

## 12.0 Zambia

ASARECA	Association for Strengthening Agriculture Research in Eastern and Central Africa
BMZ	Bundesministeriums für Umwelt, Naturschutz und Reaktorischerheit/ Ministry for Economic Cooperation and Development (Germany)
CCAA	Climate Change Adaptation in Africa program
CEEPA	Centre for Environmental Economics and Policy in Africa
CGIAR	Consultative Group on International Agriculture Research
DFID	Department for International Development (United Kingdom)
GEF	Global Environment Facility
GWP	Global Water Partnership
FANPRAN	Food, Agriculture, and Natural Resources Policy Analysis Network
ICRISAT	International Crop Research Institute for the Semi-Arid Tropics
IDRC	International Development Research Centre
IFPRI	International Food Policy Research Institute
IFRC	International Federation of Red Cross and Red Crescent Societies
LDCF	Least Developed Country Fund
NAPA	National Adaptation Programme of Action
MTENR	Ministry of Tourism, Environment and Natural Resources
PPCR	Pilot Program on Climate Resilience
PIK	Potsdam Institute for Climate Impact Research
SIDA	Swedish International Development Cooperation Agency
SEI	Stockholm Environment Institute
SCCF	Special Climate Change Fund
UNDP	United Nations Development Programme
UNITAR	United Nations Institute for Training and Research
ZALF	Leibniz-Centre for Agricultural Landscape Research

Zambia is a landlocked country in southern Africa that shares its borders with a number of countries: Angola, Botswana, the Democratic Republic of Congo, Malawi, Mozambique, Namibia, Tanzania and Zimbabwe. Of the country's 9.8 million inhabitants, nearly 40 per cent live in urban areas, making it one of the most urbanized in sub-Saharan Africa (MTENR, 2007; MTENR, 2002). Zambia holds 40 per cent of southern Africa's water resources (CEEPA, 2006; MTENR, 2007; MTENR, 2002). This includes the marshy wetlands of northern Zambia that are the source for the Zambezi River, the fourth largest river in Africa, the river basin of which extends into six sub-Saharan African countries (IFRC, 2009).

Around 12 per cent of Zambia's land is arable, with major crops including maize, sorghum, millet, rice, wheat, cassava and groundnuts (CEEPA, 2006). Approximately 67 per cent of Zambia's population depends on rain-fed agriculture for their livelihoods, and growth in this sector is stagnant (CEEPA, 2006; MTENR, 2007; MTENR, 2002). Environmental issues being faced by the country include air pollution in mining towns, water pollution, substandard sanitation, wildlife depletion, land degradation and biodiversity loss (MTENR, 2007).

#### **A. Adaptation Needs and Priorities**

Zambia's climate is sub-tropic and comprised of three distinct seasons: a hot and dry season between mid-August and November, a cool dry season from May to mid-August, and a rainy season from November to April (MTENR, 2007). Rainfall in the country is impacted by the Inter-Tropical Convergence zone, and therefore varies considerably from year to year (McSweeney et al, 2009). Rainfall patterns also vary across the country, leading to the formation of three agro-ecological regions (MTENR, 2007). Region I is a low rainfall area in the country's southern and western provinces that is at high risk of droughts. Region II experiences medium rainfall and 87 per cent of the land in this region is arable. Region III experiences the highest annual rainfall in the country, and only 50 per cent of the land is cultivatable due to highly leached soil (MTENR, 2007).

The country's National Adaptation Programme of Action (NAPA) notes that drought conditions in Zambia have been on the rise over the past few decades, with the drought of 1991/92 being the most severe. In addition, the country has experienced an increased frequency of floods, and farmers in its eastern and southern provinces have noted a general shortening of the growing season (CEEPA, 2006; MTENR, 2007). Recent analysis indicates that the average rate of hot days per year increased by 43 per cent between 1960 and 2003, while the number of cold days declined by 22 per cent (McSweeney et al, 2009).

As the process of global climate change proceeds, Zambia is anticipated to experience an increase in temperature within the range of 1.2 to 3.4°C by the 2060s, and 1.6 to 5.5°C by the 2090s, with all projections pointing to a substantial increase in the number of hot days and

nights (McSweeney et al, 2009). Zambia's NAPA uses a Global Circulation Model to anticipate the potential impacts of climate change on the country. With respect to precipitation, it is projected that the country will experience differentiated impacts by region. While Region I will only experience a marginal increase in rainfall, Regions II and III can anticipate heavier annual precipitation under future climate conditions (MTENR, 2007). Depending on the impacts of climate change in these different zones, certain crop yields may increase while others could decrease. Historically, increased precipitation has been associated with increased farm revenues (CEEPA, 2006; MTENR, 2002).

Zambia's NAPA lists the anticipated impacts of climate change by sector (MTENR, 2007):

- *Agriculture and food security*: The most groups suggested as being most vulnerable to the impacts of climate change are those that depend upon rain-fed agriculture for their livelihoods. The main threats to this sector include excessive precipitation, erosion, increased frequency of droughts, shortening of the growing season, and flash floods.
- *Human health*: Increased incidence of droughts and crop failures may cause malnutrition, and increased prevalence of cholera and malaria may also occur.
- *Natural resources, wildlife, and forestry*: Droughts are anticipated to negatively affect wildlife habitat and the ability of forest resources to generate, and the potential for greater scarcity of water could undermine wildlife health.
- *Water and energy*: Groundwater resources are anticipated to be negatively impacted by drought, and drying of rivers could occur.

Given these anticipated impacts, the NAPA lists a number of high priority adaptation actions for the country, as listed in Table 3. The list prioritizes actions such as the strengthening of early warning systems, economic diversification, adaptation to drought, the management of critical habitats, promotion of forest regeneration, and adaptive land use practices (MTENR, 2007). Specifically within the agriculture sector, priority adaptation needs for the country include: addressing vulnerability in the agriculture sector through the development of new crop varieties that mature faster and are heat resistant; diversified crops that withstand drought and higher temperatures, and land use rotation between crop and livestock to improve soil quality (CEEPA, 2006). There is also a need to improve human health by reducing vulnerability of drought and floods (MTENR, 2007). Zambia's NAPA also discusses some of the barriers that may prohibit the implementation of adaptation actions, including lack of financial resources, lack of clear policy frameworks, inadequate capacity at various levels, underdeveloped public awareness of the issue, and lack of private sector involvement.

## B. National Level Policies and Strategic Documents

The government of Zambia has established a Climate Change Facilitation Unit within the Ministry of Tourism, Environment and Natural Resources that is in the process of developing a National Climate Change Response Strategy in collaboration with the United Nations Development Programme (UNDP) (METNR and UNDP, 2010). A wide range of stakeholders in Zambia are being involved in the development of this policy. The strategy is anticipated to build on and reinforce the priority adaptation actions identified through the country's NAPA, and to include a national institutional and implementation framework covering mainstreaming, mitigation, adaptation, research, capacity building and awareness raising, including priority actions for various sectors of the economy (METNR and UNDP, 2010).

**Table 1: Key Government Policies and Reports reflecting Adaptation Needs, Priorities and Planned Actions**

Name of Policy Action	Government Division Responsible	Status	Sector(s) of Focus	Summary description
1. Initial National Communication under the UNFCCC <sup>258</sup>	Ministry of Tourism, Environment and Natural Resources	Submitted in 2002	Multi-sectoral	This document provides an overview of Zambia's national circumstances including its greenhouse gas emissions profile, vulnerability to adaptation, systematic observations and research capacity, and outlines the way the country may address climate change.
2. National Adaptation Programme of Action <sup>259</sup>	Ministry of Tourism, Environment and Natural Resources	Submitted in 2007	Multi-sectoral	This document provides an overview of Zambia's national circumstances including current climate conditions, assesses the country's vulnerabilities to climate change, provides an overview of climate projections, and outlines priority adaptation projects.
3. National Climate Change Response Strategy	Ministry of Tourism, Environment and Natural Resources	In development	Multi-sectoral	This policy is anticipated to comprise a national institutional and implementation framework covering mitigation, adaptation, research, capacity building, and awareness raising.
4. National Development Plan 2011 – 2015 <sup>260</sup>	Ministry of Finance and National Planning	Released in 2011	Multi-sectoral	Among its objectives, strategies and programs, the government seeks to strengthen policy and legal framework surrounding environmental management within various sectors, including agriculture, health, education, energy, water, land and infrastructure, to appropriately adapt to climate change. Also, the Zambian government aims to support disaster risk management in priority sectors including the development of design

<sup>258</sup> UNFCCC, [http://unfccc.int/essential\\_background/library/items/3599.php?rec=j&piref=4496#beg](http://unfccc.int/essential_background/library/items/3599.php?rec=j&piref=4496#beg)

<sup>259</sup> UNFCCC, <http://unfccc.int/resource/docs/napa/zmb01.pdf>

<sup>260</sup> World Bank, [http://siteresources.worldbank.org/INTZAMBIA/Resources/SNDP\\_Final\\_Draft\\_20\\_01\\_2011.pdf](http://siteresources.worldbank.org/INTZAMBIA/Resources/SNDP_Final_Draft_20_01_2011.pdf)

Name of Policy Action	Government Division Responsible	Status	Sector(s) of Focus	Summary description
				standards and codes of practice for infrastructure adapted to climate change resilience.

### C. Current Adaptation Action

When compared to other countries in southern Africa, a moderate number of discrete adaptation projects and programs are currently being implemented in Zambia. The majority of these projects emphasize capacity building, research, awareness raising and policy formation and integration in the agriculture, water sectors and governance sectors. Some work is also occurring in the areas of disaster risk management, enhancing climate information services, rural landscapes and ecosystem conservation.

Prominent current adaptation actions include the project “Adaptation to the Effects of Drought and Climate Change in Agro-ecological Zone I and II in Zambia” financed through the Least Developed Country Fund (LDCF); it is a project concept identified in the country’s NAPA. The country is also participating in the “Pilot Program for Climate Resilience” funded by the Strategic Climate Fund and “Groundwater in sub-Saharan Africa: Implications for food security and livelihoods” funded by the Alliance for a Green Revolution in Africa. The greatest number of adaptation projects in Zambia are being financed by the “Climate Change Adaptation in Africa” (CCAA) program established by United Kingdom Department for International Development (DFID) and the International Development Research Centre (IDRC), and by the Government of Germany.

**Table 2: Current Adaptation Projects and Programs active in Zambia**

Name	Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
<b>National Action</b>							
1. Lyambai Vulnerability and Adaptation Project <sup>261</sup>	This project is focused on four pilot action villages near the eastern margin of the floodplain in the Upper Zambezi Valley in western Zambia. The project will assess increasing climate related vulnerability and identify possible adaptation strategies, develop strategies and plans for the	SEI; UNITAR	Zambezi Valley Development Initiative	Assessment; Capacity building Field implementation	2007 - ?	Rural areas	Western Zambia

<sup>261</sup> ZVDI, <http://www.zvdi.org/projdoc1.pdf>

Name	Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
	adaptation of existing practices, and help to create positive change.						
2. Adaptation to the Effects of Drought and Climate Change in Agro-ecological Zone I and II in Zambia <sup>262</sup>	The objective of this project is to develop adaptive capacity of subsistence farmers and rural communities to withstand climate change in Agro-ecological Regions I and II in Zambia.	LDCF  Budget: US\$13.699 million	UNDP	Capacity building; Community based adaptation	2010 – 2013	Agriculture; Disaster risk management	Agro-ecological regions I and II
<b>Participation in Regional and Global Projects</b>							
3. Building Adaptive Capacity to Cope with Increasing Vulnerability due to Climate Change <sup>263</sup>	To enhance the educational, research and extension competencies to develop strategies that help rural communities adapt to climate variability and change.	DFID and IDRC through the CCAA program	ICRISAT	Knowledge communication Research; Capacity building	2007 – 2010	Agriculture	Regional: Zambia, Zimbabwe
<i>In Zambia: Further information required.</i>							
4. Resilience and the African Smallholder: Enhancing the capacities of communities to adapt to climate change <sup>264</sup>	This project aims to enhance the ability of households, communities and relevant institutions to respond to changing circumstances with a view to reducing future threats to food security and environmental integrity. It will work with farmers to identify improved farming technologies, and translate the results into action plans at the appropriate institutional level whether local or national. Promote adaptation among vulnerable populations through developing comprehensive systems for assessing global changes and the changes of these impacts	DFID and IDRC through the CCAA program  Budget: CND 1,319,800	University of Zimbabwe; International Food Policy Research Institute	Community based adaptation; Policy formation and integration	2007 – 2011	Agriculture	African: Ghana, Mali, Mozambique, Tanzania, Uganda, Zambia, Zimbabwe
<i>In Zambia: Further information required.</i>							

<sup>262</sup> ALM, <http://www.adaptationlearning.net/project/adaptation-effects-drought-and-climate-change-agro-ecological-zone-1-and-2-zambia> and UNDP, [http://www.undp.org.zm/index.php?option=com\\_content&view=article&id=15:adaptation-to-the-effects-of-drought-and-climate-change&catid=4:environment-and-natural-resources&Itemid=6](http://www.undp.org.zm/index.php?option=com_content&view=article&id=15:adaptation-to-the-effects-of-drought-and-climate-change&catid=4:environment-and-natural-resources&Itemid=6) and GEF, <http://www.gefonline.org/projectDetailsSQL.cfm?projID=3689>

<sup>263</sup> ICRISAT, <http://www.icrisat.org/what-we-do/agro-ecosystems/aes-adaption-table.htm>

<sup>264</sup> IDRC, [http://web.idrc.ca/en/ev-118881-201\\_104140-1-IDRC\\_ADM\\_INFO.html](http://web.idrc.ca/en/ev-118881-201_104140-1-IDRC_ADM_INFO.html)

Name	Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
	across disaggregated systems, groups and factors influencing initial state of vulnerability. Provide regional organizations, policy-makers and farmers in sub-Saharan Africa with tools to identify and implement appropriate adaptation strategies.						
5. Strategies for Adapting to Climate Change in Rural Sub-Saharan Africa: Targeting the most vulnerable <sup>265</sup>	“Promote adaptation among vulnerable populations through developing comprehensive systems for assessing global changes and the changes of these impacts across disaggregated systems, groups, and factors influencing initial state of vulnerability. Provide regional organizations, policy-makers and farmers in sub-Saharan Africa with tools to identify and implement appropriate adaptation strategies.”	BMZ  Budget: US\$91,241	IFPRI (lead); ASARECA; FANRPAN; PIK; ZALF	Capacity building; Community based adaptation; Policy formation and integration	2008 – 2011	Rural areas; Agriculture; Government	African: Angola, Botswana, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa, Tanzania, Zambia and Zimbabwe
<i>In Zambia: Further information required.</i>							
6. Community Based Adaptation to Climate Change in Africa <sup>266</sup>	The project involves identifying ways of communicating climate information to poor and vulnerable communities and from communities to other stakeholders. Capacity building and support is being given to NGOs and communities through training to facilitate integration of climate change into their plans and activities. The project will generate	DFID and IDRC through the CCAA program  Budget: CND 1,398,500	African Centre for Technology Studies	Capacity building; Field implementation; Community based adaptation; Research	2008 – 2011	Multi-sectoral	African: Kenya, Malawi, South Africa, Sudan, Tanzania, Uganda, Zambia and Zimbabwe

<sup>265</sup> FANRPAN, <http://www.fanrpan.org/themes/eachproject/?project=2> and [http://www.fanrpan.org/documents/d00539/BMZ\\_Climate\\_Change\\_Adaptation\\_Jun2008.pdf](http://www.fanrpan.org/documents/d00539/BMZ_Climate_Change_Adaptation_Jun2008.pdf)

<sup>266</sup> ACTS, [http://www.acts.or.ke/index.php?option=com\\_content&view=article&id=60&Itemid=53](http://www.acts.or.ke/index.php?option=com_content&view=article&id=60&Itemid=53) and IDRC, [http://www.idrc.ca/cp/ev-83067-201\\_104898-1-IDRC\\_ADM\\_INFO.html](http://www.idrc.ca/cp/ev-83067-201_104898-1-IDRC_ADM_INFO.html)

Name	Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
	information on community-based climate change adaptation, and disseminate the information to inform other stakeholders including researchers, NGOs, national and international policy and decision makers, among others.	<i>In Zambia:</i> Further information required.					
7. Pilot Program for Climate Resilience (PPCR) <sup>267</sup>	PPCR aims to pilot and demonstrate ways in which climate risk and resilience may be integrated into core development planning and implementation in a way that is consistent with poverty reduction and sustainable development goals. In this way, the PPCR provides incentives for scaled-up action and initiates transformational change. The pilot programs and projects implemented under the PPCR are country-led and build on NAPAs and other relevant country studies and strategies.	World Bank's Strategic Climate Fund  <i>Budget:</i> US\$971.75 million pledged as of February 2011	World Bank	Policy formation and integration	2008 – ongoing	Multi-sectoral	Bolivia, Cambodia, Mozambique, Nepal, Niger, Tajikistan, Yemen, Zambia  <i>Regional Programs:</i> Caribbean and Pacific (includes Papua New Guinea, Samoa, Tonga)
		<i>In Zambia:</i> Zambia's participation in the PPCR will focus on mainstreaming climate change issues into national development programs and strategies. Specific objectives include the development of climate data collection and information management systems; building capacity in line ministries, civil society and the private sector; developing research methodologies for crop and livestock production and harvesting/storage systems; etc. It is proposed that Zambia will share lessons learned through the PPCR through COMESA and SADC. <sup>268</sup>					

<sup>267</sup> CIF, <http://www.climatefundsupdate.org/listing/pilot-program-for-climate-resilience>

<sup>268</sup> Further details concerning Zambia's participation in the PPCR can be found here:

[http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/Zambia\\_AcceptanceTemplate1\\_F.pdf](http://www.climateinvestmentfunds.org/cif/sites/climateinvestmentfunds.org/files/Zambia_AcceptanceTemplate1_F.pdf)



Name	Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
8. Groundwater in sub-Saharan Africa: Implications for food security and livelihoods <sup>269</sup>	The project aims to enhance the role of groundwater in providing improved food security and livelihoods in the countries targeted by AGRA. The specific objectives include: assessing groundwater availability and sustainability, including the impacts associated with its use and role in adapting to climate change; identifying opportunities and constraints in using groundwater, and provide advice to investors in groundwater interventions; and developing a groundwater strategy for the region.	Alliance for a Green Revolution in Africa (AGRA)	International Water Management Institute	Research; Policy formation and integration	2009 – 2011	Freshwater supply	<i>African:</i> Burkina Faso, Ethiopia, Ghana, Kenya, Malawi, Mali, Mozambique, Niger, Nigeria, Rwanda, Tanzania, Uganda, Zambia
<i>In Zambia:</i> Further information required.							
9. Regional Science Service Centre for Adaptation to Climate Change and Sustainable Land Management in Southern Africa <sup>270</sup>	The objective is to develop a program that will conduct problem-oriented research in the area of adaptation to climate change and sustainable land management and provide evidence-based advice for all decision-makers and stakeholders. Research will be geared towards filling current regional or local gaps in integrated knowledge. The research will aim to: integrate research on land- and resource management; link science and theory to practice and decision-making; compile, analyze and disseminate best practices.	Germany Federal Ministry of Education and Research		Research; Capacity building; Knowledge communication	2009 – 2012	Ecosystem conservation	<i>Regional:</i> Angola, Botswana, Namibia, South Africa, Zambia
<i>In Zambia:</i> Further information required.							
10. Zambezi River Basin Initiative <sup>271</sup>	In recognition of increasing flood events within the Zambezi River Basin, this project aims to reduce the vulnerability of communities within the basin to extreme weather events and climate change, including	International Foundation of Red Cross and Red Crescent	National Red Cross and Red Crescent societies	Capacity building; Community based adaptation	2009 – 2013	Disaster risk management	<i>Regional:</i> Botswana, Malawi, Mozambique, Namibia,

<sup>269</sup> IWMI, <http://gw-africa.iwmi.org/>

<sup>270</sup> SASSCAL, <http://www.sasscal.org/>

<sup>271</sup> ICP, <http://www.icp-confluence-sadc.org/projects/zambezi-river-basin-initiative-zrbi>

Name	Objectives	Funder(s)	Implementing Agency(s)	Type of project	Duration	Priority Sector(s)	Geographic focus (if any)
	the impact of flooding. Activities include developing community hazard maps, training staff in community disaster preparedness, implementing community based early warning systems, and training in adaptation techniques.	Societies					Zambia Zimbabwe
In Zambia: Further information required.							
11.	Southern Africa Regional Climate Change Program <sup>272</sup>	DFID, SIDA	OneWorld Sustainable Investments	Policy formation and integration; Research	2009 – 2014	Government; Climate information services	African: Angola, Botswana, DRC, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe
In Zambia: Further information required.							

#### D. Proposed Adaptation Action

Through its NAPA, Zambia has identified a number of potential projects in the areas of agriculture, human health, disaster risk management, freshwater, gender, biodiversity and energy. As well, Zambia is one of 10 African countries proposed to participate in the project “Microeconomic Costing of Discrete Adaptation Options in the Agriculture Sector: A Sub-National Level Analysis of the Welfare Gains of Dynamic Adaptation.” Funding for this project has been requested from the Special Climate Change Fund.

<sup>272</sup> Southern Africa Regional Climate Change Program, [http://www.rccp.org.za/index.php?option=com\\_content&view=article&id=68&Itemid=61&lang=en](http://www.rccp.org.za/index.php?option=com_content&view=article&id=68&Itemid=61&lang=en)

**Table 3: Proposed Adaptation Projects and Programs in Zambia**

Name	Objectives	Type of project	Priority Sector(s)	Geographic focus (if any)
<b>Projects identified in Zambia's NAPA</b>				
1. Strengthening of early warning systems to improve services to preparedness and adaptation to climate change in all the sectors (agriculture, health, Natural resources and energy)	The objectives of this project are to develop the use of compatible standards and systems, encompassing relevant data and stations; adopt and disseminate modern technology for data collection, transmission and assessment; to strengthen systematic observations of meteorological and hydrological services; as well as capacity building, education and public awareness.	Capacity building; Research	Disaster risk management	
<b>Notes:</b>				
2. Promotion of alternative sources of livelihoods	Objective: To initiate alternative livelihood sources for communities in and around protected areas Activities: Promotion of Income-Generating Activities and other alternative livelihood sources; setting up micro credit facilities targeting women beneficiaries; and establishment of household woodlots for firewood/poles/timbers	Community based adaptation	Ecosystem conservation	
<b>Notes:</b>				
3. Adaptation of the effects of drought in the context of climate change in agro-ecological region I of Zambia	To reduce the vulnerability of those depending on rainfed agriculture practices to anticipated rainfall shortages in the face of climate change including variability.	Community based adaptation	Agriculture	Agro-ecological zones I and II
<b>Notes:</b> This project has received funding from the LDCF.				
4. Management of critical habitats	The objective of this project is to manage critical habitats in National Parks. Activities include data collection to establish critical habitats in National Parks, to sink boreholes for watering points for animals in the parks, dredge watercourses and lagoons of sand to increase volume of available water to animals, and construct/improve tracks to act as firebreaks in parks.	Field implementation	Biodiversity	National Parks
<b>Notes:</b>				
5. Promote natural regeneration of indigenous forests	The objective of the project is to promote regeneration of indigenous forests. Activities include promotion of natural regeneration of indigenous woodlands, prevention of wild fires by building fire barriers, and promotion of alternative sources of energy.	Community based adaptation	Forestry; Energy	
<b>Notes:</b>				
6. Adaptation of land use practices (crops, fish and livestock) in light of climate change	The object of this project is to (a) enhance awareness and training among stakeholders, and enhance improved food security, (b) generate income and business opportunities in all agricultural	Knowledge communication; Capacity building	Agriculture	

Name	Objectives	Type of project	Priority Sector(s)	Geographic focus (if any)	
	sectors, and (c) identify species best suitable for aquaculture under changing climatic conditions due to global warming.	<b>Notes:</b>			
7.	Maintenance and provision of water infrastructure to communities to reduce Human wildlife conflict	The objective of this project is to provide access to potable water for communities living in and around protected areas. Activities include sinking boreholes and repairing existing water infrastructures in communities around parks as well as eradication of invasive alien species.	Community based adaptation	Human health	
	<b>Notes:</b>				
8.	Capacity building for improved environmental health in rural areas	The objective of this project is to improve the health, water and food security of rural populations, including climate proofing sanitation in urban areas. This is meant to prevent outbreaks of water-borne diseases in urban shanty compounds by flood-proofing sanitation facilities.	Capacity building	Human Health; Freshwater supply	
	<b>Notes:</b>				
<b>Additional Proposed Projects</b>					
9.	Microeconomic Costing of Discrete Adaptation Options in the Agriculture Sector: A Sub-National Level Analysis of the Welfare Gains of Dynamic Adaptation <sup>273</sup>		Research	Agriculture	Burkina Faso, Cameroon, Egypt, Ethiopia, Ghana, Kenya, Niger, Senegal, South Africa, Zambia
	<b>Notes:</b> proposal submitted for funding to the SCCF Budget: Proposed to from the SCCF: US\$2.0 million; proposed co-financing: to be determined.				

## E. Assessment

A moderate number of adaptation projects are active in Zambia, and there is considerable evidence of a high level of engagement within the government on the integration of climate change into its national policies, as demonstrated in its National Development Plan 2011-2015. The country is also currently preparing a National Climate Change Response Strategy.

<sup>273</sup> GEF, [http://www.thegef.org/gef/sites/thegef.org/files/publication/adaptation-actions\\_0.pdf](http://www.thegef.org/gef/sites/thegef.org/files/publication/adaptation-actions_0.pdf)



While only one of the priority adaptation actions identified in the country's NAPA is currently being funded, the project "Adaptation to the Effects of Drought and Climate Change in Agro-ecological Zone I and II," there is evidence that many of the country's most acute climate vulnerabilities are being addressed through current project activities. Adaptation within the agriculture and water sectors were noted as important by the Government of Zambia and other stakeholders, and several current project activities focus on these high priority areas. This includes work to promote adaptation on the ground through community based adaptation efforts, capacity building with local populations and governments to develop adaptation strategies, as well as further research into the potential impacts of climate change on these vulnerable sectors.

Although Zambia is making progress with respect to addressing some of its adaptation needs and priorities, others noted within the country's NAPA are not currently being addressed. These include areas such as the development the promotion of alternative sources of livelihoods, managing critical habitats, promoting regeneration of indigenous forests, and capacity building for improved environmental health. As well, future efforts may also look more at the gender-based implications of climate change, human health concerns and urban issues (reflecting Zambia's status as one of the most urbanized countries in sub-Saharan Africa). The diversification of future adaptation activities into these high priority areas would help to fill these gaps.

### References:

Centre for Environmental Economics and Policy in Africa [CEEPA] (2006). The economic impacts of climate change on agriculture in Zambia. Climate Change and Africa Agriculture, Policy Note No. 27. Accessed in April 2011 from:

<http://www.aec.msu.edu/fs2/zambia/resources/POLICY%20NOTE%2027.pdf>

International Federation of Red Cross and Red Crescent Societies [IFRC] (2009). Zambezi River Basin Initiative. Project Background Document. Accessed in April 2011 from: [http://www.ifrc.org/Docs/pubs/disasters/160400-Zambezi\\_River\\_Project\\_LR3.pdf](http://www.ifrc.org/Docs/pubs/disasters/160400-Zambezi_River_Project_LR3.pdf)

McSweeney, C. et al (2009). UNDP Climate Change Country Profiles: Zambia. Accessed in April 2011 from:

[http://ncsp.undp.org/sites/default/files/Zambia.oxford.report\\_0.pdf](http://ncsp.undp.org/sites/default/files/Zambia.oxford.report_0.pdf)

Ministry of Tourism, Environment, and Natural Resources [MTENR] (2002). Initial National Communication under the UNFCCC.

Accessed in April 2011 from: [http://www.adaptationlearning.net/sites/default/files/zambia\\_inc.pdf](http://www.adaptationlearning.net/sites/default/files/zambia_inc.pdf)



Ministry of Tourism, Environment and Natural Resources [MTENR] (2007). Formulation of the National Adaptation Programme of Action on Climate Change. Accessed in April 2011 from: <http://unfccc.int/resource/docs/napa/zmb01.pdf>

Ministry of Tourism, Environment and Natural Resources [MTENR] and the United Nations Development Programme [UNDP] (2010). National Climate Change Response Strategy, Zambia: Briefing Note. Accessed in April 2011 from: [http://nccrs-zambia.com/docs/briefing\\_note\\_june2010.pdf](http://nccrs-zambia.com/docs/briefing_note_june2010.pdf)