and key strategic regulations to take into account climate resilience.

- Institutional and technical capacity strengthening in relevant infrastructure related ministries to integrate climate risk and resilience in infrastructure design and development

## **Program Management**

60. This component would help support the program/programmatic financing framework, monitor field activities, and assume financial management and procurement functions. It could also carry important overhead activities found to be necessary during Phase II.

## **C. Consultation Process Followed up to First Joint Mission**

61. **The Joint Mission marked the initial preparation of the PPCR process.** The lead Government agency – Ministry of Finance and National Planning (MFNP) followed a three step consultative process with its development partners:

1. First, it engaged two consultants to prepare a **stocktaking analysis** and carry out initial consultations with stakeholders prior to the arrival of the Joint Mission (a process that took two weeks, from November 2-14, 2009). This initial consultation involved:
  - Identification of key stakeholders directly or indirectly associated with climate change issues
  - Written requests to ask them to participate in discussions and interviews
  - Preparation of structured questions and discussions topics covering
    - (i) On-going Activities;
    - (ii) Awareness and Concerns;
    - (iii) Climate Change Interface into Activities and Planning; and
    - (iv) Gaps and Recommendations.
  - Group discussions and key informant interviews with key stakeholders
  - Analysis of findings – particularly identifying recurring themes to incorporate into findings, lessons and recommendations.
  - This initial consultation led to a compilation of a Stocktaking Report, which was available in draft form by the time of the mission’s arrival and whose main findings were discussed at the consultative workshop below.
2. Second, Ministry of Finance and National Planning organized a two-day **consultative workshop** upon arrival of the Joint Mission (November 16-17, 2009), attended by 45-50 participants from key Ministries, civil society, private sector, and some development partners. The workshop discussed preliminary PPCR priorities for Phase I and II. The minutes of the workshop are attached as Annex 3.

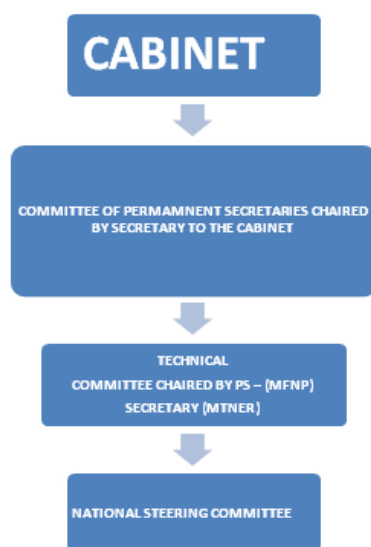
3. Given that civil society, development partners and private sector were under-represented at the workshop and there was a need to follow up in further detail with priority sectoral Ministries, the Joint Mission organized further **follow-up consultation meetings** with representatives of these groups to discuss their recommendations, suggestions for involvement in the PPCR, and potential concerns. The list of stakeholders consulted and key meeting minutes is attached as Annex 2.
4. During November 18, 2009, Mission Leaders also participated in a ZNBC TV program on Climate Change.

**62. The consultations revealed three consistent weaknesses in the national framework: weak institutional coordination, low awareness, and the need for better access to and sharing of data.** There were perceived overlaps in institutional mandates between MoFNP, MoTENR, DDMU and other sectoral agencies (e.g. Met Department) that require further debate and a national consensus. Regardless of institutional mandates, stakeholders expressed a clear need to be further involved in the process of helping strengthen climate resilience in Zambia.

#### D. Proposed Institutional and Funding Arrangements for Phase I of the PPCR

##### Structural Arrangements

**63. For structural purposes the PPCR will function within the provisions of the Government system.** The institutional structure below defines the process through which PPCR Phase I will be implemented. Cabinet, headed by the President, is made of Ministers who supervise each Ministry or sector in the Zambian economy. The Secretary to the Cabinet, who is also the highest Government official, supervises Permanent Secretaries at the Ministerial or sector level. For structural purposes, the PPCR will follow this system. **At the Technical Level,** day-to-day implementation will be spearheaded by the Ministry of Finance and National Planning (MoFNP), Ministry of Tourism, Environment and Natural Resources, and the Disaster Management and Mitigation Unit (Office of the Vice President).



## **Phase I Execution and Implementation**

64. **The Ministry of Finance and National Planning (MOFNP), Economic Management Department (EMD) will execute and coordinate the PPCR activities under Phase I.** To ensure that dedicated efforts are coordinated, a full time National Coordinator will be engaged. Further, a full-time Financial Manager/Accountant will be hired to assist the Coordinator to ensure accountability and transparency in the application of the funds. The funds will be released and disbursed according to the prescribed and agreed PPCR Phase I budget and activities, once these are finalized. The disbursement of the funds towards various components of the budget will be guided by the project proposals of the components under the budget activities. Throughout the life of Phase I, MOFNP would apply the accountability and transparency standards of appraisal, monitoring, evaluation and auditing that meet the standards of the Government of Zambia as well as those of Multilateral Development Banks.

## **Procurement**

65. The Government would use existing procurement capacity and systems within the Ministry of Finance and National Planning, and procurement and consultant documents which the Multilateral Development Banks have reviewed and found to be acceptable for procurement purposes.

### **D. Proposed Budget and Schedule for Phase I of the PPCR**

66. **The proposed budget and schedule for Phase I of the PPCR are still being finalized.**

SN	ACTIVITY	SUB-ACTIVITY	COST (US Dollars)	TOTAL (US Dollars)
1	<b>Mainstreaming Climate Resilience into National Developing Planning</b>	i. Consultative Meeting	60,000	300,000
		ii. Sensitization workshop for provincial and national planners	50,000	
		iii. Incremental Operating Budget	50,000	
		iv. Setting up an M&E system	50,000	
		v. One vehicle	50,000	
		vi. Developing training manual on mainstreaming of CC	40,000	
2	<b>Strengthened Institution Coordination</b>	i. Inter-ministerial conference	80,000	190,000
		ii. Training	50,000	
		iii. Operating costs	60,000	
3	<b>Improved information for decision makers</b>	i. Digitizing rainfall stations and improving RFE estimates	30,000	270,000
		ii. Production of hazard maps	40,000	
		iii. Downscaling of forecasts (1-6 days + seasonal forecasts)	40,000	
		iv. Production of historic maps of identified climate indices	30,000	
		v. Scoping and training on suitable crop models	30,000	
		vi. Scoping and training on suitable flood models	30,000	
		vii. Provision and advise on multi-model climate change scenarios	30,000	
		viii. Scoping economic assessment of climate change	20,000	
		ix. Coordination and targeting appropriate interventions	20,000	
4	<b>Targetted Awareness and Communication</b>	<i>1. Workshops for policy makers</i>		204,000
		i. Parliamentarians	15,000	
		ii. Policy makers	15,000	
		iii. Municipal & traditional leaders	30,000	
		iv. Civil Society	15,000	
		v. Media	15,000	
		<i>2. In country study tours</i>	i. Traditional leaders and policy makers, academia	
<i>3. Dissemination of information</i>	i. Media materials (radio, TV, Print), research, training	64,000		
5	<b>Preparation for Phase II</b>	1. Equipment	60,000	500,000
		2. Community consultation	20,000	
		3. Stakeholder Workshops	30,000	
		4. Environmental Assessment	60,000	
		5. Social Assessment and Resettlement Framework	60,000	
		6. Project Preparation and Appraisal (4 projects)	60,000	
		7. Community Vulnerability Assessment	40,000	
		8. Financial Management, M&E	70,000	
		9. National Coordinator & Accountant	100,000	
			<b>SUB-TOTAL</b>	1,464,000
			<b>Contingency</b>	36,000
			<b>TOTAL</b>	<b>1,500,000</b>

SN	ACTIVITY	SUB-ACTIVITY	START	DURATION (MONTHS)	MONTHS												
					1	2	3	4	5	6	7	8	9	10	11		
					Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec		
1	MAINSTREAMING CLIMATE RESILIENCE INTO NATIONAL DEVELOPING PLANNING	i. Consultative Meeting	2	2	Feb	Mar											
		ii. Sensitization workshop for provincial and national planners	2	4	Feb	Mar	Apr	May									
		iii. Setting up an M&E system	5	3				May	June	July	Aug						
		iv. Developing training manual on mainstreaming of CC	2	2	Feb	Mar											
2	STRENGTHENED INSTITUTION COORDINATION	i. Interministerial conference	2	3	Feb	Mar	Apr										
		ii. Training	4	3			Apr	May	June	July							
3	IMPROVED INFORMATION FOR DECISION MAKERS	i. Work with ZMD to digitize rainfall stations and improve RFE estimates	1	4	Feb	Mar	Apr	May									
		ii. RFE estimates	1	4	Feb	Mar	Apr	May									
		iii. Produce hazard maps and change with ZMD	3	6			Apr	May	June	July	Aug	Sept					
		iv. Downscaling of forecasts (1-6 days + seasonal forecasts)	4	4				May	June	July	Aug	Sept					
		v. Produce historic maps of identified climate indices	3	6			Apr	May	June	July	Aug	Sept					
		vi. Scope and training of suitable crop models	3	6			Apr	May	June	July	Aug	Sept					
		vii. Scope and training of suitable flood models	3	6			Apr	May	June	July	Aug	Sept					
		viii. Provision and advise on multi-model climate change scenarios	1	8	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec		
		ix. coping economic assessment of climate change	4	4				May	June	July	Aug	Sept					
		x. Coordination and targeting appropriate interventions	1	8	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec		
4	TARGETTED AWARENESS AND COMMUNICATION	1. Workshop for policy makers	1	8	Feb	Mar	Apr	May	June	July	Aug	Sept					
		2. In country study tours	2	4		Mar	Apr	May	June								
		3. Dissemination of information	2	5		Mar	Apr	May	June	July							
5	PREPARATION FOR PHASE II	2. Community consultation	6	6						July	Aug	Sept	Oct	Nov	Dec		
		3. Workshop	6	6						July	Aug	Sept	Oct	Nov	Dec		
		4. Environmental and Social Assessment	6	6							July	Aug	Sept	Oct	Nov	Dec	
		6. Project Preparation and Appraisal (4 projects)	6	6							July	Aug	Sept	Oct	Nov	Dec	
		7. Community Vulnerability Assessment	6	6							July	Aug	Sept	Oct	Nov	Dec	
		8. Financial Management, M&E	6	6							July	Aug	Sept	Oct	Nov	Dec	



## Annex 1 CIF Letter for Phase 1 Report

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REPUBLIC OF ZAMBIA

In reply please quote:

No. ....

## MINISTRY OF FINANCE AND NATIONAL PLANNING

MF/EMD/101/1

CHIMANGA ROAD  
P.O. BOX 50062  
LUSAKA

26<sup>th</sup> January, 2010

Climate Investment Funds  
The World Bank  
Washington, D.C. 20433  
**U.S.A.**

**RE: SUBMISSION OF THE DESCRIPTION OF PHASE ONE REPORT ON THE PILOT PROGRAMME FOR CLIMATE RESILIENCE (PPCR) PROCESS IN ZAMBIA**

The Ministry of Finance and National Planning, on behalf of the Government of the Republic of Zambia, wishes to formally forward the Description of Phase One report with its annexes on the Pilot Program for Climate Resilience in Zambia. This report is an outcome of the Joint Mission consultative process that took place from November 16 to 27, 2009 under the leadership of the Government of the Republic of Zambia.

The Objectives of the mission were to develop a Phase One proposal for the formulation of a Strategic Program for Climate Resilience, through broad-based consultation, dialogue with key stakeholders, and analysis of key development plans, policies and strategies.

Prior to the mission, activities that included stocktaking of relevant information on climate resilience, compilation of all country level programs and activities that were relevant to the PPCR and initial consultation with relevant stakeholders were reviewed.

With regards to the above, therefore, the Government of the Republic of Zambia wishes to proceed with the implementation of Phase One activities as contained in the report. As planned, we intend to commence the mainstreaming process of climate resilience into the Sixth National Development Plan (SNDP) within the month of February 2010.

Details of the submission are as outlined in the emailed documentation and the Climate Investment Fund (CIF) Administration Unit may publish the information.

  
Likolo Ndalamei  
Secretary to the Treasury  
**MINISTRY OF FINANCE AND NATIONAL PLANNING**

## Annex 2 List of Stakeholders Contacted during the Joint Mission Process

### Meeting with Civil Society 23 November 2009

Name	Organization	Email	Phone
Patrick Matakala	WWF	<a href="mailto:pmatakala@wwfzam.org">pmatakala@wwfzam.org</a>	0979 273022
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Vincent Ziba	SAFIRE – Sustainable Forest Management	<a href="mailto:vinceziba@yahoo.com">vinceziba@yahoo.com</a>	0977 210382
Henry Machina	Zambia Land Alliance	<a href="mailto:land@coppernet.zm">land@coppernet.zm</a>	222432
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Alimakio Zulu	NRCF	<a href="mailto:amaliko_zulu@yahoo.com">amaliko_zulu@yahoo.com</a>	0977 704114
Kiss Brian Abraham	Earth Magazine	<a href="mailto:kissabraham@gmail.com">kissabraham@gmail.com</a>	0977 474801
David Ngwenyama	Zambian Ornithological Society	<a href="mailto:zosproject@zamnet.zm">zosproject@zamnet.zm</a>	0977371616
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Assan Ng'ombe*	UNDP	<a href="mailto:Assan.ngombe@undp.org">Assan.ngombe@undp.org</a>	0977 795233
Lewis Bangwe*	AfDB	<a href="mailto:L.bangwe@afdb.org">L.bangwe@afdb.org</a>	0977 718602

\* Mission team members

### Meeting with Ministry of Agriculture

Name	Position	Email	Phone
Elicko Kalaba	Deputy Director – Policy and Planning	<a href="mailto:eckalaba@maff.gov.zm">eckalaba@maff.gov.zm</a>	0977328863
Mutemwa Mate	Senior Economist		250504
Mr. Vibetti	Chief Veterinary Officer		250504
Mr. J. Mwango	Chief Fisheries Officer)		250504

### Meeting with Road Development Agency

<b>Name</b>	<b>Position</b>	<b>Email</b>	<b>Phone</b>
Benson T Walewambwa	Chief Engineer – Buildings Depart	<a href="mailto:bwalewambwa@yahoo.com">bwalewambwa@yahoo.com</a>	0955 406049
Boster H. Chiyaba	Chief Engineer – Planning	bosterchiyaba@yahoo.co.uk	0977 773319, 211 253088
Arron Mwila	Chief Engineer Planning – RDA	<a href="mailto:amwila@roads.gov.zm">amwila@roads.gov.zm</a>	+260 211 253088

### **Other Meetings**

<b>Name</b>	<b>Organization</b>	<b>Email</b>	<b>Phone</b>
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Joseph Kanyanga	Zambia Meteorological Department		
Dr. Suman Jain	University of Zambia	<a href="mailto:sjain@unza.zm">sjain@unza.zm</a>	0977626991
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Mr. Peter Lubambo	Ministry of Local government and Housing	Director – Department of Physical Planning and Infrastructure Development	+211- 254119
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	Zambia Chamber of Small and Medium Business Associations	<a href="mailto:Zcsmba@hrdp.co.zm">Zcsmba@hrdp.co.zm</a>	+211-254855

**Extraordinary TENR CPs meeting on Pilot Programme for Climate Resilience** - UNDP, Lusaka, 23 November 2009

<b>Name</b>	<b>Organization</b>	<b>E-mail</b>
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Sofia Bettencourt	World Bank	<a href="mailto:sbettencourt@worldbank.org">sbettencourt@worldbank.org</a>

**Stakeholders consulted during Stocktaking Exercise (Prior to Joint Mission)**

NAME	TITLE	ORGANISATION	
Mr. Peter Lubambo	Director	Department of Infrastructure and Support Services – Ministry of Local Government and Housing	250528
Prof F.Jain	Coordinator	Climate Change Facilitation unit	<a href="mailto:pjain@microlink.zm">pjain@microlink.zm</a>
Mr. Danny Zulu	Principal Economist	Department of Infrastructure and Support Services – Ministry of Local Government and Housing	250528
Vaatainen Senja	Junior Climate Change expert	International Union of Conservation of nature	
Mr. Douglas Shin'ganga	Senior Engineer (Water and Sanitation)	Department of Infrastructure and Support Services – Ministry of Local Government and Housing	250528
Mrs E. Mwelwa	Environment Manager	Zambia Electricity Supply Corporation (ZESCO)	
Mr Chileshe		Department of Water affairs	251337
Mr. Moses Mwale	Deputy Director Research	ZARI – Ministry of Agriculture and Cooperatives	
Mr. Chansa	Head of Research	ZAWA – Ministry of Tourism, Environment and Natural Resources	Tel: 229417

Mr. Patrick Galande	Deputy Director Research	Department of Fisheries – Ministry of Agriculture and Cooperatives	250528
Mr. Elias Mwape	Chief Engineer (Design)	Road Development Agency – Ministry of Works and Supply	250168
Ms. M. Amatende	Chief Architect	Department of Buildings – Ministry of Works and Supply	250168
Mr. O. Yunga	Senior Architect	Department of Buildings – Ministry of Works and Supply	250168
Mr. S. Kabanga	Senior Quality Surveyor	Department of Buildings – Ministry of Works and Supply	250168
Dr Sichingabula	Lecturer	University of Zambia-Geography Department	295655
Mr. Muchindu	Director	Meteorology Department – Ministry of Communications and Transport	253692
Prof. S. Jain	Lecturer	University of Zambia-Mathematics Department	0977626991
Mr Mwangase		Meteorology Department – Ministry of Communications and Transport	
Mr. Julius P. Daka	Manager (Planning and Information Management)	Environmental Council of Zambia – Ministry of Tourism, Environment and Natural Resources	Tel: 254130/254023/254059 <a href="mailto:pbanda@necz.org.zm">pbanda@necz.org.zm</a>
Mr Boston Katongo	Project Coordinator-SNC	Environmental Council of Zambia – Ministry of Tourism, Environment and Natural Resources	Tel: 254130/254023/254059 <a href="mailto:bkatongo@necz.org.zm">bkatongo@necz.org.zm</a>
Mr. Mainga Luabelwa	Chief Planner	Planning Department – Ministry of Finance and National Planning	251843
Mr. Francis Mpampi	Principal Planner	Planning Department – Ministry of Finance and National Planning	251843
Mrs Esnart Mpokosa	Chief Planner Regional	Planning Department – Ministry of Finance and National Planning	251843
Mr Sishekanu Martin	Chief Agriculture specialist (Land Husbandry)	Ministry of Agriculture and Cooperatives	252552
Mr M. Shitima	Technical Officer - Natural	Ministry of Tourism, Environment and Natural Resources MTENR/UNDP	0977 893961 <a href="mailto:mwapeshitima@yahoo.co.uk">mwapeshitima@yahoo.co.uk</a>

	Resource Economics Climate Change Facilitation Unit (CCFU)		
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Mr. Abel Siampale	Forester – FMGT	Department of Forestry – Ministry of Tourism, Environment and Natural Resources	Tel: 234375  Fax: 223930
Ms Peggie N. Zulu	Senior Technician	Department of Forestry – Ministry of Tourism, Environment and Natural Resources	Tel: 234375  Fax: 223930
Ms Joyce Munkombwe	Monitoring and Evaluation Officer	Department of Forestry – Ministry of Tourism, Environment and Natural Resources	Tel: 234375  Fax: 223930
Dominiciano Mulenga	National Coordinator	Disaster Management and Mitigation Unit – Office of the Vice President	252692

**Minutes of Proceeding – Pilot Program for Climate Resilience (PPCR) Meeting with CSOs**

**World Bank 23 November 2010**

Present:

<b>Name</b>	<b>Organization</b>	<b>Email</b>	<b>Phone</b>
Patrick Matakala	WWF	pmatakala@wwfzam.org	0979 273022
Clive Chibule	Green Living Movements	<a href="mailto:Clivechibule@yahoo.co.uk">Clivechibule@yahoo.co.uk</a> greenlivingmovement@yahoo.com	0977 899976 222377
Vincent Ziba	SAFIRE – Sustainable Forest Management	vinceziba@yahoo.com	0977 210382
Ethel Yandila	DFID	E-Yandila@dfid.gov.uk	251164/423350
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The PPCR Joint Mission held a consultative and awareness meeting with the Civil Society to discuss the PPCR , and how best the CSOs can contribute to the process of program development and implementation. The meeting took place at the World Bank on 23 November 2009.



The meeting started with a presentation made by the World Bank on what the PPCR was and its objectives. The ensuing discussions focused on the role of CSOs, how they can contribute to the PPCR.

#### Discussions

- What were Phase I and Phase II timelines? – it was explained that phase I of the PPCR will end in August 2009 and phase II has a duration of up to 6 years
- The meeting was reminded that it was important for to ensure that the discussions also focus on avenues for CSO participation in this process
- It was brought to the fore that the PPCR was mainly focusing on adaptation – mitigation was equally important for Zambia – The meeting was informed that this program was only one part of the climate change agenda and that there were other programs and funds that were looking at issues of mitigation. It was further mentioned that some adaptation activities had links to mitigation hence the two will actually complement each other.
- How do CSOs participate in the component of Institutional coordination? The following issues were identified:
  - Need of a forum where CSO would contribute to the process with one voice.
  - Need for CSO to be effectively organized to ensure representation (CSOs requested for capacity building in mobilization). Mobilization would also look at actual numbers to represent them on various committees during the consultations in phase I of the PPCR
- The mapping exercise of institutions working on climate change should including CSOs and their programs. This will lead to specific interventions such as:
  - Strengthen the Climate Change Civil Society Network and also answer the question of
  - How this initiative (PPCR) will relates/compliment the environmental mainstreaming program and the work of the CCFU
- The Civil Society expressed the need for them to be involved in identifying the investment/priority areas for Phase II. They recognized that there is a direct link between what they were doing and adaptation – and example of the Rain Water Harvesting Association was given.
- Regarding the selection of the pilot site, the CSOs were of the view that instead of the Zambezi river basin, the pilot area should be determined by an eco-system as it would be more representative. They suggested the Miombo Eco-region (system). This suggestion would tie in with the development of a resilience strategy for the whole of Zambia as the effects of climate change are country wide (migration, socio-economic impact)
- Awareness
  - CSO was an important player – there were already ongoing programs in this area – PPCR can support ongoing support
  - CSO could also play a role in the dissemination of ongoing studies
  - Through the mapping case studies could be selected and built for awareness raising

- The PPCR could also assist CSOs to build cohesion and coordination among players --- mapping could catalyze this.
- The Climate Change Civil Society Network have started a process of mapping and are already providing input into the SNDP – the PCR could support/strengthen this process
- The Network also suggested that they could have a seat on the SAGs
- They also suggested that they could produce a mainstreaming guide as an output during phase I of the PPCR
- The CSOs expressed concern of having the Ministry of Finance and National Planning as the focal point institution for the PPCR. They expressed concern in the difficulties of access and the bureaucracy that existed in the ministry. Difficulties to accessing of funds through the Ministry of Finance may hinder their participation in the PPCR process. Ministry of Finance may not be the most appropriate institution to coordinate – as they may not have the capacity (numbers) to execute this role.
- After a lengthy discussion, it was resolved that the MFNP through its Planning Department was ideal to provide the leadership and coordination of the program as this will ensure government ownership.

67. The meeting was closed with remarks that there were going to be other consultation fora that CSOs would be requested to attend. Further the meeting was informed that the outcomes of this meeting would be forwarded to the PPCR Joint Mission for consideration in the development of the Phase I proposal.

## **Annex 3 Workshop: Notes on Pilot Program for Climate Resilience (PPCR) Joint Mission - November 16-17, 2009**

### **INTRODUCTION**

This report details the proceedings of a 2 day consultative workshop held on the Pilot Programme for Climate Change Resilience (PPCR) from 16<sup>th</sup> to 17<sup>th</sup> November 2009 organised by the Ministry of Finance and National Planning. The workshop was held in order to get consensus on the priority sectors to mainstream in the PPCR first stage as part of the preparatory process to developing a strategic program for climate resilience. The workshop was facilitated by the Ministry of Finance and National Planning with the support of the World Bank, African Development Bank, the International Finance Corporation, the United Nations Development Programme (UNDP) and DFID. Government line Ministries and agencies, civil society organisations and the private sector were amongst the participants.

The workshop was facilitated by Mr. Paul Lupunga (MOFNP) on the first day and Mr. C. Kaluba on the second day.

### **WORKSHOP PROCEEDINGS**

#### ***DAY 1 – Monday 16<sup>th</sup> November 2009***

The workshop began with introductions and presentation of workshop objectives Mr. John Chunga (MOFNP) who outlined the objectives as

- To get consensus from stakeholders on designing a country led programme for climate resilience. It was explained that the PPCR aims at building on already existing initiatives and that the formulation phase for the PPCR coincided with the preparation of country's Sixth National development Plan (SNDP) and therefore accorded an opportunity for mainstreaming climate resilience in the SNDP. The approach would involve stock taking of all climate issues for integration into the SNDP and to plan sector programs that would be included in the SNDP for climate resilience and would also involve looking at the outcomes of the past activities assessing if:
  1. What was planned was achieved?
  2. How do we plan for the future to integrate climate change?
  3. Is there need for policy change in order to integrate climate change?

#### **SPEECH BY MS. VIOLA MORGAN (UN COUNTRY DIRECTOR)**

The UN Country Director highlighted the background of the PPCR as having started from the Washington meetings and follow up meetings were held in Zambia and urged the participants to expedite use of a multi-sectoral approach to developing strategies for climate resilience which would also consider indigenous forms of knowledge as well as contribute to sustainable development. She noted that the

workshop was organized at an opportune time when the country is preparing for the SNDP and reiterated the United Nations' commitment to supporting the Government of the Republic of Zambia (GRZ) in governance and poverty reduction support programmes amongst others.

#### **PRESENTATION ON PPCR FINANCING - SOPHIA BENTTENCOURT (Co – Mission Leader, World Bank)**

The PPCR was explained as one of the Climate Investment Funds (CIFs) developed by the multilateral Development Banks, participating countries and other stakeholders born out of recognition that the existing adaptation funds were insufficient to meet country demand and that the program was planned at the right time when the country prepares for the 2009 Copenhagen meeting on Climate Change.

The PPCR would be implemented in two phases with Phase 1 involving the preparation of a Strategic Program for Climate Resilience and would last between 3 – 18 months with a grant of up to US \$ 1.5 million. Typical activities under this phase would involve analysis of climate risks, institutional analysis, awareness raising, rapid capacity building, stakeholder consultation, prioritising investments amongst other activities. Phase two would involve the implementation of Strategic Program for Climate Resilience with grants and concessional loans of between US \$30 – 60 million per country.

It was explained that approach to developing a country program should involve the review of FNDP goals in order to assess if the strategic goals were at risk due to climate change and variability and assessing if these goals can still be achieved if Zambia was made more climate resilient. For Zambia, the anticipated climate risks were that there was going to be an increase in average temperature by 2 percent and a projected increase in mean precipitation, coupled with more droughts and disasters. Examples of extreme weather are the floods experienced in North-western, Southern, Northern Province and the river basins and the trends would have an effect on agriculture, food security, housing, health, water and sanitation, infrastructure. Climate resilience therefore entails addressing long term trends and asking how resilient a sector would be to climate change and increasing the coping capacity so that the country can absorb the effects of climate change without expanding the cost widely.

#### **REVIEW MAINSTREAMING CLIMATE RESILIENCE IN PLANNING AND POLICY DOCUMENTS - PETRONELLA MWANGALA**

It was explained that this did not require changing the national long term Vision (2030) and that in the SNDP, there is need to agree on priority sectors and that since the National Environmental Policy was now out, there is need to finalise the implementation of the Environmental Investment Strategic plans to include strategies relating to climate resilience, and that this might be a challenge to meeting some of the development goals.

The presentation also highlighted the challenges facing the environment Sector some of which include: of inadequate data and weak M & E systems, untrained manpower, weak coordinating mechanisms amongst other challenges. Coupled with challenges, the Sector is threatened by population and economic growth, declining animal populations, increase in emissions, degradation of wetlands and dependence on climate sensitive sectors which limits the environmental sector's adaptive capacity. The meeting was urged meeting to enhance our adaptive capacity at national level to reduce its impact.

## **CLIMATE RESILIENCE - PROFESSOR YAMBA**

It was explained that a stock taking exercise had been conducted as part of the preparatory process for the Joint Mission. The presentation outlined that Zambia has experienced a number of climatic hazards such as seasonal flash floods that have impacted on water security, quality, energy and sustainable livelihoods and numerous research done on climate change by Zambia Metrological Department (ZMD), Centre for Energy, Environment and Engineering Zambia (CEEEZ), and ICUN, UNZA (Mathematics Department) have pointed towards Zambia being a drought prone area and that in the long term, the sectors that will be affected are energy and hydroelectricity power. From the situation analysis, it was established that although the implementation of the National Environment Policy had been approved, the policy does not cover climate Change in totality.

However, there is no integrated institutional arrangement at policy level to mainstream climate proofing in the Vision 2030 and FNDP implementation Strategy. Sectors such as agriculture, infrastructure, energy, environment and natural resources have activities requiring climate change proofing. Since the SNDP is under way, the environment should be a priority Sector and if climate change is not integrated, then there is risk of the plan being affected.

There is also need for more awareness on Climate Change and early warning systems and networking with key institutions.

## **OUTCOMES FROM DAY 1 PLENARY DISCUSSIONS**

### ***The following were agreed on:***

1. Need to stick to a few activities for the first phase.
2. Need to agree on activities that will ensure that the Climate Resilience issues are mainstreamed in the SNDP.
3. That the National Environment Policy has an aspect of creation of funds for climate resilience
4. Need to develop integrated institutional plans.
5. Need to consider the effects of Climate Change on public health. It was also mentioned that the Department of metrology is now working towards collecting temperature data which to some extent will determine the effects on public health. It was also note that Zambia's per-capita emissions are quite high (as high as Sweden).
6. Need to ensure coordination and Implementation among line ministries so that the PPCR is not driven by one ministry.
7. The mainstreaming has to be done at the policy and operational level. Early warning seems to have centred on metrological aspects but this must be all encompassing.

8. There is need for more sensitisation Copenhagen Conference by the Ministry of Tourism, Environment and Natural Resources.
9. Three priorities were identified for the phase one as: Early warning, crop species and infrastructure development (See Appendix).
10. The meeting emphasised that phase one should include mainstreaming CC into the SNDP. There is need for the sectors to understand the impact of climate change on other sectors. Implementation can start with already existing resources if we are agreed on the activities to be undertaken. The meeting also noted that there was need for capacity to mainstream climate resilience and that MOFNP as a supervisory institution should ensure implementation and for M and E.
11. The meeting was assured that the Planning Department will be active in the whole process on climate resilience and that it will ensure the plans are captured into the SNDP.
12. Need to have strong mechanisms for coordination. We are all dependant on one another. Need to mainstream climate change development planning.
13. Need to build and share knowledge and information across sectors. Still have a lot of work to do in terms of knowledge sharing and information sharing.

## ***DAY 2 – Tuesday 17<sup>th</sup> November 2009***

The second day with opening remarks from Mr. Kaluba, who facilitated for the day and listed the themes for discussion in group work as follows:

### **GROUP 1 – Mainstreaming Climate Change in the SNDP**

<b>FNDP Review</b>	<b>How these gaps will be filled in the SNDP</b>	<b>Mainstreaming Climate Change in the SNDP for consideration in Phase 1</b>
Environment mainstreaming was expressed as an intention in the FNDP; there was recognition but was narrowly focused.	Articulation of CC issues in the SNDP as a cross cutting issue; separate from Environment Chapter; have a stand alone chapter on CC	Integrate CC issues into the SAG terms of reference (TORs)
CC considered under Environmental Management and protection and implementation of the NAPA	The introduction chapter to the SNDP should give the strategic framework for integrating climate change in each sector.	Conducting quick assessment study on the impact of CC on key sectors

priority programmes.		
The sectors did not mainstream environment – due to the challenge of coordination	The sector chapters should mainstream as a crosscutting issue	Develop a concept paper on Climate change to include situational analysis and KPIs
CC indirectly considered in agriculture through promotion of small irrigation and conservation farming but not part of the strategy for climate resilience,	Need for quality control in the design of the sector	Orientation of all SAGs including MOFNP on CC and impact on sectors and the specific role of the Sector in response to climate change.
<b>Agriculture</b> also considered although it was considered as a challenge.		Provision of technical assistance to the key sectors (Agriculture, Energy, Infrastructure, Environment, Natural Resources and MOFNP) ensuring that CC issues are well articulated in the plan and also ensuring quality control in sector chapters.

The group proposed that the Climate Change Facilitation Unit (CCFU) should be the anchoring unit on integration of climate change into the National development Plan and will be responsible for all the above activities. There was a lot of debate on whether the CCFU should be the anchoring unit or the Ministry of Tourism Environment, and Natural Resources should be the lead, this was not concluded.

Other issues discussed in plenary were that:

- The process should start almost immediately
- CCFU’s mandate is limited, and so the process be given to MTENR
- Decide which institution can help with the mainstreaming.

## **GROUP 2 - INSTITUTIONAL SET-UP FOR THE PILOT PROGRAMME FOR CLIMATE**

### **RESILIENCE (PPCR)**

**Challenges relating to institutional coordination were highlighted as:**

- Poor co-ordination among institutions;
- Weak information dissemination systems;
- Weak monitoring and evaluation systems

The following was the proposed institutional framework

#### **National Steering Committee.**

- Membership:
- Key Government Institutions, Four (4) Representatives from the Private Sector, Two (2) Representatives from Civil Society Network on Climate Change;

#### **Technical Committee:**

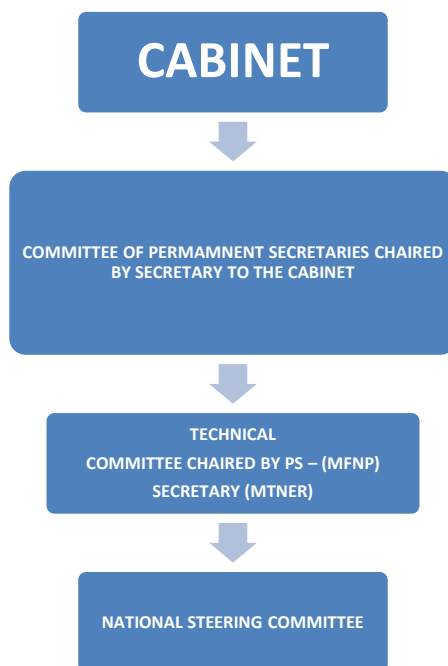
- Membership:
- All Key Government Institutions (Director to Assistant Director level) Chaired by the Permanent Secretary (Planning and Economic Management Division), Secretary to be the Ministry of Tourism, Environment and Natural Resources.

#### **Committee for Secretary to the Cabinet;**

- Membership:
- Permanent Secretaries from all Key Government Institutions, and chaired by the Secretary to the Cabinet.
- Cabinet.

#### **Proposed Structure**





### Policy Review and Legal Framework Required

Reviewed the following documents in order to streamline climate change issues.

- All legislature related to climate change issues; and
- All environmental policy related documents;

**GROUP 3 - ANALYTICAL GAPS** – on forecasting, vulnerability assessment, assess better what on a practical basis what needs to be done that our policy makers need to understand in the next six to eight months

	What has been done?	What are the gaps?
Historical Meteorological data		<ul style="list-style-type: none"> <li>• Harmonization of weather data from different sources; QC/QA</li> <li>• Climate hazard maps based on historical observations</li> </ul>
Projections		<ul style="list-style-type: none"> <li>• Availability of multi-model data for future projections</li> <li>• Downscaled data and models</li> </ul>
Vulnerability mapping		<ul style="list-style-type: none"> <li>• Required national vulnerability baseline</li> <li>• Identify climate impacted vulnerabilities</li> <li>• Stocktaking of information feeding into the EWS</li> </ul>
Agriculture		<ul style="list-style-type: none"> <li>• Inventory of water retention</li> </ul>

		<p>strategies</p> <ul style="list-style-type: none"> <li>• Information to determine land use change and crop monitoring</li> <li>• Crop survey more than once per season</li> </ul>
<b>Water</b>		<ul style="list-style-type: none"> <li>• Specialized hydrological equipment for verification of flow discharge measurements</li> <li>• Models and methods for relating rainfall to runoff and streamflow</li> </ul>
<b>Energy</b>		<ul style="list-style-type: none"> <li>▪ Reliable short term forecasts of rainfall/run off</li> </ul>

**Priority projects:**

1. Data inventory, rescue, trend analysis and hazard mapping
2. Stocktaking of information needs and flow (including modelling of impacts) from different sectors into the EWS and decisions made by DMMU
3. Include downscaled multi model future scenarios in assessing the impacts of climate change
4. Plan the implementation of an assessment of the economic impacts of climate change

**Historical data**

- Last 8 years, able to single out which sectors are more vulnerable – (i) infrastructure, (ii) agriculture, (iii) health, (iv) education, (v) environment and (vi) human habitation.
- Each of the above sectors have early warning systems e.g. Ministry of Agriculture has a fully fledged EWS unit carrying out monitoring, education sector has a EWS and can make projection of risks. Education is a sector which is highly affected. Missing vulnerability data.
- Each sector should be able to analyze the information and identify gaps. Analysis has been done on water, agriculture, etc.
- Gaps – (no linkages with climate) no climate data has been well articulated but plans are in place to carry out cross checking to establish linkages in vulnerability. Could be a start of mainstreaming climate change
- Need to identify climate info and link it to vulnerability to identify risks and important areas for mainstreaming

### Well documented climate information and mapping

- Fragmented information, no coherence national maps on floods and droughts are talked about but no documentation on trends of changing climate or variability (what are the long term trend analysis to give indication of climate change or variability)
- Need a comprehensive, and integrated analysis of different variables e.g. temperature, rain, evapo-transpiration, etc. and well document – leading a common national understanding
- Need harmonized data centers which capture data from operational and voluntary meteorological stations throughout the country. Some data is digitized, some not.
- Meteorological – type of data - temp, rainfall (likelihood of the forecast)
- Data generation - Met have synoptic stations which sent synopsis with actual data which then links up with global forecasts based on NCEP data
- National data is used for monitoring; forecasting data is generated from NCEP, SAWS (5-7 days), ECMWF (12 days)

### Hydrological information

- 140 hydrological stations exist since 1950s in Zambia, though significant amounts of missing data. Data is digitized using HYDRADATA which is easily accessed
- Department of Water Affairs working with Meteorological department for EWS for downstream impacts (communities). Work is often project specific
- Type of data - stream flow, using rating equations, which are adjusted when need arises
- Models are run by ZESCO for the Kafue system
- Need to identify appropriate models using Met data to forecast for downstream
- Sources of hydrometeorological data - Zambia Met, DWA, ZESCO/WWF, Zambezi River Authority, Min of Agriculture
- Some stations are project specific
- Need to enhance extent of data coverage through a comprehensive assessment of what is existing to ensure sustainability in monitoring (data rescue project)
- Need to digitize data and capturing it on a centralized location to ease analysis and access
- Zambia Vulnerability Assessment Committee (Met, ZESCO, Agr, Health, etc.) is a source of sharing information, develop a contingency plan

- System is in place for translation and dissemination of info – likelihood forecasts (from Met) feed into sector models (e.g. health, water, etc) and run to generate vulnerability maps.

Agriculture - How is agro met data collected and used?

- No data compilations for national use
- More than 30 rain gauges
- Issues of land management and water use efficiency is day to day tasks
- Collects raw data (kind of crops, areas that have been planted, qualitative analysis of crop yields, etc) through surveys carried out once per year for purpose for forecasting. Monitoring once a year is inadequate
- Cannot determine land use changes due to lack of equipment. Human capacity exists
- Existing projects: Met, CARE and Min of Agr. to promote agromet shell (crop model) – met has people who are trained to run agro-meteorological models
- Crop yield data exists with the Agri monitoring unit (since 1980's)

Environmental Monitoring

Collects air and water pollution, compilation and National GHG inventory as basis for mitigation measures

Gaps – no systematic collection of data, no quality assurance and controls of data collected from different sectors

Ministry of Natural Resources and Tourism

- Impacts of climate change in economic terms – how much it is costing the country in line Stern Report in CC
- Methodology has been developed by a consultant
- Need to use the methodology to carry out the actual impact analysis

Policy

Need a prototype for mainstreaming climate change into National Development Plan

**One Priority Gap to fill in each of the sectors**

- Vulnerability baseline in relation to different sectors. Essential for SNDP (what benefits will this project contribute in making vulnerability baseline available). Identify one indicator which can influence other sectors?
- Carrying out a survey on how much water has been kept in retention structures? Inventory of water retention structures (dams, weirs, water-harvesting structures)
- Stocktaking of the status of existing ESW with the aim of developing of a centrally located ESW and located to climate change
- Harmonize data from different geographical areas to generate trend analysis to develop climate risk maps (could use satellite data, etc) through documentation of data points
- Need to expand monitor parameters to capture climate information
- Capacity in modelling within the country
- Need to link historical data with vulnerability assessment within single sector to identify the risks
- We need to start with historical data? What are the current vulnerabilities? What are the existing institutional structures? Need to put into place the infrastructure, capacity needs/
- What goes into the analysis? How can different institutions talk to each other?
- How is data packaged?
- How can it be translated to climate data?
- What are the risks?

#### **GROUP 4 - PREPARATION FOR PHASE II INVESTMENT**

**The Pilot Project will focus on the Zambezi River Basin centering on the following priority sectors:**

1. Early Warning Systems
2. Sustainable Agricultural Production Systems
3. Climate Resilient Infrastructure
4. Programme Management

#### **EARLY WARNING SYSTEMS**

- I. Installation of Meteorological and Hydrological Stations in pilot area

- II. Matching satellite with ground data (calibration)
- III. Link up with Okavango River Commission and Zambezi River Authority (ZRA)

#### **SUSTAINABLE AGRICULTURAL PRODUCTION SYSTEMS**

- I. Identification, use and improvement of water stress, flood tolerant, pest and disease tolerant and crop varieties and adaptable livestock species and breeds
- II. Identification, use of cost effective adaptable agricultural technologies and practices including forest, Fire and Wildlife Management
- III. Protection of Fish and Wildlife Breeders

#### **CLIMATE RESILIENT INFRASTRUCTURE**

- I. Rain water harvesting
- II. Safe water storage and purification
- III. Drainage Management(catchment, irrigation and transport systems)
- IV. Participatory Risk Mapping of and planning for public infrastructure for adaptable and land use planning in key areas of higher risk

#### **PROGRAMME MANAGEMENT**

Programme Management to include among others

- I. Participatory Monitoring and Evaluation
- II. Strengthening Capacity to adapt and respond to Climate Change Manifestations

*Depending on the priorities arising from the National Development Planning and Mainstreaming processes, other sectors like Health may have to be included*

**GROUP 5 - Awareness:** Create awareness of ongoing activities; Priority gaps for phase one; One top priority; Indicate achievements in 6-8 months; Cost of the assignment

**Problem:** The limited knowledge in Climate Change –issues – adaptation/resilience in development processes

**Objective:** Create awareness on climate change- issues - /resilience/adaptation/mitigation in (for) development processes

- Define climate change issues: resilience, adaptation, mitigation in relation to development
- Blending of technical knowledge with indigenous knowledge

**Outcome:** Awareness on the critical importance of climate change adaptation in development processes that contribute to the formulation of national plans/documents

**Target Audiences:**

- Policy makers (Sectors – agriculture, environment and natural resources, local government)
- Private sector (Commerce and industry)
- Legislators (Parliamentarians and house of Chiefs, Municipal leaders)
- NGOs/CBOs – community-based adaptation
- Media
- Academia

**Outputs**

- A specialized team created to manage the awareness creation (in a socially accepted)
- Dissemination of climate change milestones
- The COP 15
- Opportunities
- Challenges
- Negotiation positions
- Dissemination of analytical works
- Early warning

**Activities and Costs**

• <b>Creation/Hiring of a team</b>	<b>100,000 (PE)</b>
• <b>Workshops (15),</b>	<b>200,000</b>
• <b>Town hall meetings -targeted discussions</b>	<b>160,000</b>
• <b>In country study visits</b>	<b>50,000</b>
• <b>Targeted short term training</b>	<b>50,000</b>
• <b>Multi-media – n/papers, n/letters, radio, mobile cinemas</b>	<b>200,000</b>
<b>Total</b>	<b>660,000</b>

Sources: PPCR, GRZ (CCFU advocacy works), Corporate Social Responsibility

### **Monitoring and Evaluation**

- Indicators:
  - Number of:
    - Workshops
    - Meetings
    - Discussions
    - Dissemination events
    - Printed information

### **Results:**

- Resilience mainstreamed in development documents (plans, strategic plans, .....
- Number of sectors taking up climate change in their plans – e.g., the private sector
- Level of awareness created
- Partnerships:
  - World Bank, AfDB, UN System, Bilateral CPs, Relevant civil society



## APPENDIX I

Sector	Activity	Priority
Agriculture	Early Warning	
Agriculture	Crop species and livestock	
Agriculture/Energy	Irrigation(PV)	
ZMD(cross-cutting)	More MET stations	
Water	Early warning system	
Water	Infrastructure(construction)	
Water	Water harvest	
Forestry	Agro forestry/reforestation	
Cross sectoral	Institutional arrangement	
Wildlife sector	Animal species(monitoring)	
Water	Infrastructure development- dam, ground water and surface water	
ROAD TRANSPORT	Early warning system	
Cross cutting/environment	Climate change Policy and legal framework	5
Cross cutting	Sustainable land use mgt	
ZMD	Early warning , dissemination	
Health	Impacts of climate change/more understanding	5
Cross cutting	Early warning and vulnerability assessment	
Environmental	Capacity building GHG preparation,QA/QC	
Cross cutting	Capacity building for sectoral experts in environmental mgt	5
Energy	Energy mgt and alternative energy	
Agriculture	Fisheries magt	
Agriculture	Alternative livelihood generation	
Cross- cutting	Gender mainstreaming	
Cross cutting	Financing	
Agriculture	Innovative irrigation	
Mining	Abatement	
Education	Awareness	
Cross cutting	Early warning/modelling	
Infrastructure	Norms and standards	
R& D	Across sector	
Agriculture	Up-scaling adaptation activities	
Agriculture	Adaptation/crop varieties	
Infrastructure	Rural road infrastructure and early warning	
Cross cutting	Updating/ revising Ecological zones	
Cross cutting	Data Gaps	
Cross cutting	All sectors mainstreaming	

#### Annex 4 Mapping of Donor Support for Environment, Natural Resources and Climate Change Activities in Zambia

Interventions by the main implementing partners	
Ministry of Tourism, Environment and Natural Resources	Zambia Wildlife Authority
IUCN Climate change and development	SLAMU Phase V
Climate Change Facilitation Unit	Kafue National Park
Second National Communication to the UNFCCC	Support to Economics Expansion and Diversification (SEED)
Clean Development Mechanism (CDM) Capacity Building Regional Project	Nyika TFCA
Luangwa Ecological Partnership Programme	Kasanka / Lavushi Manda Project
Lake Tanganyika integrated Management Programme	The Reclassification and Effective Management of the National Protected Areas System
Removing Barriers to invasive plant management	Conservation of Miombo-Dry Forest
Regional Energy and Environment Partnership in support of public-private partnerships in renewable energies	Removing Barriers to invasive plant management
Environment and Natural Resources Management and Mainstreaming Programme (ENRMMP) (Capacity Development component and Interim Environment Fund)	Integrated Land Use Assessment Project (ILUA)
Institutional cooperation between Finnish Ministry of Environment and MTENR	Sustainable utilization of environmental assets and climate change
	Institutional cooperation between Finnish Ministry of Environment and MTENR
Sustainable utilization of environmental assets and climate change	Environmental Council of Zambia

<p>Ministry of Agriculture and Cooperatives</p> <p>IUCN Climate change and development</p> <p>Conservation farming</p> <p>Adaptation to the effects of drought and climate change in Agro-ecological Zone 1 and 2 in Zambia</p> <p>Regional Africa Adaptation Programme</p> <p>Programme for Luapula Agricultural and Rural Development</p> <p>Integrated Land Use Assessment Project (ILUA)</p>	<p>Second National Communication to the UNFCCC</p> <p>Removing Barriers to invasive plant management</p> <p>Sound Management of Chemicals</p> <p>Terminal Phase-out Management Plan</p> <p>Sustainable utilization of environmental assets and climate change</p> <p>Institutional cooperation between Finnish Ministry of Environment and MTENR</p>
<p>Ministry of Energy and Water Development</p> <p>Regional Energy and Environment Partnership in support of public-private partnerships in renewable energies</p> <p>Capacity Development for Sustainable Renewable Energy Management and Utilisation</p> <p>Renewable energy (WB)</p> <p>Water sector programmes</p>	<p>Forestry Department</p> <p>Provincial Forestry Action Programme</p> <p>Integrated Land Use Assessment</p> <p>Meteorological department</p> <p>Regional Africa Adaptation Programme</p> <p>Adaptation to the effects of drought and climate change in Agro-ecological Zone 1 and 2 in Zambia</p> <p>Capacity development for effective Early Warning Services to support climate change adaptation in Zambia</p> <ul style="list-style-type: none"> <li>• Capacity building for climate change cooperation (Danida)</li> </ul>

Interventions by theme							
Climate Change							
Action Title	Description & results	Main donor	Contact	Others involved	Start/end year	Budget(U S\$)	Remarks (links to PPCR)
IUCN Climate change and development	Collecting site specific evidence on CC. Developing tools for communities, project/programme leaders, researchers and decision makers to assess vulnerability at the landscape/watershed level. Practical results from the project are shared and linked to international policy processes.  Luapula, Western and Central Provinces	Finland	Excellent Hachileka. email: excellent.hac hileka@iucn.org	MTENR; MACO; PLARD, CIFOR, SAFIRE projects; traditional leadership; local communities; District Councils	2007-2009	2 700 000	Potential lessons learnt from community level activities
Support to Meteorological Services in the SADC region	In inception phase	Finland	Embassy of Finland, Pretoria	TBC	2010-	TBC	

Conservation farming	<p>Access to Carbon Credits</p> <p>Strengthening of MACO Extension services</p> <p>Research and development</p> <p>Farmer Demonstration and Training, Information Dissemination, Networking and Knowledge Transfer</p> <p>Creating an enabling policy environment</p> <p>Enhanced food production</p> <p>Sustainable agricultural practices promoted.</p> <p>Southern, Eastern, Western and Central Province</p>	Norway	Odd Eirik Arnesen	<p>Implementing partners</p> <p>FAO/MACO</p> <p>Conservation Farming Unit (CFU)</p>	<p>2005-2009</p> <p>2008-2010</p>	<p>CFU-</p> <p>25 000 000</p> <p>FAO/MAC O-</p> <p>4 700 000</p>	PPCR will contribute to the ongoing efforts to support conservation farming
ZNFU/CFU agro dealer programme	<p>Improved availability and timely distribution of inputs and equipment for Conservation Farmers</p> <p>Southern, Eastern, Western and Central Province</p>	Norway	Odd Eirik Arnesen	Implementing partner CFU	2008-2009	405 000	PPCR will contribute to the ongoing efforts to support conservation farming

Terrafrica Leveraging Fund	To provide grants for various projects on climate change in the Sub Saharan African region.  Sustainable Land Management processes in Sub Saharan Africa mainstreamed.	Norway	Odd Eirik Arnesen	World Bank	2008-2009	1 700 000	
COMESA Climate change	Advocacy and policy dialogue through the establishment of an African political platform on climate change.  Increased knowledge and management and enhanced capacity on climate change.  Enhance civil society engagement in climate change.  Establish an African climate change facility	Norway	Odd Eirik Arnesen		2008-2009	2 200 000	

<p>Support to Climate Change Facilitation Unit</p>	<p>To strengthen national coordination of all efforts intended to respond to the climate crisis and integrate climate change into national strategic planning</p> <ul style="list-style-type: none"> <li>Climate change strategy</li> <li>Climate change Policy and legal framework</li> <li>Advocacy and communication strategy</li> <li>Adaptation and REDD programmes</li> </ul>	<p>Norway UNDP</p>	<p>Odd Eirik Arnesen and Moosho Imakando</p>	<p>MTENR</p>	<p>2009-</p>	<p>TBC</p>	<p>Overall policy and programme implementation framework for CC to be developed by CCFU. PPCR will draw from the directional policy paper.</p>
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Second National Communication to the UNFCCC	Prepare the Zambian Second National communication to the UNFCCC, including a Green House Gas inventory, progress on vulnerability assessments and adaptation interventions, sensitization and dissemination of climate change issues at national level	UNDP	Winnie Musonda	ECZ implementing partner MTENR executing agency/GEF OFP	8/2007-8/2010	455 000	Generates information and data that will be used for next nat. communication. PPCR will contribute to capacity development for collection and analysis of information
Clean Development Mechanism (CDM) Capacity Building Regional Project	Capacity building for CDM. Establishing an operational CDM framework in which public institutions can interact with private sector and jointly implement CDM projects.	UNDP	Lannette Chiti	MTENR/CCFU	2009- (2 <sup>nd</sup> phase)	TBC	



Adaptation to the effects of drought and climate change in Agro-ecological Zone 1 and 2 in Zambia	Effective water management for climate change -induced drought adaptation in the Southern province, parts of Western province and the southern parts of Lusaka province. Water harvesting and appropriate technology transfer are foreseen as the main activities. Programme document submitted to GEF for approval.	UNDP	Assan Ng'ombe	MACO, MET Dept	2009-	TBC	PPCR may upscale the adaptation initiatives piloted through this programme
Capacity development for effective Early Warning Services to support climate change adaptation in Zambia	Developing a tailored system that guides operations, production and delivery of adequate early warning services at all level of end users and upgrading current early warning services to accommodate the Climate Change adaptation concerns. UNDP contribution will be towards the development of the capacity of the national institutions that play a key role in early warning for adaptation, strengthening of the cooperation among national institutions and involvement of cooperating partners. The programme has started with the formulation of the ZMD Strategic Plan 2009-2013.	UNDP	Amos Muchanga	Meteorological Department	2008-	TBC	PPCR will build upon the existing capacity development programmes

UN REDD	Building capacity in developing countries to implement REDD, providing financial incentives to reduce Greenhouse Gas (GHG) emissions (predominantly CO2) from forest lands. Prodoc development ongoing.	UNDP/Norway	Samuli Leminen	Forestry Department	2010-	TBC	PPCR will link up with REDD interventions through land use management planning and protection of forests/watersheds
Support to Zambia Meteorological Department  Capacity building for climate change cooperation	Improving the existing station network.  Upgrading the workshop at ZMD.  Improving the data management at ZMD.  Improving basic data analysis techniques.  Introducing climate data gridding techniques.  Producing regional climate projections for Zambia.  Reviving and upgrading ZMD's web-site.  Implementing a web-site at ZMD's regional office in the Southern Province.	Denmark	Litumelo Mate  254277	None	December 2009  December 2012	DKK 5,000,000	Potential for build up by increasing the support for more intensified support.



Biodiversity, wildlife and fisheries							
Action Title	Description & results	Main donor	Contact	Others involved	Start/end year	Budget(US \$)	Remarks (links to PPCR)
Protecting Environment through Trade	Protecting Environment and Natural Resources Through Trade in High Value Chilies  Livingstone and Sinazongwe	EC	Africa Now Livingstone Office	Elephant Pepper Dev.Trust	01/2007 - 12/2009	928 295	
Scaling up benefits for rural area populations (SUBRAP)	Enable Wildlife Based Livelihood for Poor Communities in Zambia, Zimbabwe, Mozambique and Botswana  Livingstone Kazungula, Sesheke and Lower Zambezi	EC	Africa Wildlife Foundation Livingstone Office. Director Nesbert Samu	Africa Wildlife Foundation	01/2005 - 12/2009	4 243 081	
Support to AWF	Capacity of Sekute Community Development Trust strengthened  Sekute Community in Kazungula	Finland	Director Nesbert Samu, Kazungula Heartland	AWF	2006-2009	118 800	

Support to Kasanka Trust	Enhanced capacities and governance of Community programme, enhanced capacity of community resource boards and communities  Kasanka NP	Finland	Edmund Farmer, Park Manager	Community Resource Boards	2006-2009	56 700	
Community Based Natural Resources Management CBNRM Capacity Building Programme in Southern Africa	A functional regional CBNRM fora for information sharing including best practices. CBNRM training supported in formal and non-formal institutions. Strategic institutional capacity building of focal organisations involved in CBNRM in partner countries. Provision of support for policy and legislation provided at country level with linkages to regional sectorial policies and transboundary initiatives.  Botswana, Malawi, Mozambique, Namibia and South Africa	Norway	Odd Eirik Arnesen and Trond Løvdal	WWF Norway	2006-2009	4 600 000	

<p>Community Markets for Conservation extended Bridging (COMACO)</p>	<p>COMACO activities continued including the western boundary of the park</p> <p>Improved livelihoods</p> <p>Sustainable livelihood practices enhanced</p> <p>Reduced poaching</p> <p>Eastern Province and Central Province</p>	<p>Norway</p>	<p>Odd Eirik Arnesen and Trond Løvdal</p>	<p>COMACO</p>	<p>2008-2009</p>	<p>527 000</p>	<p>PPCR will contribute to the ongoing efforts to support conservation farming</p>
<p>Luangwa Ecological Partnership Programme.</p>	<p>Environment priorities for Eastern Province identified.</p> <p>Framework for the LEPP developed and implemented</p> <p>Ecosystem management in the Luangwa valley enhanced</p> <p>Enhanced coordination amongst key stakeholders on environmental challenges in the valley</p> <p>Chipata</p>	<p>Norway</p>	<p>Odd Eirik Arnesen and Moosho Imakando</p>	<p>Implementing partners Eastern Provincial government authorities in consultation with MTENR</p>	<p>2009-2011</p>	<p>TBC</p>	<p>Synergies with PPCR in the adaptation activities.</p>

SLAMU Phase V	<p>Sustainability on operational costs</p> <p>Increased tourism revenues</p> <p>Increased wildlife populations – Elephant and Buffalo increased by 15%</p> <p>Reduction in the area of park burnt illegally.</p> <p>90 percent of the park accessible</p> <p>Improvement in biomass</p> <p>Improvement in park management.</p> <p>South Luangwa National Park</p>	Norway	<p>Odd Eirik Arnesen</p> <p>Trond Løvdal and Moosho Imakando</p>		2005-2009	9 400 000	
Kafue National Park	<p>Increase in Tourism Revenue by 100%</p> <p>Increased employment opportunity for locals to 75%</p> <p>Increase in wildlife populations</p> <p>Elephant, Lechwe, Puku and Buffalo by 10%</p> <p>60% of the park roads accessible year round</p> <p>Improved park management</p>	Norway	<p>Odd Eirik Arnesen</p> <p>Trond Løvdal and Moosho Imakando</p>	World Bank	2005-2009	11 600 000	

Support to Economics Expansion and Diversification (SEED) - Kafue	Critical habitats and species secured in Kafue National Park and adjacent GMAs	World Bank	Jean-Michel Pavy	Norway ZAWA	2005-2011	10 200 000	
Nyika TFCA	Sustainable Management of the Nyika TFCA (Malawi-Zambia Transfrontier Conservation Area)	World Bank	PPF	ZAWA	2009-2013	2 600 000	
Open Africa SN Tourism Corridor (OANSTC)	Community members living with the OANSTC project corridor entered the economic mainstream by leveraging their tourism opportunities.  Biodiversity is mainstreamed into tourism by communities along the OANSTC routes.	World Bank	Open Africa		2008-2010	500 000	
Kasanka / Lavushi Manda Project	Sustainable Management of Lavushi Manda through Kasanka Trust.  Kasanka/ Lavushi Manda	World Bank	Kasanka Trust	ZAWA	2009-2011	900 000	



Programme for Luapula Agricultural and Rural Development (PLARD).	Fisheries co-management strengthened (co-management structures established and capacitated, management plan in place).  Luapula Province, Mweru-Luapula Fishery	Finland	pd@plardzambia.org; mee@plardzambia.org	MACO Luapula Province; District Farmers Associations, District Business Associations	2006-2010	13 500 000	Potential lessons learnt from the fisheries sub-sector and community level impacts
Lake Tanganyika integrated Management Programme	The Zambian component of the regional Lake Tanganyika project focuses in controlling the sediment flows from the steep mountainous terrain surrounding the lake. Sustainable agriculture and forestry are promoted by strengthening institutions and supporting community participation. Over-fishing is also addressed with support from African Development Bank and FAO.  Mpulungu and Kapula districts	UNDP	Amos Muchanga	MTENR, AfDB, FAO	2006-2011	2 840 000	Sharing knowledge and best practices in CC adaptation and livelihood alternatives

The Reclassification and Effective Management of the National Protected Areas System	Strengthening the enabling frameworks and capacities for managing the National Protected areas system in Zambia and recommends appropriate policy, regulatory and governance frameworks in order to provide new tools for public-private-community-civil society management partnerships. Strengthening and enhancing existing institutional capacities for improved protected areas monitoring and evaluation and business investment planning.  Bangweulu and Lower Zambezi	UNDP	Assan Ng'ombe	ZAWA implementing partner MTENR executing agency/GEF OFF	2006-2012	6 000 000	Sharing knowledge and best practices in CC adaptation and livelihood alternatives
Conservation of Miombo-Dry Forest in West Lunga	(Extension of the Reclassification project) The Miombo Ecoregion (additional component of the Reclassification project) aims to set up the West Lunga National Park and surrounding new protected areas, protecting forest carbon reservoirs and conserving biodiversity. P	UNDP/ Germany	Assan Ng'ombe	ZAWA	2009-2011	2 500 000	Sharing knowledge and best practices in CC adaptation and livelihood alternatives
Removing Barriers to invasive plant management	To determine the best technique of controlling mimosa pigra. Regional project in Ethiopia, Ghana, Uganda and Zambia  Lochinvar National Park	UNEP	Griffin Kaize Shanungu, ZAWA	MTENR/ZAWA/E CZ	2007-2009	625 000	

<p>The Pan-African Bean Research Alliance (PABRA) project (Phase III)</p>	<p>Supports PABRA's programming and five-year strategy. The PABRA program aims to improve the bean crop, to meet the nutritional needs and ensure the food security of a large segment of the rural population in a sustainable manner. The project also has a special focus on the needs of women and children. PABRA is an alliance of three bean-research networks in East, Central and Southern Africa, under the International Center for Tropical Agriculture</p>	<p>Canada</p>	<p>Robin Buruchara,  Kawanda Agricultural Research Institute, Kampala, Uganda</p>	<p>Centro Internacional de Agricultura Tropical</p>	<p>2003 – 2008</p>	<p>7 487 954</p>	
<p>Biosciences Eastern and Central Africa - Phase II</p>	<p>Establishment of a Centre of Excellence in Bioscience in Agriculture (now called Biosciences eastern and central Africa or BecA). BecA is supporting eastern and central African countries to develop and apply bioscience research and expertise to produce technologies that help resource-poor farmers secure their assets, improve their productivity and income and increase their market opportunities. It provides a focal point for the African scientific community to address agricultural, health and environmental related problems. A second component of the project provides funding to the NEPAD Secretariat to support the establishment of three other networks of centers of excellence.</p>	<p>Canada</p>	<p>John McDermott  Deputy Director General - Research  International Livestock Research Institute (ILRI)</p>	<p>Implemented by the International Livestock Research Institute (ILRI) and the NEPAD Secretariat</p>		<p>23 400 000</p>	

Forests (see also climate change)							
Action Title	Description & results	Main donor	Contact	Others involved	Start/end year	Budget(US\$)	Remarks (links to PPCR)
Provincial Forestry Action Programme	<p>Community members enjoying user rights and receive economic and social benefits from forest management</p> <p>Replicable Joint Forestry Management model for collaborative forest management in Zambia</p> <p>Capacity and resources of Forestry Department strengthened</p> <p>Luapula, Copperbelt and Southern Provinces</p>	Finland	Forestry Dept. - Project Coordinating Unit	Forestry dept, District Councils; Traditional leadership; local communities	2000-2009	8 640 000	
Support to Imiti Ikula Empanga Environment and Development Organisation	<p>Environmental awareness raised, culture of tree planting inculcated, capacities in nursery production, NTFPs enhanced, shift away from chitemene.</p> <p>Chinsali and Isoka</p>	Finland	Chilifya Kabwepwe, Exec.Director	Communities in Chinsali and Isoka	2008-2009	63 450	

Poverty alleviation of Mongu District population through sustainable forest management and utilization	<p>implement activities for a local economy improvement included the construction of a saw-mill and oil expeller system for jatropha curcas;</p> <p>realization of a control system at every level aimed at coaching for the correct management of the forest;</p> <p>implementation of a system to facilitate the reproduction of natural resources.</p> <p>Mongu district</p>	Italy	NGO Ce.L.I.M., Milan (Italy)	the Diocese of Mongu Development Centre	2009-2011	861 561	
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Renewable energy							
Action Title	Description & results	Main donor	Contact	Others involved	Start/end year	Budget(US\$)	Remarks (links to PPCR)
Regional Energy and Environment Partnership in support of public-private partnerships in renewable energies	<p>In process</p> <p>TBC:Botswana, Kenya, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia</p>	Finland	tbc	MEWD, MTENR	2009-2011	8 100 000	

Capacity Development for Sustainable Renewable Energy Management and Utilisation	Enhancing national capacities for sustainable management and utilization of renewable energy.  developing / reviewing policies and regulatory frameworks and  developing and implementing strategy for promoting the production and use of renewable energy, with women and youth being special targets.	UNDP	Amos Muchanga	MEWD	2007-2009	1 000 000	
Renewable energy	Project global environment objective, in line with GEF Operational Program No.6, is to remove barriers to renewable energy technologies to help mitigate greenhouse gas emissions	World Bank	Bobak Rezaian	Marcus Wishart , MEWD/REA	2009-2014	4 500 000	

Water resources and supply							
Action Title	Description & results	Main donor	Contact	Others involved	Start/end year	Budget(US\$)	Remarks (links to PPCR)

Water supply and Sanitation	<p>Water supply and Sanitation</p> <p>Increased capacity (of MLGH/ DISS/RWSSU) to provide technical support to districts in connection with planning and implementation of decentralized functions in RWSS. Capacity building of the DISS and respective districts councils with the help of technical assistance.</p> <p>A National programme for RWSS established, operating and functioning on SWAp principles.</p> <p>Increased access by rural population in target districts to potable water and sanitation</p> <p>Peri-Urban</p> <p>Devolution Trust Fund strengthened and supported to provide the basis for funding of peri-urban WSS activities.</p> <p>Western Water and Sewerage Company operations are efficient and effective to deliver reliable and affordable services. Financial and technical assistance has been provided to the company</p> <p>12 districts, including</p> <p>Chongwe</p> <p>Kafue</p> <p>Kalomo</p>	Denmark	<p>Peter Sievers</p> <p>Water supply and Sanitation sector</p> <p>RDE</p> <p>254277</p> <p>Moffat Mwanza</p> <p>Catherine L. Tembo</p>	Sector programme with other CPs	2006 to 2010	45 000 000	
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Integrated Water Resource Management	<p>An institutional framework for allocation of water and development of water resources established.</p> <p>Rehabilitation and upgrading of parts of the monitoring network</p> <p>Capacity built through University of Zambia</p> <p>A decentralised management framework established in the Middle Kafue Catchment.</p> <p>Investments in small dams and weirs</p> <p>Lower Kafue Basin (Kalomo, Itezhi Tezhi, Namwala, Kafue districts)</p>	Denmark					
Support to the National Rural Water Supply and Sanitation	Sector programme, see above	Ireland	Gerry Cunningham	With other CPs	Ongoing	2 025 000 per annum	
Support for peri-urban water supply in Northern Province	Sector programme, see above (Northern Province)	Ireland	Gerry Cunningham	With other CPs	2007-2009	1 350 000 per annum	
Integrated Water Resources Management	Access to safe drinking water for urban and rural poor population (Support to Water Sector Reform, NUWSSP, NRWSSP etc.) - within the focal area of bilateral cooperation	Germany	Helmut Lang, Focal Area Coordinator		Ongoing		



Groundwater Resources for Southern Province	Development of groundwater database and hydro-geological maps; development of a management programme for highly vulnerable groundwater resources  Southern Province/Kafue Basin/Lusaka	Germany	Roland Bäumle, BGR		ongoing		
Zambezi River Action Programme (ZACPRO)	Institutional framework for the management of the Zambezi river basin developed.  Interim Secretariat established  Implementation of 3 year plan  Enhanced management information system Locations: Angola, Malawi, Namibia, Tanzania, Mozambique Botswana, Zimbabwe, Zambia	Norway	Odd Eirik Arnesen	Sweden  Denmark  Norway	2006-2009	1 200 000	
Country water Resources Assistance Strategy		World Bank	Marcus Wishart	MEWD: Mr. B.Chundu; Mr.A.Hussen; Mr.A. Mondoka	2008/Jan 2009		
Water Resources Development Project		World Bank	Marcus Wishart	MEWD: Mr. B.Chundu; Mr.A.Hussen; Mr.A. Mondoka	Planned 2010-2013	TBC	

National Rural Water Supply and Sanitation Programme – Sector Swap – With signed MOU containing MDG targets	Sector programme, see above	World Bank	MLGH	With other CPs	2006 -2015	220 000 000	
The Global Water Partnership (GWP)	Assisting Kenya, Malawi, Mali, Senegal, and Zambia to develop national integrated water resources management plans. It also supports the integration of water issues into poverty reduction strategies and assists in the development of existing and new GWP partnerships at the regional and country level.	Canada	Jean-Stéphane Couture, > Senior Program Officer, JEANSTEPHANE_COUTURE@acdica.gc.ca		2003 – 2009 (terminating)		

Pollution, waste, chemicals and biosafety							
Action Title	Description & results	Main donor	Contact	Others involved	Start/end year	Budget(US\$)	Remarks (links to PPCR)
Lusaka waste Management Project	<p>Establishment of a sustainable waste management system in Lusaka.</p> <p>An operational waste management system based on public private and community partnerships has been taken to scale to cover the entire city.</p> <p>Establishment of a properly engineered sanitary disposal site.</p>	Denmark	Litumelo Mate, Danish Embassy; Michael Kabungo and William Ndhlovu, Lusaka City Council	Lusaka City Council	2001 to 2008	15 000 000	
Capacity Building for the Implementation of the National Biotechnology and Biosafety Policy and the Cartagena Protocol – Extension phase	<p>Review and finalisation of draft biosafety Bill</p> <p>Developing human resources in biotechnology and biosafety</p> <p>Capacity to detect and monitor GMOs</p> <p>Public awareness on biotechnology and biosafety</p> <p>National information systems on biotechnology developed.</p>	Norway	Trond Løvdal		2005 - 2008	160 000	

Sound Management of Chemicals	<p>qualification of the links between priority major chemical management problem areas and human health and environmental quality</p> <p>identifying areas in need of strengthening</p> <p>plan for strengthening the national SMC governance regime</p> <p>quantify costs of inaction/benefits of action</p> <p>propose a path forward for the country to mainstream the highest priority SMC issues</p>	UNDP	Winnie Musonda	ECZ	2006-2010	198 420	
Terminal Phase-out Management Plan	<p>Phasing out the consumption of the remaining chlorofluorocarbons (CFCs) in the country by January 1, 2010. The project utilizes a combination of regulatory, capacity building, investment and awareness measures to meet the Government of Zambia's obligations under the Montreal Protocol.</p>	UNDP	Winnie Musonda	ECZ	2008-2009	109 000	

Other interventions: Multi-thematic, sector-wide and crosscutting							
Action Title	Description & results	Main donor	Contact	Others involved	Start/end year	Budget(US\$)	Remarks (links to PPCR)
Environment and Natural Resources Management and Mainstreaming Programme (ENRMMP) (Capacity Development component and interim Environment Fund)	<p>MTENR restructured, trained and equipped to plan and manage its core functions</p> <p>Mainstreaming strategy including tools developed, tested and implemented.</p> <p>Establishment of environmental focal points, preparation of environment and natural resources policy papers, systematic participation in environment and natural resources fora and internalised budgets for environmental management.</p> <p>Establishing a permanent Environmental Fund for improving, protecting or sustainably utilizing the environmental and natural resources that contribute to the livelihood of poor people. A component of ENRMMP</p>	Denmark Finland	Litumelo Mate Elizabeth Ndhlovu	MTENR	2009-2012	14 850 000 Denmark 12 150 000 Finland	***Please see the email

Integrated Land Use Assessment Project (ILUA)	Capacity building for Forestry Department and Land Use institutions to undertake ILUAs reinforced  Permanent sample plots established  First field survey completed  ILUA final reports on findings  Land use / land cover map  ILUA final reports on policy analysis  ILUA phase I completed, ILUA II under planning.	Finland/ FAO	Forestry Department	MACO, CSO, Ministry of Lands (Survey Department); ZAWA; Local Authorities  FAO	2007-2008  + ILUA II 2010-	412 000	
Institutional cooperation between Finnish Ministry of Environment and Ministry of Tourism, Environment and Natural Resources	(in planning)	Finland	MTENR/PID	MTENR, ECZ, ZAWA	2009-tbc	tbc	

GEF Small Grants	The programme allocates grants of up to USD 50000 for national non-governmental and community-based organizations towards climate change abatement, conservation of biodiversity, protection of international waters, reduction of the impact of persistent organic pollutants and prevention of land degradation while generating sustainable livelihoods.	UNDP	Gertrude Chiholyonga , Keepers Zambia Foundation	MTENR, Keepers Zambia Foundation	2008-2010	300 000	PPCR can contribute to upscaling small scale projects supporting the adaptive capacity of communities
Civil Society Fund	In planning	Finland/ Denmark			2010-	TBC	

# Annex 5 Aide Memoire

PPCR ZAMBIA FIRST JOINT MISSION NOVEMBER 16-27, 2009  
AIDE MEMOIRE

## Aide Memoire Zambia:

### Joint Mission for the Pilot Program on Climate Resilience (PPCR) November 16 to 27, 2009

#### Introduction



1. The Pilot Program on Climate Resilience (PPCR) is designed to pilot and demonstrate ways to integrate climate risk and resilience into developing countries' core development policies, plans and programmes. Zambia is one of nine countries worldwide and two regional groups selected for participation in the program. The PPCR in Zambia will be implemented by Government and it is expected to be financed through the Government budget, the Multilateral Development Banks and other development partners in cooperation with the United Nations Development Programme (UNDP), and the Department for International Development (DFID).
2. A meeting of Pilot Countries in Washington D.C. on 26-27 October 2009 concluded that the PPCR should: i) be tailored to individual country needs; ii) build on existing in-country processes; iii) reflect a cross-cutting solution across sectors; iv) offer an opportunity for donor coordination; v) build and share adaption knowledge and vi) move from policy to legislation to implementation. These principles will guide the formulation of the PPCR proposal.
3. A mission led by the Ministry of Finance and National Planning (MoFNP), with the Africa Development Bank (AfDB), the World Bank (WB), the International Finance Corporation (IFC), UNDP and DFID as members took place from November 16 to 30, 2009. The terms of reference and mission composition are attached as Annex to the Proposal.
4. The PPCR is structured in two Phases. Phase 1 involves formulating a Strategic Program for Climate Resilience to integrate Climate Resilience into Core Development Plans, Budgets and Investments. Phase 2 will focus on the investment in the selected sectors and also support on-the-ground-ground adaptation activities by reinforcing climate resilience in priority sectors selected in Phase 1. In line with the PPCR principles of donor harmonization and complementarity with existing efforts, Phase 2 would not necessarily lead to a new program, but might involve support to a Programmatic Investment Framework on Climate Resilience.
5. The specific objectives of the mission were the following:
  - a. review progress in addressing climate risks;
  - b. review policies, plans, and strategies and other relevant documents to assess the extent to which they take account of climate risks; and
  - c. provide a platform for joint work of the cooperating partners, the private sector and NGOs to support government in the formulation of an agreed strategic approach and investment program for integrating climate resilience into core national and sub-national development and key sector strategies and actions.
6. The findings and recommendations of this draft aide memoire were discussed at a wrap-up meeting chaired by the MoFNP on November 30, 2009.

#### PPCR Participatory Process Followed

9. The Joint Mission marked the initial preparation of the PPCR process. Prior to the commencement of the Joint Mission, the lead Government agency which is the MoFNP, engaged two consultants to prepare a stocktaking analysis and carry out initial consultations with stakeholders (a process that took two weeks, from November 2-14, 2009). This initial process involved:
  - Stocktaking of relevant information on climate resilience,
  - Compilation of all country level programs and activities that are planned or already in place, relevant to the (PPCR)
  - Initial consultation with relevant stakeholders.
10. Consequently, the Joint Mission has been forward-looking and focused on the following main activities:
  - **Analysis** of stocktaking and key documents
  - **Engagement** of key stakeholders
  - **Agreement on priority sectors and activities** for Phase 1 focus
  - Advance the preparation of the **Phase I proposal**
11. It has been reported during the presentation of the results of the FNDP that Zambia "recorded reduced poverty levels from 80% to 64 % midway through the FNDP" and that both Ministries of Health and Education were on the way to achieve the Millennium Development Goals (MDGs). The mission held an initial 2 day consultation workshop from November 16 – 17, 2009 with a range of Government entities, civil society organizations, limited private sector and cooperating partners. The Mission organized follow-up consultation meetings with representatives of these groups to discuss their recommendations, suggestions for involvement in the PPCR, and potential concerns. The mission has continued with more intensive consultations with key stakeholders in the priority sectors, aiming at helping build the elements of the proposal for Phase I. Sectoral discussions have been under the responsibility of mission specialists. In addition, each thematic area of Phase I (e.g. analysis, planning and strategy) and of potentially Phase 2 components (agriculture, infrastructure) have been under the responsibility of one of the senior joint mission members.

#### Context for Climate Risk Management (CRM) in Zambia (Summary of Stock-Taking and Initial Consultations)

7. The stock-taking exercise led by two national consultants has informed the mission of the following:

 30<sup>th</sup> OF NOVEMBER 2009, LUSAKA, ZAMBIA 



PPCR ZAMBIA FIRST JOINT MISSION NOVEMBER 16-27, 2009  
AIDE MEMOIRE

- Zambia's vulnerability to climate change is due to, among other things, the high dependence on the country's economy on climate-sensitive sectors such as agriculture and natural resources.
  - Zambia is already experiencing climate change and variability which has an impact on human development, in particular at the local level.
  - These trends are expected to intensify in the future as projected temperatures for Southern Africa are expected to increase by a minimum of 2.0° degrees by 2070. Climate variability is expected to intensify in the future.
  - Zambia has 3 Agro-ecological Regions all of which will be affected, but region 1 remains the most vulnerable zone (the southern province was the bread basket of Zambia as it always boasted of bumper harvests but the situation has changed because of natural disasters).
  - Zambia has completed an analysis of historical climate change trends. Gaps remain in future climate change scenarios for the country.
  - The early warning system remains a major weakness. Sectoral impact analyses have been comprehensive (though not necessarily integrated), and the attribution with respect to climate change has not always been clear. Further economic analysis is also needed.
  - As pointed out by stakeholder consultations, there is a need for stronger coordination amongst different Government agencies involved in climate change adaptation and disaster risk management. Internal dialogue is proceeding with a view to finding a solution.
8. Vulnerability baseline and participatory assessments are on-going. However, decision makers have not sufficiently taken into account climate change impact and adaptation strategies.

**Mission findings**

12. The consultative process identified opportunities and gaps to mainstream climate resilience into priority sectors and agreed on four (4) priority areas of work and activities to be implemented during phase 1 in Phase 1 and on the outline on the preparation for Phase 2.

13. **The priority activities for Phase 1** with a planned duration of 12- - 18 months are:

*I: Mainstreaming of climate change, and in particular climate resilience in the Sixth National Development Plan (SNDP) and into operational plans and 2011 budgets of key sectoral ministries such as Agriculture and Co-operatives (MACO), Tourism, Environment and Natural Resources, (MTENR), Local Government and Housing (MLGH), Works and Supply (MW&S), Communication and Transport (MC&T), Health (MoH), Education (MoE), Energy and Water Development, (MEWD). A key performance for this activity would be that climate change, and in particular climate resilience, features prominently in the SNDP and is integrated/mainstreamed into development planning in the priority Sector Plans for the period 2011 – 2015 and budget items allocated for Climate Resilience/Climate Proofing. The mainstreaming of climate change should build on ongoing mainstreaming initiatives such as the Environment and Natural Resources Management and Mainstreaming Programme and work to develop the climate change strategy, policy and legal framework. Another key output is to prepare a mainstreaming guide or manual to help sector ministries in the process during preparation of the SNDP.*



*II: Strengthening and harmonisation of organisational and coordination functions between sectors and line ministries working on climate change and sustainable development issues. The mission recognises that it is up to the Government of Zambia to decide on the best institutional arrangements leading to efficient coordination and harmonisation between the stakeholders in meeting the objectives of the Program. The mission also recognises the ongoing work in DMMU and MTENR which could provide variable information for this process. The next joint mission in 2010 will verify, by using performance based indicators, the existence of an empowered structure, for sustainability and continuity purposes, that can provide adequate technical inputs and efficient coordination mechanisms for climate change, including climate risk and resilience, for Phase 2.*

*III: Improved information for Decision-Makers. This component aims to strengthen the targeted information available to decision makers and the general public on climate change. It would directly focus and support the mainstreaming needs of Component 1, as well as ongoing trends and the resulting impacts, thus enabling them to make more informed decisions. One information stream will focus on monitoring climate, short- to medium-term (less than 6 months) forecasting and providing information on the resulting impacts in agriculture, water (flooding) and other identified sectors, including economic analysis.*

*IV: Targeted awareness and communication. This component aims to strengthen public awareness of the critical importance of climate change adaptation in development processes and strengthening targeted information available to decision-makers, contributing to the formulation of national plans. This component would directly focus and support the mainstreaming needs of Component 1. The key audience would be policy makers in targeted sectors (e.g. Agriculture, Water, Local Government, and Environment), private sector (Commerce and Industry), legislators (parliamentarians and house of chiefs, municipal leaders), Non Governmental Organisations (NGO's) and Civil Society Organisations (CSO's), the media and academia.*

14. A tentative budget as well as a schedule for the activities has been elaborated by the partners led by MoFNP. A draft proposal has been discussed at length and prepared by all partners to be presented to the PPCR board during the month of December 2009.

15. **Preparation of Phase 2 work programme.** During Phase 1, considerable effort will be dedicated to preparing a Strategic Program for Climate Resilience. Through the mainstreaming, institutional strengthening, analytical and awareness efforts, in addition to the joint collaborative efforts of all key development partners, it is expected that by the end of Phase 1 Zambia will have identified the roles of development partners in an Integrated Program for Climate Resilience (programmatic approach for adaptation), of which the PPCR will finance a portion. Zambia will, however, require much more funding than what the PPCR can bring to become more climate resilient. The PPCR investment project will, therefore, need to be harmonized with other funding brought by the Government of Zambia,

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private sector and other development partners. Together, they will form an Integrated Programmatic Framework for Climate Resilience. As such, preparation for Phase 2 should result in two major outputs:

- A financing framework for a National Program for Climate Resilience – specifying the complementary role of the PPCR pilot investment relative to that of other funding,
- The design of the Pilot PPCR investment for Phase 2

16. During Phase 2, the pilot PPCR would focus on priority areas within the Zambezi River Basin. The priority project areas will be identified and based on the following:

- Win-win criteria (highest probability of success, high local commitment, access, etc).
- High vulnerability (as revealed by sectoral and regional vulnerability indices)
- Complementarity vis-à-vis other funding/development efforts

17. MoFNP would establish, during Phase 1, a preparation team and hire technical assistance to prepare the pilots. To the maximum extent possible, existing mechanisms of decentralized or de-concentrated budgeting will be explored to promote participatory adaptation at the local level. The principle should be to encourage local adaptive responsive, both in soft adaptation (sustainable agriculture production and ecosystems) as well as in hard, engineering solutions (climate resilient infrastructure) – while at the same time providing local communities with the support and knowledge needed to adapt to climate change.

18. As part of preparation for Phase 2, guiding principles have been used to select - a geographically restricted but representative demonstration area, to show integrated solutions for climate resilience and adaptation for the most vulnerable populations and clearly determined sensitive sectors and thematic areas (such as food security) -. Based on these criteria, the pilot sites off the Zambezi basin/watershed have been prioritized (that comprise agro- ecological regions 1 and 2). It is not meant here to describe in details the 4 components that were identified but to present them as part of the process of the (PPCR) and as concepts. These are:

*I. Reinforcing early warning systems:* This component will build upon the ongoing work in this area and recommendations of the workshops, namely the limitations in information and data in many parts of Zambia for prediction and prevention, as well as the need to install a number of agro-meteorological and hydrological stations. Besides improving the range of available ground observations there is a clear need to improve the integration of other technologies, such as remote sensing and GIS, as well as the models used to forecast climate (at seasonal timescales) and assess the resulting sectoral impacts e.g. crop and flood risk modelling/assessments. As well as improvements in deployed technologies, it will be necessary to improve the flow of information between different ministries and institutions, taking care that models, data and information is integrated in the best possible manner, and that the end products/information reach the DMMU in time to allow effective preparations and planning.

*II. Agriculture production systems and ecosystems:* This component will build on going initiatives in adaptation to will strengthen the adaptive capacity and livelihood in agriculture, fisheries, livestock, natural resources, and natural ecosystems in the most affected areas of the Zambezi River Basin, focusing on sustainable agriculture production and natural ecosystems' outcomes. Based on the results and findings of detailed analytical studies, priority sensitive and vulnerable targets (areas, farm blocks, integrated farm assets and resources) would be selected and targeted to make them climate resilient. The concept behind this component is to work in an integrated manner in a large agricultural and natural resources area where basic infrastructure for agriculture such as trunk roads, bridges, feeder roads, electricity and community irrigation infrastructure like dams and communication facilities as well as agro-met stations, can be "adapted" for climate variability and climate change. In this initiative small scale agriculture will be targeted as small scale holders are the ones most vulnerable to climate change. By prodding small-scale farmers to adopt conservation agriculture and farming for higher yields and soils improvement, resilience to future challenges imposed by climate change would be enhanced.

*III. Climate Resilient Infrastructure:* This component will integrate climate resilience concerns in infrastructure planning and investments to reduce the vulnerability of infrastructure to climate change impacts. Infrastructure is in many forms and includes, transport (roads, waterways, railways and pipelines), communication, water and sanitation, energy, recreation, housing and institutional infrastructure. Based on the findings of the assessment on risk levels (return periods) for various infrastructure such as transport, dams, irrigation systems, power generation facilities, and buildings, regional and national standards and codes of practice that need to be adapted to climate change resilience such as the SATTC (in full) Standards on the design of roads and bridges, and standards that are affected by climate change such as those on construction material (bitumen, etc.) will be upgraded including developing climate resilient infrastructure standards and specifications.

*IV. Program Management:* This component will serve to manage the entire programme and will monitor all the activities as well as assume financial / management and procurement functions.

#### Recommendations and Conclusions

19. The mission has formulated the following recommendations:

- It has been agreed that the Ministry of Finance and National Planning will coordinate the implementation of Phase 1, namely mainstreaming in the SNDP and institutional harmonisation being the two predominant activities: the MoFNP will work in close collaboration with relevant Ministries and units, including but not limited to (MTENR, CCFU) and DMMU.
- For Phase 2, it has been agreed that the Government of Zambia would, by the time of the next Joint Mission, determine the appropriate institutional arrangements for climate change adaptation in Zambia which would be acceptable to national stakeholders, and conform to the principles of sustainability and best practices, lead and coordinate the agenda of CC in Zambia. The mission noted that there were many institutional players and that there are various possible scenarios for the institutional and management arrangements to assume the institutional requirements of the CC and Climate Risk Management agenda.



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- An outline of the activities for Phase 2 and its components have been pre-identified (4 components including project's management). Preparation for Phase 2 will use the same participatory process as in Phase 1, namely consultations with stakeholders and meetings with concerned, vulnerable parties, partners and stakeholders.
- Activities in Phase 2 will adopt a sectoral approach as adaptation work is best suited with the line and sectoral ministries and the SAGs have been guiding the process of other donors' initiatives for adaptation in the priority sectors so as to complement existing projects and capitalise on the comparative advantages of the different partner institutions.
- The PPCR will work in collaboration with the MoFNP and line ministries in mainstreaming climate risk concerns into national and sectoral policies and in developing related monitoring and evaluation indicators. Phase 1 of the PPCR will be timed with the preparation of the SNDP.
- The PPCR will also provide sector-specific support on mainstreaming to individual line ministries including in sectoral policies and plans and in the identification and technical design of individual projects. Close dialogue will be maintained with other planned initiatives with mainstreaming objectives, including that PPCR activities complement and build on these undertakings.
- During Phase 1 private sector and civil societies' inputs will be sought comprehensively. Private sector input in particular will be sought during the implementation of Phase 1 in view of supporting and Phase2 investments. It is noted that the MoFNP has a new Public – Private Partnerships Unit and that a PPP policy was promulgated in 2007 and launched in 2008, while the PPP Act was enacted in August 2009.
- The PPCR could make an important contribution in strengthening commitment and attention to CC adaptation by the MoFNP and others, via awareness - raising around the potential consequences of climate change for socio-economic development, including poverty reduction, long-term sustainable growth, macroeconomic performance and economic returns to individual development projects.
- In the longer-term, this awareness raising initiative to line ministries will influence their budgetary allocations by making the case for particular budgetary requests and thus it is important that they, too, can justify requests for financial resources to support climate change adaptation costs in the language of MoFNP.
- The PPCR will work in collaboration with MoFNP and other concerned government agencies in identifying and utilizing windows of opportunity to build climate risk concerns into the project preparation process, including relevant appraisal tools such as environmental impact assessment, and into related criteria for prioritizing projects for inclusion in the SNDP.

Lusaka, 30<sup>th</sup> November, 2009

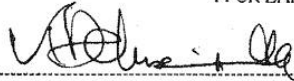


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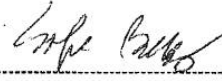
For the Government of Zambia:  
Permanent Secretary,  
Ministry of Finance and National Planning



For the Government of Zambia:  
Director Economic Management  
Ministry of Finance and National Planning



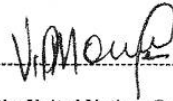
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