



CLIMATE CHANGE GENDER ACTION PLAN OF THE REPUBLIC OF ZAMBIA

(ccGAP:ZM)



Hosted by the Ministry of Gender for the Republic of Zambia

Facilitated by the International Union for Conservation of Nature
Global Gender Office (IUCN GGO)

Developed through a participatory, multi-sectoral, multi-stakeholder process

This ccGAP was made possible thanks to the financial support and partnership of USAID.

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“Climate change is a major threat to the environment and natural resources, which we need for the sustainable development of our country. The effects of climate change will undermine the very foundation of socioeconomic development and will increase inequality and poverty. It will have a serious impact on the livelihoods of poor women in Zambia, as the changing weather patterns will affect agriculture and water resources, which are often the responsibility of women.

Our government recognises the pivotal role women can play in the adaptation to climate change. Women farmers who make up above 60% of the small-scale farmers at production level can avoid crop failure in the face of changing weather patterns by growing off-season crops, which are more resilient to floods and drought.

In Zambia, the National Gender Policy articulates the fact that women have shown to be effective leaders within their communities when it comes to addressing the harmful

effects of climate change, and where women help devise early warning systems and reconstruction efforts, communities largely fare better when natural disasters caused by the change of climate occur.

When it therefore comes to decision-making and implementation towards building resilient communities in the face of climate change, the full and meaningful participation of women becomes essential.

Our government recognises that there is a gap between gender and climate change at national level and the grassroots level; therefore the development of the Climate Change Gender Action Plan will bridge this gap in providing a framework policy of how gender can help address climate change.

The Ministry of Gender is committed to ensuring that all important government programmes including climate change take into consideration the needs of women and men at all levels.”

Honourable Victoria Kalima
Minister of Gender
Republic of Zambia

FW: FOREWORD

With the development of Zambia's first Climate Change Gender Action Plan (ccGAP:ZM), the Government of the Republic of Zambia (GRZ) will endeavour to take action on women's leadership in the context of climate change. Without such plans in place, a country's climate change policy and planning is often gender-blind. Understandably, it is important to note that the ccGAP:ZM is a national strategy that will create coherence and stimulate cooperation between different government departments and stakeholders dealing with gender and climate change. Through the multi-stakeholder process, the strategies increase public awareness of climate change and gender equality issues to stimulate interest, participation and consultation with different stakeholders in developing climate change policies, and to increase capacity of those national actors to continue their involvement.

The objective of the ccGAP:ZM is to ensure that Zambia's climate change processes mainstream gender considerations to guarantee that women and men can have access to, participate in, and benefit equally from climate change initiatives.

This ccGAP, as indicated in Section A, is an Action Plan of the Ministry of Gender (MoG). It is, however, put forward as a tool for enhanced cooperation and action across and by all relevant actors, and in particular by the Ministry

of Lands, Natural Resources and Environmental Protection (MLNREP), respecting its role as the lead institution for the environmental sustainability and integrity throughout the country; the Interim Climate Change Secretariat (ICCS); climate change units, departments, and focal points across sectors; development partners, including bilateral and multilateral donors and the UN system; climate finance institutions and mechanisms; civil society; academia; and many others.

This Action Plan is grounded in the comprehensive existing institutional and policy framework that exists in Zambia, and in particular in the National Climate Change Policy (NCCP) and the National Gender Policy.

The ccGAP:ZM will require a collaborative effort between the MoG and the MLNREP. The MoG as the leading institution mandated to ensure that gender is fully incorporated in the national initiatives and policies, and the MLNREP as the leading institution in the topic of climate change.

It is important to notice that all the major funding mechanism associated with climate change have developed gender polices with their respective plans of actions such as Climate Investment Funds (CIF), the Global Environment Facility (GEF), Green Climate Funds (GCF) and Adaptation Fund (AF), which

constitutes an unprecedented opportunity for Zambia. It is hoped that the ccGAP:ZM will support the exploration and mobilisation of

these and other new resources for the Ministry of Gender.

Dr. Felix V. Phiri
Permanent Secretary
Ministry of Gender
Republic of Zambia

SA: SPECIAL ACKNOWLEDGEMENTS

The Government of Zambia is unique in its years-long commitment to mainstreaming gender in policies across sectors. The newly established Ministry of Gender is visionary in its understanding of the critical linkages between advancing gender equality and combatting the climate crisis—and this leadership is evidenced by the Climate Change Gender Action Plan (ccGAP) in the pages ahead. This ccGAP spans sectors, levels, and agencies; it addresses a wide range of priority issues for protecting and promoting the natural resources and beauty of Zambia—from energy to water, and from forestry and wildlife to tourism. Far from exhaustive in detailing every aspect of gender and climate concerns relevant to Zambia, it provides a substantive tool for action for all stakeholders engaged in the sustainable development, and climate change adaptation and mitigation, of the country. The Global Gender Office of the International Union for Conservation of Nature (IUCN GGO) has taken great pride in having the opportunity to support the Ministry of Gender, and the Government as a whole, in constructing this Plan.

Drawing upon a background document prepared by Mr. Victor Kazembe Kawanga of the Africa Foundation for Sustainable Development, who served as consultant to this process in support of both the Ministry of Gender and ourselves, IUCN GGO has facilitated a process that comprised mainly of in-country meetings; stakeholder consultations involving

representatives from several ministries and government departments and agencies, civil society, academia, research institutions, local NGOs and international organisations; a desk review of key reports, publications, websites, surveys and in-person interviews for accurate information on the Zambian situation; and then a series of multi-stakeholder workshops in Lusaka (18-22 January 2016), which brought together experts, policymakers and practitioners across a wide spectrum of sectors and from all 10 provinces. The discussions of these workshops prioritised sectors and issues, examined the gender-differentiated impacts of climate change in Zambia, analysed the status of women and the constraints to gender equality, and produced critical and innovative ideas for bridging gaps and advancing gender-responsive climate change adaptation and mitigation.

Many individuals and institutions made this effort possible; to them, and to others who may not be listed here, we extend our sincerest appreciation:

The Minister of Gender, Hon. Victoria Kalima, MP, is an extraordinary source of wisdom, inspiration and action: her commitment to empowering the women of Zambia, protecting their rights, and supporting gender-responsive action on climate change is clear in her Ministry's commitment to the ccGAP process. The Permanent Secretary of Gender, Ms. Edwidge K.M. Mutale offered substantive and inspiring guidance to the entire process.

The Permanent Secretary of the Ministry of Lands, Natural Resources and Environmental Protection (MLNREP), Mr. Barnaby Mulenga then offered visionary guidance for implementation. IUCN GGO looks forward to potential opportunities to support collaborations with the MLNREP and across Ministries for the full implementation of gender-responsive commitments. Mrs. Yunike Zulu-Mutale, Assistant Director and Desk Officer for Gender and Climate Change, has been a vital driver of this process.

Mr. Victor Kazembe Kawanga and Mr. Danny Mohapeloa Bulaya of the Africa Foundation for Sustainable Development were joyful companions along this journey and offered sage advice on addressing critical sectoral issues.

The participants of the stakeholder workshops were extraordinary in their technical capacity and commitment; the media's interest in and coverage of the workshop discussions were also a powerful example of Zambia's need to enact gender-responsive climate solutions.

Grateful acknowledgement goes to USAID. USAID has recognised the power of gender equality and promoted women's rights and empowerment across its development strategies and investments. IUCN GGO is better for its partnership with USAID and deeply thankful for the support in this and other transformative processes. In addition to countless partners in USAID headquarters and around the world, thanks go to the Zambian office.

Finally, our sincerest thanks—as always—to our IUCN GGO colleagues in Washington, DC, and around the world, for their tireless support. Emmett Boyer and Molly Gilligan contributed significant research to the pages ahead, Barbara Clabots contributed data and analysis, and Roxanne Halley and Celia Steele provided administrative support. And nothing at IUCN GGO, including especially the trademark ccGAP methodology, is possible without Lorena Aguilar, who creates opportunities like these to help countries around the world turn commitments to action.

Cate Owren and Margaux Granat

IUCN GGO

January 2016

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AC: ACRONYMS

AU	African Union	CO₂	Carbon dioxide
AfDB	African Development Bank	COP	Conference of Parties
AZWIM	Association of Zambian Women in Mining	CSO	Civil society organisation
CARE	Cooperative for Assistance and Relief Everywhere	DFID	British Department for International Development
CBD	United Nations Convention on Biological Diversity	DMMU	Disaster Mitigation and Management Unity
CBO	Community-based organisation	DRC	Democratic Republic of the Congo
ccGAP	Climate Change Gender Action Plan	DRR	Disaster risk reduction
ccGAP:ZM	Climate Change Gender Action Plan for Zambia	DRRR	Disaster risk reduction and resilience
CEDAW	UN Convention on the Elimination of All Forms of Discrimination Against Women	EGI	IUCN's Environment and Gender Information (platform)
CEEC	Citizens Economic Empowerment Commission	EIA	Environmental impact assessment
CFL	Compact fluorescent	EMA	Environmental Management Act
CFMG	Community forest management group	EPPCA	Environmental Protection and Pollution Control Act
CIF	Climate Investment Fund	ESP	Environmental Support Programme
CIFOR	Centre for International Forestry Research	FAO	United Nations Food and Agriculture Organization
		FBO	Faith-based organisation
		FHH	Female-headed households

FIP	Forest Investment Program	INDC	Intended Nationally Determined Contribution
FTC	Farmer Training Center	IPCC	Intergovernmental Panel on Climate Change
GBV	Gender-based violence	IRENA	International Renewable Energy Agency
GCF	Green Climate Fund	IUCN	International Union for Conservation of Nature
GDP	Gross Domestic Product	LDCs	Least Developed Countries
GECCO	Gender Equality for Climate Change Opportunities	LEDS	Low Emissions Development Strategies
GEF	Global Environment Facility	MCT	Ministry of Communications and Transportation
GGO	IUCN Global Gender Office	MDG	Millennium Development Goal
GHG	Greenhouse gas	MENR	Ministry of Environment and Natural Resources
GIDD	Gender in Development Division	MEWD	Ministry of Energy and Water Development
GII	Gender Inequality Index	MGCD	Ministry of Gender and Child Development
GMA	Game Management Areas	MLNREP	Ministry of Lands, Natural Resources and Environmental Protection
GRZ	Government of the Republic of Zambia	MoG	Ministry of Gender
HDR	Human Development Report	MRV	Monitoring, reporting and verification
ICCS	Interim Climate Change Secretariat of Zambia	MSMEs	Micro, small, and medium enterprises
ICT	Information and communication technology	NAP	National Action Programme for Implementation of UNCCD
IEC	Information, Education and Communication	NAPA	National Adaptation Programme of Action
IFAD	International Fund for Agricultural Development		
IFPRI	International Food Policy Research Institute		

NBSAP	National Biodiversity Strategy and Action Plan	REMP	Rural Electrification Master Plan
NCCRS	National Climate Change Response Strategy	RESAP	Renewable Energy Strategy and Action Plan
NDMP	National Disaster Management Policy	RIDMP	Regional Infrastructure Development Master Plan
NDP	National Development Plan	SACREEE	Regional Renewable Energy and Energy Efficiency Agency
NEAC	National Economic Advisory Council	SADC	Southern African Development Community
NEAP	National Environmental Action Plan	SDGs	Sustainable Development Goals
NGO	Non-governmental organisation	SE4All	Sustainable Energy for All
NGP	National Gender Policy	SIGI	OECD's Social Institutions and Gender Index
NISIR	National Institute for Scientific and Industrial Research	SMGL	Saving Mothers, Giving Life
NJP	National Joint Programme	SNDP	Sixth National Development Plan
NPCC	National Policy on Climate Change	SPCR	Strategic Program for Climate Resilience
NPE	National Policy on Environment	SREP	Scaling Up Renewable Energy Project
NTFP	Non-timber forest products	SSA	Sub-Saharan Africa
NTP	National Tourism Policy	STIs	Sexually Transmitted Infections
PPCR	Pilot Programme for Climate Resilience	TB	Tuberculosis
PV	Photovoltaic	TEVETA	Technical Education Vocational and Entrepreneurship Training Authority
RCU	REDD Coordination Unit	UN	United Nations
REDD+	Reducing emissions from deforestation and forest degradation, plus conservation of existing forest carbon stocks, sustainable forest management and enhancement of forest carbon stocks	UNCCD	United Nations Convention to Combat Desertification
		UNCED	United Nations Conference on Environment and Development

UNDP	United Nations Development Programme	WRMD	Water Resources Management and Development
UNEP	United Nations Environment Programme	WTO	World Tourism Organization
UNFCCC	United Nations Framework Convention on Climate Change	WWF	World Wildlife Fund
UNFPA	United Nations Population Fund	ZAMTEL	Zambia Telecommunications Company Ltd.
UNICEF	United Nations Children Fund	ZAWA	Zambia Wildlife Authority
UNISDR	UN International Strategy for Disaster Reduction	ZEMA	Zambia Environmental Management Agency
USAID	United States Agency for International Development	ZEPRIIS	DMMU Information Management platform
WASH	Water, sanitation and hygiene	ZESCO	Zambia Electricity Supply Corporation
WFS	World Food Summit	ZFAP	Zambia Forestry Action Plan
WHO	World Health Organization	ZFAWIB	Zambia Federation of Women in Business
WRMA	Water Resources Management Authority	ZGEN	Zambia Gender and Energy Network
		ZMD	Zambia Meteorological Department

INTRODUCTION

Over several decades, strong interlinkages have been made between advancing gender equality and progressing sustainable development and environmental management. These links are well anchored in a global normative policy framework that promotes women’s empowerment and gender equality in the context of sustainable development and environmental conservation—as well as in combatting and coping with climate change. The Government of Zambia has followed suit, ensuring that all major policies and plans integrate gender concerns as a policy priority for a number of years.

With the increasing effects of climate change being felt every day across the country, comprehensive, effective, efficient, and equitable climate change planning and preparedness is gaining precedence in Zambia. At the time of the construction of this Climate Change Gender Action Plan for Zambia (ccGAP:ZM), the expected normal rainfall was delayed for two months, wreaking havoc on hydropower plant production for energy generation,¹ agricultural crop yields, and economic activity across sectors.² The gender-differentiated impacts of these and other conditions have been

analysed as part of the ccGAP process and serve as a real-life foundation—and impetus—for constructing the Action Plan, (as discussed in sections to follow).

The climate change policies and plans prepared by the Government over the past years have included gender considerations to varying extent across sectors and Ministries. This puts Zambia ahead of the international curve, as many countries have yet to make the policy links between women’s and gender concerns and climate change adaptation and mitigation. Zambia’s National Adaptation Programme of Action (NAPA) and the Intended Nationally Determined Contribution (INDC), for example, include reference to women and gender concerns; the National Policy on Climate Change drafted in 2012 and in the process of approval in 2016, also includes reference to gender (for example, “All actions aimed at addressing climate change are environmentally sustainable and will positively affect...gender equality...” is mentioned in the Guiding Principles).³

Building an understanding of the gender aspects of climate change adaptation and mitigation enhances comprehensive planning

1 *The New Age*. (2016). *Kariba hydropower plant’s output slides*. Lusaka. January 25, 2016. Vol. V No. 016.

2 *Mining companies have sent workers home, for example, because of lack of electricity to function. This directly affects predominantly men miners, with a ripple effect across families and communities. Meanwhile, women subsistence farmers struggle to secure their livelihoods with dramatically reduce rainfall to support crops.*

3 *Ministry of Lands, Natural Resources, and Environmental Protection*. (2012). *National Policy on Climate Change*. Republic of Zambia.

and programming that is effective, efficient, and equitable. This is increasingly recognised by global policy spheres, regional and national strategies, international development agencies including across the United Nations, and— vitally important—across funding mechanisms including the major multilateral climate finance mechanisms. According to the Green Climate Fund, for example, in its Gender Policy and Action Plan,⁴ gender and climate change matters because:

- Women’s mortality from climate-related disasters is higher [and] women are more vulnerable to waterborne diseases;
- Various manifestations of climate change, such as drought, exacerbate fuelwood and water scarcity and add more to the domestic burdens of women than to those of men;
- As women tend to rely more on natural resources for their livelihood, the decline in land and biomass productivity affects women more than men, especially in rural areas, and exacerbates their poverty;
- In urban areas, after climate-related disasters, it is harder for poor women than for poor men to recover their economic status and welfare; and
- Women, as well as men, significantly contribute to combating climate change as knowledgeable small-scale farmers and leaders of climate-change adaptation and mitigation initiatives.

Climate change is exacerbating Zambia’s main environmental problems, including land degradation, deforestation, air pollution in and around the mining areas, water pollution and inadequate sanitation, and wildlife

endangerment. Solutions to these issues must carefully consider the needs, knowledge, and capacities of women and men in order to maximise resilience and well-being for the whole of the population. With respect to the environmental management in place in Zambia supported by policy and institutional arrangements, it is an important time to integrate gender considerations more comprehensively to enhance synergy and action across all key stakeholders; this ccGAP aims to do that.

THE CCGAP:ZM

Recognising the gaps between policy commitments and action, and the need for a comprehensive, inclusive and equitable approach on climate change, the Government of the Republic of Zambia, specifically the Ministry of Gender (MoG), submitted a formal request to the International Union for Conservation of Nature (IUCN) Global Gender Office (GGO) to support the development of a ccGAP for Zambia (ccGAP:ZM). To facilitate this, and thanks to the support of the United States Agency for International Development (USAID) under the Gender Equality for Climate Change Opportunities (GECCO) initiative (see Box 1), IUCN GGO conducted a process that comprised mainly of in-country meetings; stakeholder consultations involving representatives from several ministries and government departments, civil society, academia, research institutions, local non-governmental organisations (NGOs) and international organisations; a desk review of key reports, publications, websites, surveys and in-person interviews for accurate information on the Zambian situation; and then a series of multi-stakeholder workshops in Lusaka (18-22

4 GCF. *Gender policy and action plan*. http://www.gcfund.org/fileadmin/00_customer/documents/MOB201503-9th/10_-_Gender_Policy_and_Action_Plan_20150304_fin.pdf

5 (Food and Agriculture Organization of the United Nations, 2011)

BOX 1: The Gender Equality for Climate Change Opportunities (GECCO) initiative is a partnership of USAID and IUCN GGO to leverage advancements in women’s empowerment and gender equality through, and for, the benefit of climate change and development outcomes. The GECCO initiative has been designed to provide an array of support options for national, regional, and global activities that advance women’s empowerment and gender equality.

The GECCO initiative has two main sub-objectives:

- Support the development of gender-responsive climate change action plans, and
- Build the capacity to implement gender-responsive actions.

The development of the ccGAP:ZM implements activities toward both these objectives in tandem via the ccGAP methodology.

January 2016), which brought together experts, policymakers and practitioners across a wide spectrum of sectors and from all ten provinces. The discussions of these workshops prioritised sectors and issues, examined the gender-differentiated impacts of climate change in Zambia, analysed the status of women and the constraints to gender equality, and produced critical and innovative ideas for bridging gaps and advancing gender-responsive climate change adaptation and mitigation policy, planning and measures.

This ccGAP is an Action Plan of the MoG. It is, however, put forward as a tool for enhanced cooperation and action across and by all relevant actors, and in particular by the Ministry of Lands, Natural Resources and Environmental Protection (MLNREP), respecting its role as the lead institution for the environmental sustainability and integrity throughout the country; the Interim Climate Change Secretariat;

climate change units, departments, and focal points across sectors; development partners, including bilateral and multilateral donors and the United Nations (UN) system; climate finance institutions and mechanisms; civil society; academia; and many others.

This Action Plan is grounded in the comprehensive existing institutional and policy framework that exists in Zambia, and in particular in the National Climate Change Policy and the National Gender Policy.

In preparing this Action Plan, which is envisioned to span five years (2016-2020), MoG together with workshop participants selected seven priority sectors to focus on; these mirror priorities in the National Climate Change Policy, as well as other relevant climate change plans and programmes, such as the NAPA, REDD+ Strategy, INDC, and Pilot Programme for Climate Resilience (PPCR), among others.

The ccGAP priority sectors include: Sustainable agriculture and food security; Health; Forests, including, Protected Areas, REDD+, biodiversity and wildlife; Water security, Disaster risk reduction, preparedness and resilience; Infrastructure; Energy; and Tourism. A number of cross-cutting issues are moreover relevant and necessary across sectors: policy reform and synergy; education and awareness-raising; academic research, sex-disaggregated data, and information dissemination—both for public awareness and to inform policy; and capacity building and training.

A range of activities was identified for each priority sector. Relevant to all of them, are the following key activities, which the Ministry of Gender, in concerted collaboration with others, could consider implementing as soon as possible:

- Analysing existing policies and institutional arrangements to enhance awareness on gender and climate change linkages and options for action;
- Implementing training on gender and climate change for all ministerial gender focal points, including training tools on gender-responsive budgeting (building on existing tools and training);
- Broadening training on gender and climate change to provincial level, particularly focusing on Ministry of Gender staff, key partners, and women's organisations and networks;

- Establishing civil society liaisons to complement each gender focal point: this would aid in information flow across sectors, provinces and districts, including on climate change information and climate financing opportunities;
- Concretising a partnership with the Ministry of Lands, Natural Resources and Environmental Protection, as well as the Interim Climate Change Secretariat, by establishing a gender and climate change working group and identifying climate finance opportunities that could improve the lives, livelihoods and resilience of the women and men of Zambia; and
- Developing the capacity of women and women's organisations to be able to access climate finance.

The draft of this ccGAP will be launched on International Women's Day, the 8th of March, 2016. The Ministry of Gender will continue to convene communications around the implementation of this Plan, including with Government partners, civil society, and the donor community.

In 2016, the African Union Year of Human Rights, particularly Women's Rights, and the first year after the United Nations Framework Convention on Climate Change (UNFCCC) Paris Agreement and Sustainable Development Goals have come into being, the time for action is now.



GENDER AND CLIMATE CHANGE IN ZAMBIA: THE NEED FOR GENDER-RESPONSIVE PLANNING AND A FRAMEWORK FOR ACTION

1. INTRODUCTION

The impacts of climate change are already being felt in Zambia and are expected to multiply in coming years. With a significant portion of the population reliant upon subsistence agriculture and other natural resource-dependent livelihoods, (including but not limited to forestry, tourism, and mining), changes to the environment will dramatically affect food security, health, education, social and physical infrastructure, and many other aspects of life and overall wellbeing.

At the time of the construction of this Climate Change Gender Action Plan for Zambia (ccGAP:ZM), the rainy season is more than two months delayed, wreaking havoc on hydropower plant production for energy generation,⁶ agricultural crop yields, and economic activity across sectors.⁷ This has deeply gender-differentiated impacts. Mining companies have sent workers home, for example, because of lack of electricity to function. This directly affects predominantly men miners, with a ripple effect across families and communities, and Zambia's gross domestic product (GDP). Meanwhile, women subsistence farmers struggle to secure their livelihoods with dramatically reduced rainfall to support crops. These are just a few examples that emerged from ccGAP workshop discussions.

The linkages between gender and environment find home not only in the lived reality of women and men all over the country—e.g. in their everyday roles and responsibilities related to water, energy, agriculture and forestry, among others, at all levels—but as mirrored in national policies and plans, as well. Gender considerations are increasingly being recognised as crosscutting issues in many of Zambia's sustainable development strategies and related ministries and national legislation. This is particularly important as the country advances its climate change adaptation and mitigation strategies. In 2014, the Ministry of Gender and Child Development (MGCD)—now Ministry of Gender (MoG)—released a National Gender Policy, which addresses gender mainstreaming across relevant sectors including energy, water, sanitation, transportation, and tourism sectors, and it makes note of climate change in particular. In addition, recognising the important linkages between gender and climate change, the Ministry of Lands, Natural Resources and Environmental Protection (MLNREP) notes gender, environment and climate change strategies as essential steps to creating efficient, effective, equitable and fiscally responsible policies.

It is in this context that the Government of the Republic of Zambia (GRZ, but commonly and hereafter simply referred to as Zambia), has

6 The New Age. 2016. *Kariba hydropower plant's output slides*. Lusaka. January 25, 2016. Vol. V No. 016.

7 Mining companies have sent workers home, for example, because of lack of electricity to function. This directly affects predominantly men miners, with a ripple effect across families and communities. Meanwhile, women subsistence farmers struggle to secure their livelihoods with dramatically reduce rainfall to support crops.

developed a **Climate Change Gender Action Plan (ccGAP)**, the context for which comprises this first section of this paper, and the second being the Action Plan.

2. CLIMATE CHANGE GENDER ACTION PLAN (CCGAP) PROCESS

This ccGAP:ZM draws support from the Gender Equality for Climate Change Opportunities (GECCO) initiative, a partnership of International Union for Conservation of Nature (IUCN) Global Gender Office (GGO) and United States Agency for International Development (USAID) to leverage advancements in women's empowerment and gender equality through, and for, the benefit of climate change and development outcomes. The GECCO initiative has been designed to provide an array of support options for national, regional, and global activities that advance women's empowerment and gender equality.

The GECCO initiative has two main sub-objectives:

- Support the development of gender responsive climate change action plans, and
- Build the capacity to implement gender responsive actions.

The development of the ccGAP:ZM implements activities toward both these objectives in tandem via the ccGAP methodology.

Over the past decade, tremendous increases in global policy agreements on climate change have integrated gender equality

concerns. Countries then began to grapple with translating international agreements to national commitments, and implementing those commitments. An important step in the implementation process is anchoring policy commitments in local realities and carving out options for action—and thus the ccGAP process was born.

Beginning in January 2010, IUCN GGO spearheaded the development⁸ of the ccGAP, a process which has now been conducted by 20 countries in nearly every region of the world. The process begins with a formal invitation submitted by a government to IUCN GGO. National ownership of the ccGAP is not limited to government involvement, however, but rather engages civil society and other concerned stakeholders, such as the private sector, and the international and national development communities at large. Because they are driven and led by countries themselves, the ccGAPs are built on the capacity of local actors, entrenched in the local context, respond to local needs, suit internal institutional arrangements, and undergo national validation, thus securing ultimate success in implementation. As the ccGAP is validated and adopted, guardianship of the strategy by government and civil society that can shepherd it through to implementation is critical.

The ccGAPs facilitate governments taking action on women's leadership in the context of climate change. Without such plans in place, a country's climate change policy and planning is often gender-blind. Governments that have prepared ccGAPs have expressed that national strategies create coherence and stimulate cooperation between different government

8 The first and primary support of the ccGAP process has been the Government of Finland under the auspices of the Global Gender and Climate Alliance (GGCA). Other donors for specific country processes have included USAID, the Swiss Development Cooperation, and the Spanish Agency for International Development, among others.

departments and stakeholders dealing with gender and climate change. Through the multi-stakeholder process, the strategies increase public awareness of climate change and gender equality issues to stimulate interest, participation and consultation with different stakeholders in developing climate change policies, and to increase capacity of those national actors to continue their involvement.

2.1.1. Objective

The objective of this ccGAP is to ensure that Zambia's climate change policy, programming and funding processes effectively mainstream gender considerations to guarantee that women and men can have access to, participate in, and benefit equally from climate change initiatives.

2.1.2. Methodology

The development of the ccGAP included five key steps:

1. Meetings with representatives from the Ministry of Gender and Child Development (now MoG), MLNREP, the Interim Climate Change Secretariat (ICCS), the USAID Zambia Mission, and local non-governmental organisations (NGOs) in order to establish a working group/task force to oversee the conduction of the ccGAP;
2. Meetings and interviews, as well as an extensive desk review of existing literature (policies, articles, NGO and other stakeholder websites, etc.) to develop a diagnosis as to the status of gender and climate change in Zambia;
3. Development and facilitation of a two-day stakeholder training on climate change, gender, and the linkages between them;

4. Development and facilitation of a three-day national workshop, including many participants from the first workshop, to elaborate discussions related to gender and climate change in Zambia and facilitate creation of the Gender Action Plan. This workshop brings together a wide range of government and civil society stakeholders and, in the case of Zambia, brought participants to Lusaka from all 10 provinces; and
5. Validation (electronic and in-person consultation) and formalisation/approval of the ccGAP by the government. It is recommended that the ccGAP is shared with all participants of the workshops, and then further enriched and validated by workshops/consultations at provincial and/or district level.⁹

Mobilisation of sound partnerships, effective strategies, and of course financial resources are another key step of implementation. It is the sincere hope and clear intention of all those who created this ccGAP that it will not be only “another policy paper” but will be a tool for action and inspiration for the same.

While the MoG, as host and lead of this ccGAP, is responsible for gender mainstreaming across all national policies and initiatives, the duty lies with all those who are responsible for mitigating and adapting to climate change in Zambia to ensure that plans and approaches fully respond to the needs and capacities—and the rights, lives, and livelihoods—of all women and men.

2.1.3. Policy framework

As this ccGAP was at the invitation and coordination of the MoG, the National Gender

⁹ As a post-process note: a significant number of workshop evaluations emphasised the importance of province- and district-level training on gender and climate change concerns and linkages.

Policy (NGP) has served as one important starting point for the development of the Action Plan. The NGP includes a number of key issues relevant to climate change (e.g. energy, health, water), but it also has one section specifically on climate change (as discussed later in this section).

Importantly, however, Zambia's key climate change policies, plans, and strategies provide the foundation for this ccGAP, as the ccGAP is meant as a tool to enhance the implementation of environmental and climate change plans and not to serve as a stand-alone plan on gender and climate change. To that end, Zambia's National Adaptation Programme for Action (NAPA), Intended Nationally Determined Contribution (INDC), Pilot Programme for Climate Resilience (PPCR) second phase, and other key climate change plans and programmes have been analysed as an input to this ccGAP.

In Section B below, the Gender Action Plan, includes a table offering direct correlations between ccGAP-identified activities and National Climate Change Policy objectives and strategies.

3. THE CASE FOR GENDER EQUALITY¹⁰

Gender continues to be one of the world's strongest markers for disadvantage. In the context of climate change, as the fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) affirmed, gender will be among one of the chief socioeconomic factors that determines

vulnerability to its impacts.¹¹ But at the very same time, advancing gender equality is one of the most transformative investments a country can make in its future.

All too often, and in countries across every region of the world, women and their socially and culturally constructed roles and responsibilities are overlooked, undervalued, or even denied. This is especially true of the economic sector where women have limited, or restricted, access to resources, leading to differences in benefits derived from their use. Women are systematically restricted from meaningful participation in global economies, and their access to skills and employment have been, and still are, severely hampered.¹² This results in a global economic structure that excludes the majority of women around the world—discounting 50% of populations around the globe. Increased inequality, exclusion, and uneven development are real dangers for all economies, with rippling effects through all spheres of life, limiting opportunities for sustainable progress.

Despite some successes and a plethora of policies, strategies and programme interventions at all levels, deeply entrenched gender inequalities continue to persist, along with poor implementation of gender policies, acting as a deterrent to growth, economic development, employment creation and poverty eradication. Many development projects perform below their potential, because inequalities in the distribution of wealth, income, skills and employment amongst women and men are not identified

10 This section draws on research for similar sections from other countries' ccGAPs, as well as *Roots for the Future: the Landscape and Way Forward on Gender and Climate Change* (2015) by IUCN GGO and partners.

11 IPCC. (2007). Fourth Assessment Report. https://www.ipcc.ch/publications_and_data/ar4/syr/en/contents.html

12 Aguilar, L, et.al. (2012). *Gender Review of the Climate Investment Funds* (CIF). Washington, DC: IUCN Global Gender Office. <https://climateinvestmentfunds.org/cif/content/gender-review-cif-full-report>

from the outset, perpetuating the impact on a community's overall well-being. Climate change threatens to exacerbate all types of inequalities and inequities—gender among them.

Striving for greater gender equality is beneficial to economies and communities, however, as it represents smart economics, enhances productivity, and improves other development outcomes, including prospects for the future generations and for the quality of societal policies and institutions.¹³

Realising gender equality means women and men are equally able to access and employ the full spectrum of their human rights—which is imperative for justice, in and of itself, everywhere around the world and a prerequisite for an equitable and sustainable world. But driving economic, social, political and environmental transformation is another key opportunity and outcome of advancing gender equality: from household to corporate levels, women's full and equal participation and empowerment, and their access to and control of spaces and resources, allows for multifold benefits to the global community, including:

- *Raising healthier, more educated families:* Educating girls, often referred to as the single best investment for development, leads to better employment opportunities for those girls in adulthood, and to those adults raising healthier, more educated children. Moreover, “A study using data from 219 countries from 1970 to 2009 found that, for every one additional year of education for women of reproductive age, child mortality decreased by 9.5%”¹⁴
- *Translating equitable land tenure into well-being:* Countries where women lack any right to own land have on average 60% more-malnourished children and lower proportion of the population has access to safe drinking water¹⁵
- *Guaranteeing inclusive decision making benefits the community as a whole:* Ensuring women are involved in community-level decision-making processes tends to produce increased focus on public goods, such as education and water and sanitation services¹⁶
- *Dramatically reducing food insecurity:* “Closing the gender gap in agriculture would generate significant gains for the agriculture sector and for society. If women had the same access to productive resources as men, they could increase yields on their farms by 20–30%. This could raise total agricultural output in developing countries by 2.5–4%, which could in turn reduce the number of hungry people in the world by 12–17%”¹⁷
- *Growing the global economy:* Over the last decade, the increased employment of women in developed economies has contributed significantly more to global growth than China¹⁸

13 World Bank. (2011). *World development report 2012: Gender equality and development*. Washington, DC: World Bank.

14 Gakidou, E., Cowling, K., Lozano, R., & Murray, C. (2010). Increased educational attainment and its effect on child mortality in 175 countries between 1970 and 2009: a systematic analysis. *The Lancet*, 376(9745), 959-974. [http://dx.doi.org/10.1016/S0140-6736\(10\)61257-3](http://dx.doi.org/10.1016/S0140-6736(10)61257-3)

15 UNDP-UNEP Poverty Environment Initiative Malawi. (2014). *Gender-environment and natural resources data and indicator rapid assessment* (F. Sesay-Kebbay, Author). http://www.unpei.org/sites/default/files/e_library_documents/Gender_ENR_Data_and_Indicator_Rapid_Assessment_0.pdf

16 World Bank. (2011). *World development report 2012: Gender equality and development*. Washington, DC: World Bank.

17 FAO. (2011). *The state of food and agriculture 2010-2011. Women in agriculture: Closing the gender gap for development*. Rome: UN FAO.

18 A guide to womenomics: Women and the world economy. (2006, April 12). *The Economist*, Finance and economics. Retrieved from <http://www.economist.com/node/6802551>

- *And national economies, too:* When women are able to develop their full labor market potential, there can be significant macroeconomic gains. Raising the female labor force participation rate to country-specific male levels would, for instance, raise GDP in the United States by 5%, in Japan by 9%, in the United Arab Emirates by 12%, and in Egypt by 34%¹⁹
- *Making smart sustainable development decisions:* Countries with higher women parliamentary representation are more likely to ratify environmental agreements and more likely to set aside protected land areas²⁰
- *Harnessing the potential for environmentally friendly purchasing power:* “Surveys suggest that women make perhaps 80% of consumers’ buying decisions—from health care and homes to furniture and food”²¹
- *Improving the business bottom line:* Having women in leadership positions, such as on boards, councils or governing bodies, has shown to be directly linked to higher business performance. Among a multitude of research leading to similar conclusions, one study revealed that of Fortune-500 companies ranked according to the number of women directors on their boards, those in the highest quartile in 2009 reported a 42% greater return on sales and a 53% higher return on equity than the rest²²

Governments and stakeholders from around the world have recognised how important gender equality is to sustainable development

and to the human experience overall. Gender mainstreaming is thus the primary methodology by which to integrate a gender approach into development and environmental efforts. The Government of Zambia has made strong commitments to gender mainstreaming, and the very existence of the Ministry of Gender is an example of that.

Mainstreaming gender does not merely imply a one-off solution to issues of equity and equality by adding women’s participation to existing strategies and programmes. Rather, it seeks to transform unequal societies and institutional structures to realise the full creative and productive capacity and potential of women to reduce vulnerability and enhance efficiency and effectiveness of development projects and programmes. This typically demands capacity building on gender mainstreaming across a range of stakeholders, so that the end goal of more just and equal societies can be fully understood and owned by all stakeholders.

Integrating a gender perspective also means examining the multiplicity of inequalities that may be impacting a community or country and exacerbating profound cycles of poverty. Often, women, and issues generally thought to be “women’s issues,” such as reproductive health and rights, are at the forefront of gender mainstreaming because they tend to be amongst the most vulnerable or discriminated groups. But men and boys are also pieces of the equality puzzle. In Bangladesh, boys in the

19 IMF. (2013). Women, work, and the economy: Macroeconomic gains from gender equity.

20 UNDP. (2014). *Human development report 2014: Sustaining human progress: Reducing vulnerabilities and building resilience*. <http://hdr.undp.org/sites/default/files/hdr14-report-en-1.pdf>

21 A guide to womenomics: Women and the world economy. (2006, April 12). *The Economist*, Finance and economics. <http://www.economist.com/node/6802551>

22 Joy, L., Carter, N. C., Wagner, H. M., & Narayanan, S. (2007). *The bottom line: Corporate performance and women’s representation on boards*. http://www.catalyst.org/system/files/The_Bottom_Line_Corporate_Performance_and_Womens_Representation_on_Boards.pdf

poorest 20% of the population are less likely than girls in the poorest 20% to go to school.²³

The importance of gender mainstreaming in development efforts is now globally recognised, and the importance, specifically in environmental efforts and poverty eradication, has been recognised in a wide range of global agreements and conventions. By signing and ratifying the Rio Conventions—on biodiversity (CBD),²⁴ climate change (UNFCCC), and combating desertification (UNCCD)—governments officially committed to implement these agreements and monitor and report on their progress. These international agreements are an historic step forward, but the second half of the equation—implementation at national level—lags and requires urgent attention to address these inequities. It is worthwhile to note that both the CBD and the UNCCD have developed specific policy frameworks for mainstreaming gender considerations²⁵ and that the Parties to the UNFCCC have generated a set of mandates in this respect, as well. (See Annex I)

4. THE VALUE OF A GENDER-RESPONSIVE APPROACH TO TACKLING CLIMATE CHANGE

“Climate change is a major threat to the environment and natural resources, which we

need for the sustainable development of our globe. Climate change will undermine the very foundation of socioeconomic development and will increase inequality and poverty. It will have a serious impact on the livelihoods of poor women in developing countries, as the increasing droughts and storms will affect agriculture and water resources, which are often the responsibility of women.”²⁶

Women are much more than vulnerable victims of climate change; they play a central role in mitigating climate change and adapting to its effects. In Nepal, women farmers avoid crop failure in the face of changing weather patterns by growing off-season vegetables and bananas, which are more resilient to flood and drought.²⁷ In Jordan, women’s management of small-scale irrigation projects and involvement in water harvesting and soil conservation improves the efficiency of water use.²⁸ In Tanzania, when men migrate away from home for longer periods due to the impacts of climate change, women take over the role of livestock herding and pasture management.²⁹ In Nicaragua, following a disaster, women were actively involved in evacuating those at risk, transporting materials to clear roads, and organising food collection brigades, and health care campaigns.³⁰ In El Salvador, women are using the previously wasted heat and condensation from geothermal

23 UNICEF. (2010). *Progress for children: Achieving the MDGs with equity*. New York, NY: UNICEF.

24 For more information, visit: <https://www.cbd.int/rio/>

25 See *CBD Gender Plan of Action* www.cbd.int/doc/meetings/cop/cop-09/information/cop-09/; and UNCCD http://www.gender-climate.org/Content/Docs/Publications/20_iucn_genderpolicyframeworkforunccd.pdf

26 Halonen, T. (2012). *Foreword to: The art of implementation: Gender responsible national and regional strategies transforming climate change decision making*. Washington, DC: IUCN Global Gender Office.

27 ActionAid. (2007). *We know what we need: South Asian women speak out on climate change adaptation*. Johannesburg, South Africa and London, UK: ActionAid and Institute of Development Studies

28 Al-Naber, S. and Shatanawi, M. (2003). *The role of women management in Jordan*. Presented at the 6th International Water Symposium: Canne, France.

29 Matinda, M. Z. (2010). *Maasai pastoralist women’s vulnerability to the impacts of climate change: A case study of Namalulu Village, Northern Tanzania*. Paper prepared for the Global Workshop Seminar on Indigenous Women, Climate Change and Reducing Emissions from Deforestation and Forest Degradation (REDD+) November 18-19: Mandaluyong City, Philippines.

30 Delany, P. and Shrader, E. (2000). *Gender and post-disaster reconstruction: The case of Hurricane Mitch in Honduras and Nicaragua*. Washington, DC: World Bank.

plants to improve their own livelihoods and empower others: they use water condensation to grow and sell roses, heat residuals to dehydrate fruits, and the reservoirs—a result of well drilling for the plants—for fishing.³¹

Building an understanding of the gender aspects of climate change adaptation and mitigation enhances comprehensive planning and programming that is effective, efficient, and equitable. This is increasingly recognised by global policy spheres, regional and national strategies, international development agencies including across the United Nations, and—vitaly importantly—across funding mechanisms including the major climate finance mechanisms. According to the Green Climate Fund, for example, in its Gender Policy and Action Plan,³² gender and climate change matters because:

- Women's mortality from climate-related disasters is higher [and] women are more vulnerable to waterborne diseases;
- Various manifestations of climate change, such as drought, exacerbate fuelwood and water scarcity and add more to the domestic burdens of women than to those of men;
- As women tend to rely more on natural resources for their livelihood, the decline in land and biomass productivity affects women more than men, especially in rural areas, and exacerbates their poverty;
- In urban areas, after climate-related disasters, it is harder for poor women than

for poor men to recover their economic status and welfare; and

- Women, as well as men, significantly contribute to combating climate change as knowledgeable small-scale farmers and leaders of climate-change adaptation and mitigation initiatives.

Women often lead the way in adapting to climate change impacts, but they also play a key role in mitigating climate change by optimising energy efficiency, using low-emission energy sources and techniques, and influencing a household's and community's consumption patterns.³³

Billions of women around the world, as home-makers, farmers, land-managers and consumers, make decisions every day that influence the amount of carbon that is released into the atmosphere. Women make 80% of daily purchasing choices for families and take the lead in households combating climate change.³⁴ Disregarding women's role as energy managers—whether at household level, or the community, regional and national level, and as key actors in the energy sector, particularly with renewable energies, including their participation in the production, development, marketing, and servicing of new low-emission energy fuels and technologies limits the uptake and success of implementing these mitigation strategies. Overlooking women's contributions to addressing climate change results in lost opportunities to achieve multiple benefits in the environment, health, security and other sectors.

31 UNFCCC. (2015). *Momentum for Change: Women for results*. http://unfccc.int/secretariat/momentum_for_change/items/7318.php

32 GCF. (2015). *Gender policy and action*. http://www.gcfund.org/fileadmin/00_customer/documents/MOB201503-9th/10_-_Gender_Policy_and_Action_Plan_20150304_fin.pdf

33 Rojas, A.V., Schmitt, F. M. & Aguilar, L. (2012). *Guidelines on renewable energy technologies for women in rural and informal urban areas*. San Jose, Costa Rica: IUCN & ENERGIA. http://www.genderandenvironment.org/index.php?option=com_docman&task=search_result&Itemid=535

34 OECD. (2007). *Good practices in promoting sustainable consumption in OECD Countries*. Paris, France: OECD.

Policymakers, programmers, and practitioners at all levels, in all regions, increasingly understand the links between gender equality and climate resilience. This is evidenced by the swell of agreements under the UNFCCC that include gender—and that are specifically on gender. Up from zero references just a decade ago, the Parties to the UNFCCC have agreed now on more than 50 decisions that include women’s and gender considerations.

When it comes to decision-making and implementation towards building resilient communities in the face of climate change, for example, the full and meaningful participation of women is essential. The Parties to the UNFCCC affirmed the importance of women’s equal participation in climate change decision-making spheres via Decision 23/CP.18,³⁵ which promotes women’s leadership and balanced representation on delegations to the UNFCCC. Women’s equitable participation has been promoted in various other decisions, as well, in recent years.

Parties have moreover recognised the need for gender-responsive climate policymaking and programming across all aspects of the climate negotiations, and particularly via the Lima Work Programme on Gender, a decision of the 20th Conference of Parties (COP) in Lima in 2014, which put forth a two-year work programme on gender and climate change. The Paris Agreement from the 21st COP in Paris in 2015 was another important step, including by integrating gender concerns in the preamble and in the articles related to adaptation, among others.

These agreements inclusive of gender consideration has been made possible by increasing evidence allowing for a clearer understanding of the linkages between gender and climate change, especially on adaptation. In contrast, the linkages between gender and mitigation have been, and continue to be, less intuitive but equally important. Mitigation issues go beyond addressing vulnerability, but demand that women and men alike be considered as stakeholders, beneficiaries, innovators, and agents for positive change. The tide is beginning to turn however; for example, in a 2015 analysis of early Low Emissions Development Strategies (LEDS) and the (then submitted) 140 INDCs, an increase in the numbers of Parties recognising gender concerns in both adaptation and mitigation was evident.³⁶

Understanding women, women’s experience and expertise, and women’s roles and opportunities—as well as gender equality itself—as powerful drivers of change is critical to solving the climate crisis.

5. COUNTRY OVERVIEW: THE CONTEXT FOR ADDRESSING GENDER AND CLIMATE CHANGE IN ZAMBIA

Zambia is a landlocked sub-tropical country located between latitudes 8° and 18° South of the Equator and between longitude 22° and 34° east. Zambia shares borders with eight countries: Democratic Republic of the Congo (DRC) to the north; Tanzania to the north-east; Malawi to the east; Mozambique, Zimbabwe, Botswana and Namibia to the

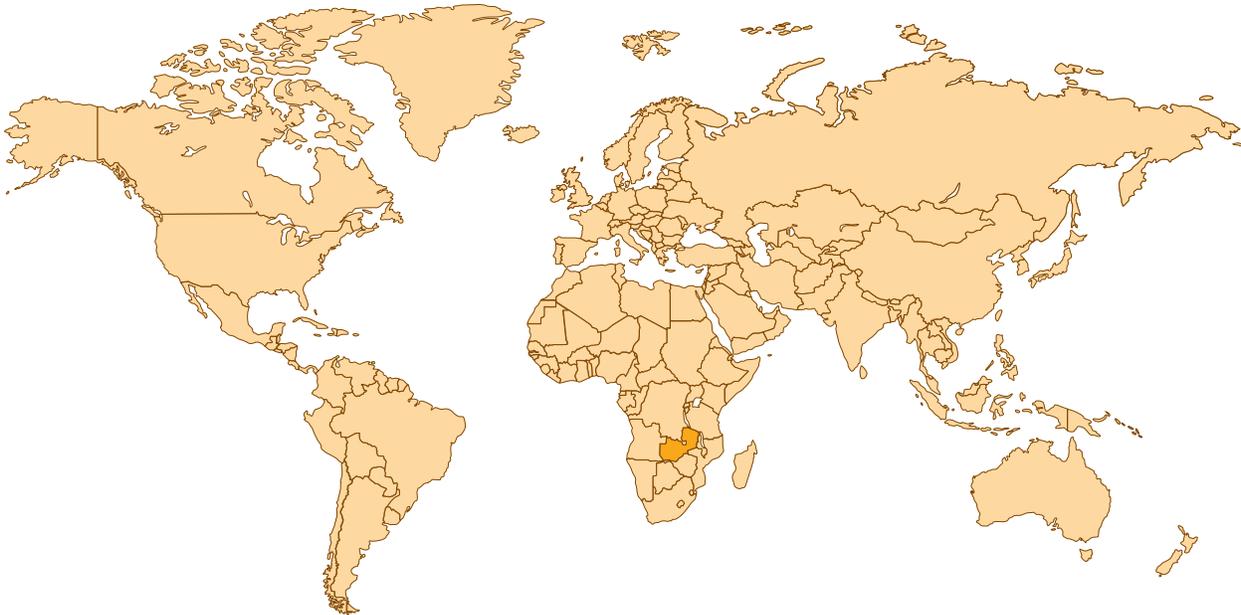
³⁵ See: https://unfccc.int/files/bodies/election_and_membership/application/pdf/cop18_gender_balance.pdf

³⁶ IUCN. (2015). *Gender in mitigation actions: An EGI brief*. https://portals.iucn.org/union/sites/union/files/doc/gender_in_mitigation_actions_feb_2016.pdf

south; and Angola to the west. The capital city is Lusaka, in the south-central part of Zambia. The population is concentrated mainly around

Lusaka in the south and in the region known as the Copperbelt Province in northwest, which borders DRC.

FIGURE 1: GEOGRAPHICAL LOCATION OF ZAMBIA



Zambia has a total land surface area of 752,972 km² with an average altitude of 1,200m above sea level. The altitude varies with highest parts in the northeast (1,500m - 2,000m above sea level), and the lowest parts in the south (350m – 600m above sea level), which is at the confluence of the Zambezi and Luangwa Rivers in Luangwa District.

The eastern and southern parts of the country are characterised by deep rift valley systems, which form part of the East African Rift Valley. The valley troughs are relatively flat but have hilly escarpments. The rift valley system comprises the Luangwa and the middle Zambezi valley. The predominant escarpment system is the Muchinga.

5.1. Topography

Most of the landmass in Zambia is a high plateau lying between 910m and 1,370m (3,000–4,500ft) above sea level. In the northeast, the Muchinga Mountains exceed 1,800m (5,900ft) in height. Elevations below 610m (2,000ft) are encountered in the valleys of the major riverine systems. Plateau land in the North Eastern and Eastern parts of the country is broken by the low-lying Luangwa River, and in the western half by the Kafue River. Both rivers are tributaries of the upper Zambezi, the major waterway of the area. The frequent occurrence of rapids and falls prevents through-navigation of the Zambezi.

There are three large natural lakes—Bangweulu, Mweru, and Tanganyika—all in the northern area. Lake Tanganyika is the largest with an area of about 12,770km² (32,893mi²). Lake Bangweulu and the swamps at its southern end cover about 9,840km² (3,799mi²) and are drained by the Luapula River. Kariba, one of the world’s largest manmade lakes, is on the southern border; it was formed by the construction of the Kariba Dam on the Zambezi River.

5.2. Agro-ecological zones

Zambia is divided into three agro-ecological zones: Regions I, II and III (Figure 2).³⁷

Region I covers the eastern and southern rift valley areas and also includes the southern parts of western and southern provinces. It is characterised by hot and dry climatic conditions. It has a short growing period (season) of between 80 and 120 days. The rainfall is highly variable and unreliable within one rainy season, putting stress on agricultural development. The rainfall intensities in this

region are very high. These can induce the process of soil erosion if the land is devoid of vegetation through erosivity. The steep slopes along the escarpments have high erosion risk.

Region II covers the Sandveld Plateau Zone of Central, Eastern, Lusaka and Southern Provinces. The region is a medium rainfall zone and has a growing season of 120-150 days. This is the most productive zone in the country. However, use of machinery, prolonged crop production over a period of time on the same portions of land and continuous application of chemical fertilisers has degraded and affected the natural soil qualities.

Region III is part of the Central African Plateau covering Northern, Luapula, Copperbelt and North Western Provinces, as well as parts of Serenje and Mkushi Districts. The region is a high rainfall area and has a growing season of up to 190 days. The high rainfall has resulted in considerable leaching, and the soils are highly acidic, limiting the range of crops that can be grown in this region, especially if special farming practices are not employed.

FIGURE 2: AGROECOLOGICAL REGIONS I, II, IIb AND III, AND ASSOCIATED RAINFALL



37 Figures and descriptions come from, e.g. http://www.fao.org/ag/agp/agpc/doc/counprof/zambia/zambia.htm#_Toc131995466

5.3. Geo-political and historical context

Zambia has been inhabited for thousands of years by hunter-gatherers, evolving it into a multi-ethnic country. After visits by European explorers starting in the 18th century, Zambia became the British Colony of Northern Rhodesia towards the end of the 19th century. This came to be through concessions and agreements between local paramount chiefs and representatives of the British Empire. For most of the colonial period, Zambia was governed by an administration appointed from London with the advice of the British South Africa Company. On 24 October 1964, the country declared independence from the United Kingdom, and Prime Minister Kenneth Kaunda became the first head of state of the Republic of Zambia. The new name of Zambia was derived from the Zambezi River, which flows through the western region of the country.

The Constitution of Zambia has undergone a series of reforms since its inception, with the most recent version being adopted in 1990 and reformed in 1996. A revision committee submitted another revision in 2013. The Constitution, in its third line, promotes the “equal worth of women and men.”³⁸

5.4. Government³⁹

Zambia has a number of political parties and associated leaders. At the time of this ccGAP, in February 2016, the President of Zambia is His Excellency Edgar Lungu, of the Patriotic Front party; he previously served as Minister of Justice and Minister of Defence.

Ten provinces make up Zambia’s administrative divisions: Central, Copperbelt, Eastern, Luapula, Lusaka, Muchinga, Northern, North-Western, Southern, and Western. The legislative branch of the Government is comprised of a National Assembly with 158 seats, 150 of which are members elected by popular vote, and eight members are appointed by the president, all serving five-year terms.

The legal system is a mix of English common law and customary law; judicial review of legislative acts in an ad hoc constitutional council. The judicial system is supported by its highest courts: the Supreme Court (consisting of nine judges appointed by the president and ratified by the National Assembly); and Subordinate courts, including the High Court, magistrate’s courts and local courts.

Traditional chiefs and their headmen still influence and to some extent govern communities in that they demand tremendous respect. Decision-making power is limited in the context of the official national government, except for the allocation of and control of lands.⁴⁰

Zambia is an extraordinarily peaceful country and has benefitted from a sound democracy. In its 50 years or so of independence, it has never experienced any kind of internal ethnic conflict, as have some of its neighbours. The country’s motto, One Zambia – One Nation, promulgated by the first President, remains the unifying philosophy.⁴¹

38 http://www.theodora.com/wfbcurrent/zambia/zambia_government.html

39 Index Mundi, (among other online sources.) (2015). *Country profile: Zambia*. http://www.indexmundi.com/zambia/government_profile.html

40 World Bank. (2015). *Zambia overview*. <http://www.worldbank.org/en/country/zambia/overview>

41 Rasmussen, P.E.(2015). *African economic outlook: Zambia*. African Development Bank, Zambia Field Office.

5.5. People, population dynamics and poverty

In 2015, Zambia's population reached just over 15 million people⁴² and is growing at a rate of 3.1% per annum.⁴³ The population is projected to grow to around 22 million people by 2030.⁴⁴ Zambia has a population density of 21 people per square kilometre of land,⁴⁵ with higher density in many localised areas due to immigration and urbanisation. Zambia is considered one of the most rapidly urbanising countries in Sub-Saharan Africa and the urban population is expected to double in the next 23 years.⁴⁶

Two thirds of the country's inhabitants live in rural areas, of which about 80% live under United Nations (UN)-defined levels of poverty.⁴⁷ Poverty is unevenly experienced across the regions: in provinces such as the Copperbelt, where mining delivers strong economic returns, about 20% of the population is estimated to fall under the poverty line, and in Lusaka, that number is around 34%, according to the World Bank and its sources. With a predominantly young and rural population, and 67% of the labour force engaged in agriculture, Zambia will need to focus on its largely untapped agricultural potential (according to local sources) and improve the rural economy in order to accelerate growth and reduce poverty.

Between 1960 and 1980, high fertility rates and low mortality rates contributed to significant population growth. However, in recent decades, the HIV and AIDS pandemic is threatening the survival of many Zambians, as 14.3% of adults (ages 15-49) in Zambia are HIV positive and often lack the proper access to life-saving medication.⁴⁸ The International Fund for Agricultural Development (IFAD)'s Rural Poverty Portal⁴⁹ notes that the HIV/AIDS epidemic has lowered Zambia's life expectancy to 38 years.

The incidence of disease amongst the populations is the fundamental cause of human suffering and increase in absolute poverty. Data shows that malaria affects the whole country, but with greater incidence in rural areas. Children are most at risk.

According to the 2009 World Refugee Survey, published by the U.S. Committee for Refugees and Immigrants, Zambia hosted 88,900 refugees and asylum seekers.⁵⁰ The majority of refugees in the country came from the DRC, Angola and Rwanda.

Zambia's population comprises approximately 72 ethnic groups, most of which speak Bantu. Almost 90% of Zambians belong to nine main ethnolinguistic groups: the Nyanja-Chewa, Bemba, Tonga, Tumbuka, Lunda, Luvale, Kaonde, Nkoya and Lozi.

42 CIA Fact book. (2015). *Zambia*. <https://www.cia.gov/library/publications/the-world-factbook/geos/za.html>

43 World Bank. (2015). *Zambia*. <http://data.worldbank.org/country/zambia>

44 World Bank. (2015). *Climate change adaptation portal: Zambia dashboard overview*. http://sdwebx.worldbank.org/climateportalb/home.cfm?page=country_profile&CCode=ZMB

45 World Bank. (2015). *Indicators: Population density*. <http://data.worldbank.org/indicator/EN.POP.DNST>

46 Central Statistical Office, Zambia. (2013). *Population and demographic projections 2011-2035*. <http://www.zamstats.gov.zm/report/Census/2010/National/Zambia%20Census%20Projection%202011%20-%202035.pdf>

47 World Bank. (2015). *Climate change adaptation portal: Zambia dashboard overview*. http://sdwebx.worldbank.org/climateportalb/home.cfm?page=country_profile&CCode=ZMB

48 UNICEF. (2015). *HIV and AIDS*. http://www.unicef.org/zambia/5109_8459.html

49 IFAD. (2009). *Rural poverty in Zambia*. <http://www.ruralpovertyportal.org/country/home/tags/zambia>

50 U.S. Committee for Refugees and Immigrants (USCRI). (2009). *World refugee survey 2009: Zambia*. http://www.refugees.org/resources/uscri_reports/archived-world-refugee-surveys/2009-wrs-country-updates/zambia.html

Zambia is officially a Christian nation, but a wide variety of religious traditions exist. Traditional religious thought blends easily with Christian beliefs in many of the country's syncretism churches. Christian denominations include: Roman Catholic, Anglican, Pentecostal, New Apostolic Church, Lutheran, Seventh Day Adventist, Jehovah's Witnesses, and a variety of Evangelical denominations, which grew, adjusted and prospered from the original missionary settlements (Portuguese and Catholicism in the east from Zambia) and Anglicanism (English and Scottish influences) from the south.

Zambians value a rich cultural heritage, including for example numerous traditional ceremonies that take place throughout the year, celebrating and paying tribute to local customs, social life, natural cycles, resources and history, among other things.⁵¹

5.6. Economy

With Zambia's abundant natural resources, forests, wildlife, and minerals provide the backbone to Zambia's economy. Mining and agriculture, along with construction, transport and trade, comprise the key economic pillars.⁵² Tourism is viewed as an increasingly important sector for growth. Between 2006 and 2009, the country's economy grew at a rate of 6.1%

annually, up from 4.8% between 2002 and 2005.⁵³ After a dip in 2013, mainly due to reduced copper prices, 2015 saw a steady growth of 6%, and inflation is expected to fall below 7% by 2017.⁵⁴

The World Bank forecasts project that, after a period of concerning decline, the Zambian economy is on the rebound, with strong growth anticipated in the next few years. While in 2014 the UN still classified Zambia as a Least Developed Country,⁵⁵ in 2011 the World Bank classified the country as a Lower Middle Income Country.⁵⁶ The Government itself has put forth a plan, or a "vision," to become a prosperous, middle-income country by 2030.⁵⁷

Despite the potentials of other natural resources, as well as the erratic world copper prices over recent years, the mining sector will continue to play a key role in the economic development of the country. Zambia exhibits heavy dependence on copper mining for the country's export earnings, government revenue, source of employment and GDP (see more on mining, below).

The vast majority of the population depends on subsistence agriculture and, with a notably and seriously high poverty rate, much of the poorest populations are unable to meet their minimum dietary needs.⁵⁸

51 ZEMA, GRID-Arendal, GRID-Sioux Falls, UNEP. (2012). *Zambia outlook of our changing environment*. <http://cld.bz/Boft06r#50/z>

52 ZEMA, GRID-Arendal, GRID-Sioux Falls, UNEP. (2012.) *Zambia outlook of our changing environment*. <http://cld.bz/Boft06r#50/z>

53 *ibid.*

54 Rasmussen, P.E. (2015). *African economic outlook: Zambia*. African Development Bank, Zambia Field Office.

55 UNCTAD. (2014). *Least developed countries report 2014*. http://unctad.org/en/PublicationsLibrary/ldc2014_en.pdf

56 World Bank. (2015). *Data by country: Zambia*. <http://data.worldbank.org/country/zambia>

57 Republic of Zambia. (2006). *Vision 2030*. <http://unpan1.un.org/intradoc/groups/public/documents/cpsi/unpan040333.pdf>

58 IFAD. (2009). *Rural poverty in Zambia*. <http://www.ruralpovertyportal.org/country/home/tags/zambia>

The agricultural sector in Zambia contributed 12.6% to the country's GDP in 2012⁵⁹ and, in the face of reduced mining and associated copper exports, the International Monetary Fund's Poverty Reduction Strategy Paper (PRSP) on Zambia identified the agriculture sector as the driving force for economic growth and broad based poverty reduction.⁶⁰

Small-scale farmers make up 85% of the agriculture sector and utilise 75% of the cultivated land in Zambia, and 71% of all Zambians, including 77% of Zambian women, engage in agricultural activities.⁶¹ Although agriculture is considered to be one of the major revenue earners for Zambia, critics say that food security concerns are mainly because the current National Agricultural Policy for 2004-2015 and strategic framework are not conducive to promoting agricultural production and food security for the majority of small-scale farmers who are resource-poor, have low production and productivity rates, and are food-insecure for more than a quarter of the year. This analysis may be particularly worthy of attention in the context of climate change, which will undeniably put added stress on these already vulnerable populations.

According to Zambia's Agriculture Analytical Report, there are about 1.08 million rural agriculture households, 19% of which are female-headed households (FHH).⁶² The same

report highlights that recent national policies to remove agriculture subsidies and increase privatisation in the sector disproportionately affect women farmers because their limited income and purchasing power is further eroded due to increased prices of farm inputs. This has generally had a negative effect on food security of FHH.

Not unlike the development challenges of many countries in the region, the poor socioeconomic framework coupled with high population growth rates have had negative impacts on the status and management of Zambia's natural resources.

5.7. Development

While Zambia has experienced economic growth in recent years, as discussed, benefits of its development are unevenly felt. The country still experiences widespread and profound poverty—a cyclical cause-and-effect of various factors noted briefly here, including lack of physical country-wide infrastructure and investment to combat disease, diversify livelihoods, and—not least—build resilience to a changing climate.

Poverty reduction measures have been in place, but progress has fallen short of meeting Millennium Development Goals targets.⁶³ A Civil Society Review of Progress towards the Millennium Development Goals⁶⁴ emphasised

59 Tembo, S. & Sitko, N. (2013). *Technical compendium: Descriptive agricultural statistics and analysis for Zambia (Working Paper No. 76)*. <http://fsg.afre.msu.edu/zambia/wp76.pdf>

60 IMF. (2007). *Zambia: Poverty reduction strategy paper (PRSP)*. <https://www.imf.org/external/pubs/ft/scr/2007/cr07276.pdf>

61 Central Statistical Office of the Republic of Zambia. (2011). *Labour force survey report: 2008*. <http://www.zamstats.gov.zm/report/Demo/2008%20Labourforce%20Survey%20Report.pdf>

62 Central Statistical Office of the Republic of Zambia. (2003). *Zambia 2000 census of population and housing: Agriculture analytical report*. http://www.zamstats.gov.zm/about_us/abt_publications.htm

63 ZEMA, GRID-Arendal, GRID-Sioux Falls, UNEP. (2012). *Zambia outlook of our changing environment*. <http://cld.bz/Boft06r#50/z>

64 Commonwealth Foundation. (2013). *Civil society review of progress towards the Millennium Development Goals in commonwealth countries: National report-Zambia*. UN Millennium Campaign.

uneven gains and persisting gaps—and, (a concerning point indeed from the standpoint of this ccGAP) a “regression” in meeting the targets on environmental sustainability, for example in the rapidly increasing rate of deforestation and lack of necessary improvement in sanitation infrastructure. The report also emphasised a reliance on quantitative rather than qualitative data, clouding the view of how Zambians perceive the improvements of development initiatives in their everyday lives.

According to the 2015 African Economic Outlook,⁶⁵ Zambia’s development has largely followed the colonial-era railways that connect the Copperbelt in the north with Livingstone in the south, through the capital city, Lusaka. Over the years, this has resulted in a band of development, with the rural regions becoming increasingly isolated, relatively. The Sixth National Development Plan (2011-2015) does emphasise the importance of inclusive spatial planning.

Gender is also presented as a cross-cutting issue in the country’s Sixth National Development Plan, which notes that mainstreaming gender is crucial in achieving social-economic development.

5.8. Environment: challenges and sustainability

Zambia’s abundance of natural resources has been, as the proverbial saying goes, both a blessing and a curse: its rich biodiversity and plethora of minerals have provided the

backbone of the Zambian economy for decades, while the overdependence on and misuse of natural resources have arguably trapped portions of the population in cycles of poverty—which climate change threatens to exacerbate.

Since 2000, there has been an increase in occurrences and intensity of floods and droughts in Zambia.⁶⁶ Climate variability and change has become a major threat to sustainable development in Zambia. The country is already experiencing climate induced hazards which include drought and dry spells, seasonal and flash floods, and extreme temperatures. Some of these hazards, especially the droughts and floods have increased in frequency and intensity over the past few decades and have adversely impacted food and water security, water quality, energy, and consequently the livelihoods and lives of the people, especially in rural communities.

Recent climate trends based on records from 1960 to 2003 indicate that mean annual temperature has increased by 1.3°C in Zambia since 1960, an average rate of 0.34°C per decade.⁶⁷ On the other hand, the mean rainfall over Zambia has decreased by an average rate of 1.9 mm/month (2.3%) per decade since 1960. The future trends in the country are towards a higher average temperature, a possible decrease in total rainfall, and some indication of heavy events of rainfall. An assessment of potential climate impacts shows that they will seriously undermine the efforts to improve the livelihoods of Zambians if left unaddressed.⁶⁸

65 Rasmussen, P.E. (2015). *African economic outlook: Zambia*. African Development Bank, Zambia Field Office.

66 GRZ, UNDP Zambia & GEF. (2007). *Formulation of the National Adaptation Programme of Action (NAPA) on climate change*. http://climatechangezambia.org/zambia_national_adaptation_report.pdf

67 Slunge, D. & Wingqvist, G. Ö. (2010). *Zambia environmental and climate change policy brief*. University of Gothenburg: Gothenburg, Sweden. <http://sidaenvironmenthelpdesk.se/wordpress3/wp-content/uploads/2013/04/Zambia-Environment-and-climate-change-policy-brief-EEU-Final-version-2010.pdf>

68 Ministry of Tourism, Environment and Natural Resources (MTENR). (2007). *Formulation of the National Adaptation Plan of Action (NAPA) on Climate Change*. Final Report. MTENR.

The assessment further analysed the negative impacts of climate change on key economic sectors including water, agriculture, forestry, wildlife, tourism, mining, energy, infrastructure and health. Further studies have estimated GDP loss over a 10-20 year mid-term planning horizon for agriculture productivity and its associated effects on poverty levels, the potential impact of an energy crisis, the higher cost of treating climate related diseases such as malaria and malnutrition, and the loss of natural resources which provide critical ecosystem services to urban, peri-urban and rural communities.⁶⁹

Zambia's deforestation rate is well above the global and regional average—250,000-300,000 hectares lost per year,⁷⁰ placing immense strain on forest biodiversity and forest resources used to sustain communities. However, new evidence from the Forest Reference Emissions Level report released early in 2016 to UNFCCC cited much lower rates, average deforestation from 2000 to 2010 was 109,000ha per annum and from 2010 to 2014 the average deforestation rate was 124,000ha per annum.⁷¹ Between 1990 and 2005, it is estimated that Zambia's deforestation activities contributed 106 million tonnes of carbon dioxide (CO₂) annually, making it the 9th largest emitter of CO₂ from deforestation in the world during that time period.⁷² Land degradation and deforestation also negatively impact climate and water regulation systems, threatening seasonal streams and permanent rivers as well as increasing risk for floods and droughts. Tenure issues, illegal logging, fires, fuel harvesting and agricultural and mining activities, as well as institutional, policy and

legal barriers, exacerbate deforestation and land degradation. These issues severely impact food security, farming practices and adaptive capacity of vulnerable populations.

Zambia has a significant diversity of biological resources and ecosystems. Ecosystem complexity is a function of climatic elements including rainfall, temperature, evapo-transpiration, hours of sunshine and total solar radiation. Aside from providing habitat to thousands of animal and plant species, many Zambians depend on healthy ecosystems to sustain their livelihoods. Food access, water purification and regulation, and building materials are a few of the ecosystem services threatened by increased degradation and loss of biodiversity. Tourism in Zambia—which is largely dependent on the diverse wildlife unique to the area—could also decline as biodiversity continues to wane due to natural resource constraints available to wildlife.

Indoor and outdoor air pollution are issues of environmental safety and health in Zambia. Indoor air pollution mostly occurs from burning biomass (fuelwood) for cooking and heating purposes and disproportionately impacts women and children. Outdoor air pollution poses a problem for urban centres and mining sites, as well as surrounding communities. Zambia is home to one of the world's top-ten most polluted places in the world: a mining site (see below, a special section on Mining).

While Zambia is naturally well-stocked with water resources, both in-ground and surface water,

69 Zambia's Intended Nationally Determined Contribution to the UNFCCC. (2015).

70 UN-REDD. (2015). *Zambia*. <http://www.un-redd.org/UNREDDProgramme/CountryActions/zambia/tabid/1029/language/en-US/Default.aspx>

71 Kasaro, D. (2016). *National workshop presentation on climate change in Zambia*. PowerPoint presentation at National Stakeholders ccGAP workshop.

72 World Bank. (2010). *Development and climate change, World Development Report 2010*. Washington, D.C.

some of the areas in the country experience severe water shortages. This is mainly due to human activities—which have tended to induce erosion and sedimentation—in combination with climate variability and variations in hydrogeology from the northern part of the country to the southern, and along the valley regions. The effect of variable climatic factors such as El Niño, poor precipitation, high temperatures and excess evapo-transpiration has in a number of years culminated into periods of extended drought. Lack of infrastructure is also an issue.

Currently, water demand for local populations and economic activities is not being met. About 40% of the available water resources are being used, with 90% of that going to hydropower generation.⁷³ Water pollution is also a major issue with mining, industrial, agricultural, and municipal practices degrading local water conditions. Sanitation is problematic in urban areas in particular, where high population density puts latrines in close proximity to wells and hand pumps, thus leading to surface-level pollution and contamination, with serious health consequences.

Land contamination from solid waste disposal, a relatively new issue in environmental protection in Zambia, has continued to grow as an environmental problem. Management of domestic and industrial waste has raised serious concerns especially in urban areas where there is little infrastructure to deal with waste management, and recycling. Much damage is caused mainly by chemical fertilizer plants, textile factories, edible oil factories, tanneries, and concrete factories.

For rural areas, significant underlying causes of environmental degradation in Zambia have been inadequate institutional capacity and ill-defined property rights. Much of the land in Zambia is under traditional tenure or ‘open areas’ and administered by traditional rulers, who rarely have clearly defined property rights since the community usually has open access to natural resources. For many years in these areas, there has been no national land-use planning framework to specify how land should be allocated for various purposes and what land should be reserved for different future uses at the national, provincial and district levels.

Land dereliction manifesting as unvegetated tailings dumps is yet another problem commonly observed in mining areas. Closely associated with them is the added problem of land subsidence as recently observed in the Copperbelt Province. Taking Kitwe as a sample, many houses there are developing framing cracks. This is caused by shearing of foundations by sinking motion, as a result of mining.

From a gender perspective, it is well known that women and men have different needs, and knowledge, as well as different roles and responsibilities, when it comes to relying upon and managing natural resources. Women are often the primary caretakers of local biodiversity, while at the same time heavily dependent on it for day-to-day survival.

The ability of women and men to derive formal income or reliable, sustainable livelihoods from Zambia’s abundant natural resources also differs: men are the ones predominantly

73 Slunge, D. & Wingqvist, G. Ö. (2010). *Zambia environmental and climate change policy brief*. University of Gothenburg: Gothenburg, Sweden. <http://sidaenvironmenthelpdesk.se/wordpress3/wp-content/uploads/2013/04/Zambia-Environment-and-climate-change-policy-brief-EEU-Final-version-2010.pdf>

employed in the mining sector, for example, while tourism is seen as an opportunity to increase the equality of employment opportunities for women and men, across regions. Caring for Zambia's precious nature preserves (including national parks and heritage sites) and wildlife may also be a formal opportunity for women's empowerment and increased economic security.

5.8.1. Mining⁷⁴

Despite its damaging impact on environmental sustainability—for example from disruption of ecosystems and loss of biodiversity; intensive water and electricity consumption; greenhouse gas emissions; acid rain; soil, water and air contamination and pollution; formation of sinkholes; myriad health impacts on workers and nearby (especially downstream) communities; and release of greenhouse gases—mining remains a driving force in many countries' economies, and especially Zambia's.

While the economic returns are arguably substantial, they do not come without consequences, which are costly in more ways than one. The 2006, 2007 and 2013 Blacksmith Institute Reports⁷⁵ included Kabwe, Zambia, for example, as among the top ten most dangerously polluted places in the world, the toxic threat to Kabwe due to intensive mining and specifically the heavy metals (mostly zinc and lead) tailings affecting local water supply. This kind of toxicity has a heavy impact on all local populations, and especially pregnant

women, infants and children, and chronically ill individuals.

According to Index Mundi,⁷⁶ which ranked countries' mining activity by their mineral rents—that is, “the difference between the value of production for a stock of minerals at world prices and their total costs of production”—Zambia is sixth in the world in terms of its economic dependence on mining. In 2013, 16.49% of its GDP drew from mining, predominantly for copper.

According to the World Bank⁷⁷ in June 2015, taxes paid by mining companies contributed 16% of revenue over the last four years and that revenue is expected to increase, possibly doubling by 2019 with new investments.

This intensive economic monoculture has been the mainstay in Zambia's economic portfolio for many decades, both prior to and upon its Independence (around which time the percent of GDP from mining peaked at over 35%, in the early 1970s), and thereafter through today, despite the intense fluctuations in revenue based on world market prices.

Dramatic dips in prices have wrought havoc on Zambians' livelihoods, compounded by the fact that lower GDP has forced the Government to reduce spending on important social protections and welfare programmes. Reduced national resources have also resulted in deteriorating physical infrastructure.

74 Mining was emphasised by the Government and in discussions by ccGAP workshop participants as enormously important to the development and prosperity of the country. While mining ended up not being addressed in the action plan, background is offered here as a holding space for potential next steps.

75 Blacksmith Institute. (2013). *Top ten toxic threats in 2013: Clean-up, progress, and ongoing challenges*. <http://www.worstpolluted.org/>

76 Mundi Index. (2013). *Mineral rents (% of GDP)–Country ranking*. <http://www.indexmundi.com/facts/indicators/NY.GDP.MINR.RT.ZS/rankings>

77 World Bank. (2015). *Making mining work for Zambia*. <http://www.worldbank.org/en/news/video/2015/07/14/making-mining-work-for-zambia-economic-health-environmental-nexus-of-the-copper-mining-economy>

Privatisation of mining companies in the 1990s allowed the Government to avoid paying major debts during the global economic downturn, but workers still suffered the impacts of a dragging mining economy. During periods of fluctuation in individual mining companies, such as when a company threatens to pull out of a country, serious socioeconomic impacts ripple through natural resource-dependent communities at all levels.

Today, the percent of GDP from mining surpasses the level of dependence in the most recent peak in 1989.⁷⁸

Mining, gender, and community concerns

According to UN-Habitat, or the United Nations Human Settlements Programme, as reported by Reuters,⁷⁹ 94% of Zambian land is under customary control, at the decision-making control of traditional chiefs. Chiefs control parcels up to 250 hectares, and larger parcels then fall under Government control.

This is a particularly concerning context for women and the country's dependence on mineral extraction: when communities sell parcels of land to mining companies, families are resettled elsewhere. Myriad issues result, even when resettlement firms take precautions to carefully explain resettlements to the families. Once a resettlement has occurred, families—and women especially—dependent upon subsistence agriculture, collecting wild foodstuffs, livestock, and other natural resource-based livelihoods—have a difficult time reestablishing a way of life. Often, sociocultural norms prohibit women from participating in

resettlement meetings, speak in languages they do not fully understand, or prohibit them from asking questions or otherwise engaging.

On the other hand, the impacts of mining on natural resources—such as a fresh water supply—lead some communities to beg to be relocated, to no avail. Women's reproductive systems, young children and the elderly, as well as the chronically ill are, as elsewhere mentioned, extremely vulnerable to these impacts.

The economic gains from mining are unevenly experienced across the country: the copper-rich provinces, for example, have far lower poverty overall poverty rates, while disaggregated breakdowns of how local communities benefit from mining income are not optimally available. Some studies show that mining comprises only 10% of formal employment, mostly men's.

It is known that mining is predominantly a men's occupation, while there have been political calls for women to be more actively engaged in the mining sector. The Fifth National Development Plan of Zambia made increasing the numbers of women engaged in the mining sector a specific strategy.

Mining and climate change

While the very act of extracting minerals from deep within the earth has implications for fragile ecosystems, mining—and particularly activities such as copper smelting—releases emissions into the atmosphere, causing acid rain, soil erosion and crop damage. These are particularly daunting impacts on a population

78 Mundi Index. <http://www.indexmundi.com/facts/indicators/NY.GDP.MINR.RT.ZS/compare#country=zm>

79 Mis, M. (2015). *Women pay the price for Zambia mining expansion*. <http://www.reuters.com/article/zambia-mining-women-idUSL5N10V47V20151012>

so deeply dependent on agriculture, which—ironically—is the second most important economic sector.⁸⁰

Mineral pollution has found its way into water supplies and soil, contaminating food and endangering communities' health.⁸¹ However, responsible extraction practices, regulation and governance arguably manage these impacts to some extent, as other countries have shown.⁸² There are examples of climate change adaptation measures that many mining industry associations are calling for, not only for the companies to adapt themselves to the realities of climate change but to build resilience of the countries and communities who host them.⁸³

6. GENDER INEQUALITY

Zambia, like many countries and especially those in less-industrialised parts of the world, suffers from high levels of social and economic inequality—and in particular, gender inequality. Gender inequality hampers a country's ability to make use of the full spectrum of capabilities of a population, and it restricts the opportunities of younger generations to excel.

Women constitute 52% of the country's population but at the same time face severe difficulties in fully participating in various local and national development processes and programmes. Myriad policies emphasise that society demonstrates a clear bias toward men, who continue to disproportionately access

various services and benefits, including formal employment. Efforts to change the status of women in Zambia have continued to be frustrated by a number of legal impediments, inadequate political will, and inadequate resources; critics say one of the fiercest problems is lack of gender-responsive budgeting,⁸⁴ which the Ministry of Gender is working hard to overcome. The net result of unrealised progress is that women continue to bear the harshest brunt of poverty, HIV/AIDS and other health epidemics, and a general decline in the standards of living. This situation will be further worsened by the impacts of climate change.

While policy processes have recognised the importance of addressing these inequities and inequalities, implementation gaps persist. Zambia had promoted the equal value of women and men in its Constitution and various agreed legislation that protects women's rights and empowerment, but gender inequality in Zambia—which, in the lived reality of people in every region, is experienced via a mixture of traditional sociocultural practices as well as statutory protections—is very high. Differentiated conditions exist in urban, peri-urban, and rural locales.

The OECD's Social Institutions and Gender Index (SIGI), among the most well-known international indices, is a cross-country measure of discrimination against women in social institutions (formal and informal laws, social norms, and practices) across

⁸⁰ World Bank. (2015). *Zambia economic brief: Making mining work for Zambia*. <http://documents.worldbank.org/curated/en/2015/06/24646516/making-mining-work-zambia-zambia-economic-brief-making-mining-work-zambia>

⁸¹ World Bank. (2015). *Zambia economic brief: Making mining work for Zambia*. <http://documents.worldbank.org/curated/en/2015/06/24646516/making-mining-work-zambia-zambia-economic-brief-making-mining-work-zambia>

⁸² EBI Inc. *Climate change and the mining industry*. http://www.climatechangebusiness.com/Climate_Change_and_the_Mining_Industry

⁸³ *ibid.*

⁸⁴ Kachingwe, K. (2010). Zambia: Need to mainstream gender equality into all policies. <http://www.ipsnews.net/2010/06/zambia-need-to-mainstream-gender-equality-into-all-policies/>

160 countries. “The SIGI covers five dimensions of discriminatory social institutions, spanning major socio-economic areas that affect women’s lives: discriminatory family code, restricted physical integrity, son bias, restricted resources and assets, and restricted civil liberties. The SIGI’s variables quantify discriminatory social institutions such as unequal inheritance rights, early marriage, violence against women, and unequal land and property rights.”⁸⁵ The SIGI ranked Zambia seventh from the bottom in 2014, with a SIGI value of 0.4489, putting it in the “very high” category for discrimination and inequality. Comparable countries—those that ranked similarly—include Egypt, Niger, Somalia, and Chad.

On a scale of 0 (equal) to 1 (unequal), Zambia performed particularly poorly in the category of “restricted resources and assets,” receiving a value of 1. This stems mainly from Zambia’s two-tier land ownership system, consisting of both state and customary land.

Although the government passed the Land Act in 1996, which guaranteed women the possibility of being land-owners, the legislation simultaneously allows for customary laws to dictate land ownership which mainly confers land ownership to men.

Under customary law, men dominate the allocation, inheritance and use of land. Women generally lack control over land but may have access and user rights to the land. In 2010, the

government announced that it would enforce a previously enacted 30% quota on land allocation for women. However, according to the latest human rights report by the US Department of State, women lack sufficient credit to purchase land or property, throwing the efficacy of the quota into question. There is no recent data on the exact percentage of women’s land ownership compared to men’s.⁸⁶

United Nations Development Programme (UNDP)’s 2011 Human Development Report for Zambia⁸⁷ analyses the Gender Inequality Index (GII)—an index that shows the loss in human development due to inequality between men and women through an analysis of reproductive health, empowerment, and the labour market. The 2011 Human Development Report (HDR) concluded that gender inequality is deeply entrenched in Zambia’s society. The most recent (2014) GII score for Zambia is 0.587.⁸⁸ Overall, Zambia has a Human Development Index of 0.586 and ranks 139th out of 188 countries. This places Zambia in the “medium development” category.⁸⁹

In striving to meet Millennium Development Goal (MDG) 3—promoting gender equality and empowering women—Zambia takes pride in some government-level victories, including the adoption of the Anti Gender-Based Violence Act No. 1 of 2011 and the development of the Government of the Republic of Zambia - United Nations GRZ-UN Joint Programme on Gender-Based Violence in Zambia.⁹⁰ However,

⁸⁵ SIGI. (2014/2015). <http://www.genderindex.org/>

⁸⁶ SIGI. (2014). *Zambia*. <http://www.genderindex.org/country/zambia>

⁸⁷ UNDP. (2011). *Zambia HDR 2011*. http://hdr.undp.org/sites/default/files/nhdr_zambia_2011_en.pdf

⁸⁸ UNDP. (2014). *HDR: Zambia*. <http://hdr.undp.org/en/countries/profiles/ZMB>

⁸⁹ *ibid.*

⁹⁰ *ibid.*

challenges such as early pregnancy and marriage rates, lack of capacity for successful gender mainstreaming, low school completion rates for girls, the disproportional impact of HIV/AIDS on women, and “persistence of attitudes and beliefs that men are superior to women”⁹¹ acted as barriers to successfully reaching this MDG.

6.1. Marriage and family

According to the SIGI analysis, Zambia has a “very high” level of discrimination. The characteristics for counties in this category include the following:

The family code greatly discriminates against women: almost one third of girls younger than 19 are married, and women face severe discrimination in their parental authority and inheritance rights...there are serious infringements on their physical integrity matched by high levels of acceptance and prevalence of domestic violence: at least 44% of women have been victims of domestic violence, and 59% accept that it is justified under certain circumstances.⁹²

According to UNICEF, the United Nations Children Fund, 41.6% of girls are married by the age of 18, and 8.5% of girls are married by the age of 15.⁹³ The deeply entrenched gender expectations and behaviours are further demonstrated in an alarming understanding and

justification of domestic abuse: 61.9% of women and 49.3% of men justify wife-beating.⁹⁴

Gender-based violence (GBV) has continued to escalate and has been a source of concern for policymakers and activists. A positive step has been taken with regard to the enactment of the anti-GBV legislation to deal with this problem, but there remains a deepening need for advocacy towards sensitisation of the general public and especially leaders at the community and national level.

6.2. Employment and education

In 2014, women comprised 46.4% of the labour force; the labour force participation rate for women was 73% while for men, it was 86%.⁹⁵ Women are primarily employed in the agriculture and service sectors: as of 2012, 53% of female employment is in the agriculture sector, 43% in the service sector, 3% in the industry sector, and 1% in other sectors.⁹⁶ However, women farmers have limited access to agricultural resources such as land, equipment, seed, and fertilizer, as extension services are generally male oriented.⁹⁷ Eighty-eight percent of women and 70% of men faced vulnerable employment in 2012.⁹⁸

Gender inequality also exists in the education sector, as seen in differences in literacy and school completion rates. Of the adult population in Zambia, 61.4% is literate⁹⁹; only 52% of women are literate, with a gender parity index

91 *ibid.*

92 SIGI. (2014). *Synthesis report*. <http://www.genderindex.org/sites/default/files/docs/BrochureSIGI2015.pdf>

93 UNICEF. *Statistics: Zambia*. http://www.unicef.org/infobycountry/zambia_statistics.html

94 *ibid.*

95 World Bank. *Indicators*. <http://data.worldbank.org/indicator>

96 *ibid.*

97 UNDP. (2014). *HDR: Zambia*. <http://hdr.undp.org/en/countries/profiles/ZMB>

98 World Bank. *Indicators*. <http://data.worldbank.org/indicator> <http://data.worldbank.org/indicator>

99 UNESCO. *eAtlas of literacy*. <http://tellmaps.com/uis/literacy/#!/tellmap/-1003531175>

of 0.72, strongly disfavoured women.¹⁰⁰ Of the youth population (15-24 years), 70.3% of the male population is literate and only 58.5% of the female population is literate.¹⁰¹ According to Zambia's 2011 HDR 19% of adult women have secondary or higher levels of education, compared to 34% of their male counterparts.¹⁰² According to UNDP's Human Development Indicators, the mean years of schooling for females is 5.8 years compared to 7.3 for males.¹⁰³

6.3. Poverty, health, and hunger

The prevalence of HIV in 2014 for the total population was 12.4%; for males, 3.3%; and for females, 4.2%.¹⁰⁴ Not only is there a higher rate of HIV prevalence among women, women in Zambia assume the role of caretaker while maintaining their pre-existing roles of providing for food security and maintaining the household.¹⁰⁵ This places an extra burden on women who have a household member suffering from HIV/AIDS. There have been some improvements in the fight against HIV/AIDS, however; a countrywide increase in treatment centres and education, for example, led to a strong increase in the percentage of HIV-positive pregnant women who completed post-exposure prophylaxis treatment.¹⁰⁶

Lack of access to clean water, sanitation, and hygiene (WASH) facilities has other profound impacts on women's security and safety, as well as increasing prevalence of disease, which the risk experienced throughout the country, will be exacerbated by climate change. As opportunities for employment and livelihood in the rain-fed agriculture (which employs 85% of the workforce) decrease due to changes in water availability and rainfall, women must often look for other livelihood options and income to support their families. According to UNDP, this concern as well as lifestyle changes has led many women to move into "commercial sex work as a 'coping strategy' to sustain their families." This leads to an increase in HIV/AIDS cases in Zambia.¹⁰⁷

The maternal mortality rate in 2015 was 224 per 100,000 live births.^{108, 109} In 2012, 67% of deaths were caused by communicable diseases and maternal, prenatal, and nutrition conditions.¹¹⁰

In one of the only indicators where women fare better than men, the life expectancy at birth for females is 61 years and for males is 58 years, as of 2013.^{111, 112}

100 UNESCO. (2013). *Adult and youth literacy*. <http://www.uis.unesco.org/Education/Documents/literacy-statistics-trends-1985-2015.pdf>

101 UNESCO. *eAtlas of literacy*. <http://tellmaps.com/uis/literacy/#!/tellmap/367052619>

102 UNDP. (2014). *HRD: Zambia*. <http://hdr.undp.org/en/countries/profiles/ZMB>

103 *ibid.*

104 UNAIDS. (2015). <http://www.unaids.org/en/regionscountries/countries/zambia>

105 UNDP. *HRD: Zambia*. <http://hdr.undp.org/en/countries/profiles/ZMB>

106 *ibid.*

107 http://www.undp-alm.org/sites/default/files/downloads/zambia-climate_change_response_strategy.pdf

108 Compared to 14 in the US and 9 in the UK (World Bank Indicators).

109 World Bank. *Indicators*. <http://data.worldbank.org/indicator/SH.STA.MMRT>

110 *ibid.*

111 As a point of comparison, life expectancy for women in the U.S. is 81 years and 77 years for men, in 2013. (World Bank Indicators).

112 World Bank. *Indicators*. <http://data.worldbank.org/indicator>

6.4. Access to property and finances

Based on the SIGI analysis, women's rights to own and control land and other resources and to access public space are extremely limited in Zambia. In 2009, 16.5% of the land titles issues were issued to women (up from 5% in 2005).¹¹³ In 2010, the MoG announced a policy to ensure that 30% of land is owned by women; however, this only applies to state owned/controlled land and not to customary land (on which widows may still be denied access to their family's land).¹¹⁴ It is estimated that only 6-7% of land is "state" land and therefore able to be titled.¹¹⁵ The time-consuming and complicated process to apply for and be granted a land title, as well as the small amount of state land available for such titles, act as barriers for women to own and control land.¹¹⁶

Customary land is in the control of a chief or headman who grants access to individuals to control plots of land. There is no uniform process across all customary lands. In some regions, women may be granted access to land and in others women may not even have the right to inherit land or property.¹¹⁷ Women who do have access to land, most likely gained access through their natal families or husbands, depending on whether it is a patrilineal or matrilineal community (both of

which are present in Zambia).¹¹⁸ Regardless, on customary land, men typically hold primary control, even if a woman owns the land.¹¹⁹ Under formal law, women have the right to own land. More women own land in rural regions than in peri-urban or rural regions.¹²⁰

One of most serious hindrances to advancing women in all spheres—including politics, in that women candidates report having trouble securing financial backing (see below)—is money. "Civil society organisations say women are unable to contribute effectively towards national development because of inequalities in resource allocation and access to resources. The Zambia Federation of Women in Business (ZFAWIB) says women still face challenges in accessing money from financial institutions because of the conditions that are attached there."¹²¹

One specific example cited is the Citizens Economic Empowerment Commission (CEEC), which is supposed to have an allocation of specific resources for women, but which women say are difficult to access due to documentation needed, as well as proof of collateral, which most women do not have. The CEEC in turn argues that women's groups do not apply with adequate business plans—which could be an opportunity for the Ministry of Gender and partners to explore and invest in.

113 UNDP. *HRD: Zambia*. <http://hdr.undp.org/en/countries/profiles/ZMB>

114 Southern African Gender Protocol Alliance. *Zambian land policy guarantees ownership by women*. <http://www.genderlinks.org.za/article/zambian-land-policy-guarantees-ownership-by-women-2011-09-30>

115 Veit, P. *Custom, law and women's land rights in Zambia*. Focus on land in Africa. <http://www.focusonland.com/foia/en/countries/brief-custom-law-and-womens-land-rights-in-zambia/>

116 Southern African Gender Protocol Alliance. *Zambian land policy guarantees ownership by women*. <http://www.genderlinks.org.za/article/zambian-land-policy-guarantees-ownership-by-women-2011-09-30>

117 USAID. *Country profile: Zambia*. http://www.usaidlandtenure.net/sites/default/files/country-profiles/full-reports/USAID_Land_Tenure_Zambia_Profile.pdf

118 *ibid.*

119 *ibid.*

120 *ibid.*

121 Kachingwe, K. (2010). *Zambia: Need to mainstream gender equality into all policies*. <http://www.ipsnews.net/2010/06/zambia-need-to-mainstream-gender-equality-into-all-policies/>

6.5. Participation in government

The Government of Zambia has, in principle at the very least, promoted a significant increase of women in political and government positions. According to the Inter-Parliamentary Union, as of November 2015, 20% of ministerial positions were held by women, and 20 of 158 (12.8%) of parliamentary seats were held by women.¹²² This marks progress compared to a few decades ago.

However, Zambia is behind the curve, compared to its Sub-Saharan African neighbours especially. “Of the 50 countries with the highest representation of women in parliament, 13 are in Africa. Among these are Rwanda (highest ranking in the world at 56.3%), South Africa, Mozambique, Angola, Tanzania, Uganda, Burundi, Namibia and Lesotho... But Zambia will not even come close to meeting its MDG target of 30% women in parliament by 2015, let alone its African Union (AU)/Southern African Development Community (SADC) target of 50% by the same year.”¹²³

At the same time, women in technical government positions, including in environmental spheres, appears to be quite high. IUCN’s Environment and Gender Information (EGI) platform, which examines the linkages between gender equality and environmental issues specifically, produced 2015 data on women’s participation in key, most recent environmental decision-making spheres. For Zambia, women’s representation is noteworthy, and exceeds the average:

- Women comprised 45% of government delegates to CBD COP12 (compared to the regional average for Africa of 31% women and the global average of 38% women);
- Women comprised 33% of government delegates to UNCCD COP11 (compared to the regional average for Africa of 26% women and the global average of 26% women);
- Women comprised 52% of government delegates to the UNFCCC COP20 (compared to the regional average for Africa of 26% women and the global average of 36% women); and
- According to the results of an EGI survey, Zambia reported having 4 environmental sector ministries, one of which (25%) led by a female minister (global average: 12%).

7. LEGAL FRAMEWORK: MANDATES AND POLICY RELATED TO ENVIRONMENT

7.1. The Institutional Framework

As a country with tremendous natural resource endowments, Zambia has a sound environmental management framework and institutional arrangements. The recognition of the importance of environmental management in the sustainable development process led to the establishment of the Ministry of Environment and Natural Resources (now Ministry of Lands, Natural Resources and Environmental Protection (MLNREP)). The MLNREP is the key institution entrusted with the formulation of environmental policies, pollution control, and natural resource conservation and is responsible for formulation

¹²² IPU. (2015). *Women in parliaments*. <http://www.ipu.org/wmn-e/classif.htm>

¹²³ Wignaraja, K. & Morgan, V. (2011). Special measures may be needed to ensure more women in political office in Zambia. *Zambian Watchdog*. <http://www.zambianwatchdog.com/special-measures-may-be-needed-to-ensure-more-women-in-political-office-in-zambia/>

and administration of land policy, which includes land use planning.

Zambia's first process to develop a National Policy on Environment was through the National Conservation Strategy (NCS) of 1985. Adoption of the National Conservation Strategy was soon followed by the enactment of the Environmental Protection and Pollution Control Act (EPPCA) and the subsequent establishment of the Zambia Environmental Management Agency (ZEMA) and the Ministry of Environment and Natural Resources (MENR) in 1992. With apex institutions in place, Zambia began to see the development of major programmes such as the National Environmental Action Plan (NEAP of 1994), the Environmental Support Programme (ESP), the Zambia National Biodiversity Strategies and Action Plan (NBSAP), the Zambia Forestry Action Plan (ZFAP), the 2002 National Action Programme (NAP) for the implementation of the UNCCD, and the Zambia Wetland Strategy and Action Plan. Following a detailed national situational analysis on the environment, a National Policy on Environment (NPE) was drafted and approved by Cabinet in 2007.

The Government aims to pursue an integrated approach to policy implementation on four main environmental resources: land, water, atmosphere, and biological diversity. Relevant Ministries ensure that environmental provisions are enshrined in sector policies and are internalised and integrated in their sector plans; they each also follow key areas for implementation and monitoring. This is particularly important with respect to climate change: while climate change policies and plans are under the auspices of the MLNREP, the Interim Climate Change Secretariat is

currently under the Ministry of Finance, with lines of reporting to the President and Vice-President. At the time of this ccGAP, there is still discussion as to where the Climate Change Secretariat will ultimately sit, as climate change is not only an environmental issue, per se, but one related to development across all spheres, as well as finance.

While climate change has also increasingly been recognised as a threat to sustainability and to advancing Zambia's development, gender has also been integrated to a notable extent in Zambia plans and reports to the UNFCCC, as discussed below and elsewhere in this ccGAP.

In 2015, it was publicised that a permanent multi-stakeholder institution was to be established by the Government to coordinate climate change programmes and projects in the country.¹²⁴ The National Climate Change Council would take the lead in implementing a national climate change policy, which was drafted in 2012 and is currently being reviewed by Parliament to be approved.

7.2. Global mandates

7.2.1. United Nations Framework Convention on Climate Change (UNFCCC)

Zambia has signed and ratified the Framework Convention on Climate Change. Zambia also signed on to the Kyoto Protocol, committing to the reduction of greenhouse gas (GHG) emissions through targets.

National Communications to the UNFCCC

Zambia's *Initial National Communication to the UNFCCC* was submitted to the Secretariat in August 2004 (submitted by then Ministry of

124 The Times of Zambia. (2015, October). *Zambia: National climate change council coming*. <http://allafrica.com/stories/201510201144.html>

Tourism, Environment, and Natural Resources); and the *Second National Communication 2000-2004* was submitted in November 2014 (submitted by MLNREP).¹²⁵

National Adaptation Programme of Action (NAPA)

As a party to the Least Developed Countries (LDCs), Zambia has taken appropriate steps by responding to the UNFCCC initiatives, to which it is a party, and devised strategies against climate change through the *National Adaptation Programme of Action (NAPA 2007)*. The NAPA is meant to complement the efforts of the government to ensuring that the livelihoods of the most vulnerable households are secured against the adverse impacts, risks and shocks as a result of climate change. This strategy reinforces the necessary measures to achieve the aspirations of the NAPA. There is no reference to gender or women in Zambia's NAPA.

Intended Nationally Determined Contribution (INDC)

As a Party to the UNFCCC, Zambia submitted an INDC for the 2015 Agreement (at COP21) in response to decisions adopted at the 19th and 20th sessions of the COP. Zambia's INDC includes both mitigation and adaptation components based on the national circumstances and capabilities. It is in line with the Sixth National Development Plan (SNDP) and the Vision 2030, as well as many of the environmental policies mentioned prior to this as the framework for responding to climate change. There are a few explicit mentions of women as a group that would receive co-benefits of actions to be put in place as intended by the INDC.

7.2.2. United Nations Convention on Biological Diversity (CBD)

After the UN Conference on Environment and Development (UNCED) in 1992, Zambia signed and ratified its outcomes, becoming party to the CBD. Under Article 6 of the Convention, the government of Zambia, through MLNREP, began the National Strategy and Action Plan for Conservation of Biological Diversity.

National Biodiversity Strategy and Action Plan (NBSAP)

The *National Biodiversity Strategy and Action Plan (NBSAP)* (2005) was developed in response to Zambia's consent to become a signatory to the CBD. The Strategy recognises climate change as a key threat to biodiversity conservation including plant loss and habitat destruction and it sets up management objectives intended to reduce emissions from deforestation.

7.2.3. United Nations Convention to Combat Desertification (UNCCD)

Also identified at the Rio Earth summit in 1992 as one of the most important challenges to sustainable development was the necessity to combat desertification, with the establishment of the UNCCD in 1994. Zambia signed onto the Convention, and ratified the agreement.

National Action Programme (NAP)

As a party to the Convention, Zambia was requested to prepare a *National Action Programme* (approved in 2002) that provides a framework to incorporate long-term strategies to combat desertification and mitigate the effects of drought with national policies for sustainable development. The UNCCD NAP includes language to ensure a participatory approach that considers gender.

125 http://unfccc.int/national_reports/non-annex_i_natcom/submitted_natcom/items/653.php

7.3. National framework

The Constitution of the Republic of Zambia states that all citizens have “the right to live in a balanced environment,” charging them with the duty to “protect and conserve the environment,” and commits in the second paragraph that “the State and local authorities, with collaboration from associations for environmental protection, shall adopt policies to protect the environment and shall promote the rational use of all natural resources.”

Further, the Constitution declares the “State shall promote efforts to guarantee the ecological balance and the conservation and preservation of the environment, with a view to improving the quality of life of its citizens.” The second paragraph continues with the role of the State guaranteeing and safeguarding the environment in a framework for sustainable development through:

- a. Preventing and controlling pollution and erosion;
- b. Integrating environmental objectives with sectoral policies;
- c. Promoting the integration of environmental values into educational policies and programmes;
- d. Guaranteeing the rational utilisation of natural resources and the safeguarding of their capacity to regenerate, ecological stability and the rights of future generations;
- e. Promoting territorial ordinance with a view to ensuring the correct location of activities, and balanced socio-economic development.

7.3.1. The Vision 2030

The *Vision 2030* adopted by the government in 2006 sets Zambia’s long-term development

vision reflecting the collective understanding, aspirations and determination of the Zambian people to be a “*prosperous middle income country* by 2030.” The *Vision 2030* emphasises development based on “sustainable environment and natural resource management principles.” The vision in its overarching principle states the need for the nation to have a competitive economy that is dynamic, resilient to external shocks and support the stability and protection of the biological and physical system. In addition to other socio-economic principles the Zambian economy should be characterised by development of policies consistent with sustainable environment and natural resources and is free from donor dependence.

7.3.2. The Sixth National Development Plan (SNDP)

The *Sixth National Development Plan (SNDP)* (2010) is *Vision 2030*’s operational plan and recognises environment as a cross-cutting issue and environment mainstreaming as a core programme under the macro-economic chapter of the SNDP. The principal focus and mandate being that of building the capacity and facilitating other development and social sector’s efforts to integrate environment and natural resources concerns in their development policies, plans and programmes. Climate change proofing of the proposed sector development mandates was done during the formulation of the SNDP providing the leverage points/measures for addressing sector development under a changing climate scenario.

7.3.3. National Policy on Environment (NPE)

In 2007 Zambia adopted the *National Policy on Environment (NPE)*, which recognises the need

for an integrated natural resource management approach at landscape level. The NPE includes the achievement of measures that address the pressing need to manage the impact of human activities on the environment having particular regard to the following main areas of concern that include biodiversity conservation, deforestation, land degradation, air pollution and inadequate management of water resources and water pollution. The NPE has strong language around gender equality and empowering women in the environmental sector including a guiding principle recognising “women and men including the youth should play a key role in the sustainable utilisation of renewable natural resources and other development programmes;” as well as a strategy to enhance women’s participation in environmental management activities at all levels.”¹²⁶

7.3.4 The Environmental Management Act (EMA, 2011)

The Environmental Management Act (EMA, 2011) is a milestone towards the realisation of environmental and climate change mainstreaming in Zambia. The Act has the legal provisions for the integrated management of the environment and natural resources in the national development context. It provides for the development of sector specific environmental management strategies and application of Strategic Environmental Assessment of legislation, policies, plans and programmes that may be determined to have an impact on the environment across all sectors of national development. It further provides for public participation in environment management decision-making—social safeguards and the establishment of an

Environmental Fund in support of encouraging investments in environmental safeguards for sustainable development.

7.3.5. National Strategy for Adaptation and Mitigation of Climate Change

With the SNDP, a mandate was put in place for promoting “environmental quality, and policies and strategies of climate change adaptation and mitigation” through the integration of climate change in the indicator matrix.

The first Zambia National Climate Change Adaptation and Mitigation Strategy was approved during the 39th Session of the Council of Ministers. This strategy is based on the UNFCCC and the Hyogo Framework, focusing on the following key actions:

- a. Reducing climate risk
- b. Water resources
- c. Agriculture, fisheries, and food security and nutrition
- d. Social protection
- e. Health
- f. Biodiversity
- g. Forests
- h. Infrastructure

7.3.6. National Climate Change Response Strategy (NCCRS, 2012)

Zambia also recently drafted a *National Climate Change Response Strategy (NCCRS - 2012)*, which provides a basis for a Climate Change Programme. The NCCRS identifies clear priorities for adaptation, mitigation and activities in various sectors of the economy and proposes a new institutional and governance structure for managing climate change issues in Zambia.

126 National Policy on Environment. (2007).

This Strategy builds on the Government's proposed and partly functional structure to reduce emissions towards a climate resilient and green economy by focusing on biodiversity conservation and community involvement. It also includes significant emphasis on the importance of public awareness on climate change with specific references to the relevance for highlight gender issues and impacts and targeting women's and men's groups, among others, when creating outreach materials and also in decision-making activities. This strategy includes specific interventions to mainstream gender throughout the sectors including through assessment, participation, access to credit and other benefits.

7.3.7. Draft National Policy on Climate Change (NPCC, 2012)

The MLNREP being the focal point for the UNFCCC has developed a draft *National Policy on Climate Change (NPCC - 2012)* to provide a coordinated response to key climate change issues in the country. The vision of the policy is a prosperous climate change-resilient economy by 2030 that will have significantly increased living standards of the population and reduce its vulnerability to the impacts of climate change. The mission is to ensure that climate change is mainstreamed in the most economically important and vulnerable sectors of the economy (such as forestry, agriculture, water, etc.) by 2015 in the short term and by 2030 in the longer term emphasising biodiversity conservation as a key pillar. The NPCC draft is what this ccGAP has taken into consideration when prioritising sectors and complementary strategies (as shown in Section C).

7.4. Multilateral climate finance mechanisms

7.4.1. Climate Investment Fund's (CIF) Strategic Program for Climate Resilience (SPCR)

Zambia's climate insecurity significantly undermines the functionality and accessibility of critical infrastructure, such as roads, of which less than 10% are paved. Droughts, floods, and other extreme weather and climate events inflict annual damages of around 0.4% GDP; without adaptation measures, the intensified effects of climate change and variability are expected to sap around 1% of Zambia's annual GDP.

To solidify its efforts for creating an institutional foundation for sustainable, mainstreamed climate resilient development planning and investment, Zambia will tap US\$86 million in grants and near-zero interest credits from the PPCR. Zambia's PPCR strategic programme was designed under the leadership of the government in coordination with the African Development Bank (AfDB), members of the World Bank Group (IBRD, IFC), other development partners, and key Zambian stakeholders. The strategic programme is expected to leverage an additional US\$115 million in public and private sector co-financing for targeted investments to enhance the resilience of key infrastructure, scale-up and sustain replicable investments at the local level, and serve as a catalyst for behavioural change and increased engagement among communities, policymakers, and the private sector.

Under the PPCR, Zambia is currently developing two projects: Strengthening Climate Resilience in Zambia and the Barotse Sub-

Basin; and Strengthening Climate Resilience in the Kafue River Basin. Zambia is currently looking at opportunities for developing projects under the Forest Investment Program (FIP), as well as the Scaling up Renewable Energy Project (SREP).¹²⁷

7.4.2. Global Environment Facility (GEF)

Since joining the GEF, Zambia received GEF grants totalling US\$ 45,182,542 that leveraged US\$ 192,714,000 in co-financing resources for 16 national projects. These include six projects in climate change, five in biodiversity, three multi-focal area, one in persistent organic pollutants, and one in land degradation. The Small Grants Programme was also launched in Zambia in 2009 focusing on climate change adaptation, particularly for vulnerable populations to build resilience in agricultural production to enhance food security.

7.4.3. Green Climate Fund (GCF)

In 2010, parties to the United Nations Framework Convention on Climate Change established the Green Climate Fund (GCF) with the hope that it would become the primary global fund for climate change finance in developing countries. Through targeted financial support, the GCF aims to help countries develop and implement low-emission, climate-resilient development strategies that address the causes and consequences of climate change.

The National Designated Authority for GCF has been assigned to the National Planning Department within the Ministry of Finance; at the time of this ccGAP Zambia has been participating in the GCF Board Meetings, and

even hosted the 11th Board Meeting in 2015 but has yet to develop a project for approval by GCF.

8. LEGAL FRAMEWORK: MANDATES AND POLICY FOR ADVANCING GENDER EQUALITY

“The Government of Zambia strongly believes that gender equality, the empowerment of women and development are closely linked. With gender equality, a country’s ability to grow, reduce poverty and govern effectively is strengthened.”

– Statement by Ms. Christine Kalamwina, Director of Social, Legal and Governance for Gender in Development Division of the Republic of Zambia to ECOSOC, 2010¹²⁸

8.1. Institutional arrangements

On March 8th (International Women’s Day) in 2012, the Gender in Development Division (GIDD) from Cabinet Office was merged with the Department of Child Development from the Ministry of Community Development, Mother and Child Health, and turned into a full-fledged ministry. Just months prior to this ccGAP process, the Ministry evolved again, becoming now the MoG.

The mandate of the MoG includes, *inter alia*, gender mainstreaming across all policies and ministries and coordinating and monitoring the implementation of:

- National Gender policy;
- Matrimonial Causes Act; and
- Anti Gender-Based Violence Act No. 1 of 2011.

¹²⁷ <https://www-cif.climateinvestmentfunds.org/country/zambia>

¹²⁸ Permanent Mission of Zambia to the UN. (2010). <http://www.un.org/en/ecosoc/julyhls/pdf10/zambia.pdf>

The Ministry functions with the support and help from stakeholders in the public sector, private sector, civil society as well as communities. Gender Units and Gender Focal Points have been established and appointed across ministries respectively in all sectors at central, provincial and district levels.

While its most recent strategic plan, that which spans 2014-2016, does not address environmental sustainability concerns, environmental management or climate change specifically, it does include a number of key goals and indicators relevant to the development of this ccGAP. Enhancing gender mainstreaming understanding, approaches, and implementation across all Ministries, for example, offers an essential context for this action plan; the commitment to supporting Ministries and agencies to develop gender-responsive plans, programmes and budgets is certainly of relevance as well.

The 2014 revised NGP does include crucial environmental concerns, as well as a specific section on climate change (more on this below.)

The MoG has an Assistant Director for Environment who has been closely following environment matters, and especially climate change, for several years. The participatory, multi-stakeholder, cross-sectoral ccGAP process is an example of the MoG's commitment to strengthen institutional capacity across a range of stakeholders responsible for and necessary to combatting climate change and coping with its effects in Zambia.

The commitment of Zambia to mainstream gender through climate change is further

evidenced by a number of nascent references to women and gender in key climate change plans and strategies, including those plans and reports submitted to the UNFCCC (again, discussed below).

Zambia is well positioned to showcase its women leaders on environmental matters; the Minister of Gender herself is an environmental expert and deeply committed to sustainability and climate change concerns. The Environment and Gender Information (EGI) platform datasets from 2015 examining women in key leadership positions in environmental sectors, and based on surveys disseminated to country representatives revealed that the Ministries of Environment and Agriculture have gender focal points and formal gender policies and do cross-ministerial work. In 2015 the EGI also found that of four environment-related ministries, one (25%) is currently headed by a woman; this is compared to the global average of 12% of environmental ministries headed by women.

8.2. National framework

The 1991 Constitution of Zambia, including Amendments through 2009,¹²⁹ says in its third line that Zambia “Recognise[s] the equal worth of men and women in their rights to participate, and freely determine and build a political, economic and social system of their own free choice.” Article 11 asserts and protects the “Fundamental Rights and Freedoms” of all Zambians.

Customary law very often trumps legislation, however, especially when it comes to land ownership and tenure concerns. Traditional chiefs have customary control over land division in most regions. The delicate balance

129 Zambia's constitution of 1991 with amendments through 2009. <http://www.wipo.int/edocs/lexdocs/laws/en/zm/zm053en.pdf>

of customary and state law and the ways in which they interplay in women's and men's daily lives is a serious challenge for advancing equality. Customary social practices, which define sexual division of labour and limit women's economic opportunities, still tend to hamper women's advancement, and women must rely upon the approval of a husband or other male family member to partake in economic activities. Still, and in no small part due to the engagement of and advocacy by civil society organisations and a local women's movement, progress in recognising women's rights, advancing gender equality and ameliorating inequitable law has improved over the years.

Zambia adopted a NGP in 2000 and elaborated a strategic plan of action shortly thereafter in 2004. The most recent revision of the NGP was in October 2014. The NGP spans cross-cutting and sectoral policy areas including poverty, health, education, decision making, gender-based violence, land, agriculture, environment, science and technology, legal reforms, natural resources, commerce and trade, and labour and employment—as well as climate change. Since the first NGP, Zambia has made significant progress in the advancement of gender equality and empowerment of women in some sectors, though critical challenges still remain; many of these challenges have continued to be addressed subsequent revisions of the NGP, including in its most recent reformation, which was developed via a comprehensive consultative process.¹³⁰ The first NGP was aimed at achieving full participation of both women and men in the development process at all levels in order to

ensure sustainable development and attainment of equality and equity between sexes.

At the time of the ccGAP workshops in Lusaka, the MoG was also conducting gender-responsive budgeting training for its staff and focal points, which is a sign of its technical capacity and commitment to advancing gender mainstreaming impacts beyond getting “words on paper”. Zambia is rather extraordinary in its decades-long commitment to mainstreaming gender in policy—and yet serious steps need to be taken, and investments made to do so, to turn words to action and improve the living conditions of women—as well as their children and families—if Zambia wants to realise its 2030 vision. The inclusion of basic gender concerns in policies is too plentiful to list here; gender is included in most policies, plans, and strategies. A mere mention of gender or women, however, does not trigger action. The MoG's focus on building technical capacity, including in gender-responsive budgeting, is a powerful and essential step to realising equality, which would elevate development efforts across the board.

8.2.1. National Development Plans

The most recent National Development Plans (NDPs) have taken steps to prioritise the empowerment of women and advancement of gender equality. The Fifth NDP (2006-2010) prioritised the empowerment of women.¹³¹ One strategy, for example, was to create a conducive environment for women to work in the mining sector, which is among the most economically important sectors.¹³² Under the Environment chapter, the NDP also aimed to mainstream

130 Gender Links. (2014). *National gender policy: Zambia*. <http://www.genderlinks.org.za/article/national-gender-policy-2014-12-22>

131 Permanent Mission of Zambia to the UN. (2010). <http://www.un.org/en/ecosoc/julyhls/pdf10/zambia.pdf>

132 IMF. (2007). *Zambia: PRSP*. <http://www.imf.org/external/pubs/ft/scr/2007/cr07276.pdf>

gender by promoting awareness of gender concerns (along with HIV/AIDS) with respect to environmental matters and to specifically mainstream gender in wetlands management. Gender and Development comprises its own chapter; it spans a number of issues but does not include environment specifically.

The Sixth NDP mainstreamed gender and in particular the role of the (then) MGCD as a coordinating agent across ministries more thoroughly. The Revised version (2013-2016) includes, for example, that the MGCD is an important actor in empowering women, advancing gender equality and gender mainstreaming in areas of agriculture, education, and social protection.¹³³

Other key policies, which are cited as being influential to advancing women's rights and gender equality, include the Land Reform Policy, the Intestate Succession Act, the Marriage Act, and the Anti-Human Trafficking Act.

Zambia's national legislation supporting women's development, rights and equality are based largely on the normative international framework, as mentioned below, and further supported by regional agreements.

8.3. Regional mandates on gender, and gender and environment

As active members of the African Union, Common Market for Eastern and Southern African (COMESA) and the SADC and others, Zambia makes commitments to gender and environment concerns at regional level, including:

The Protocol to the African Charter on Human and People's Rights on the Rights of Women in Africa advocates that women have the right to a healthy and sustainable environment.

The African Union Gender Policy (2008) reaffirms that environment-related issues are focused on the utilisation and preservation of resources such as firewood, water, land and sanitation/ health of the homes/ households and the community. In the current labour division, men are much more integrated than women in the commercial exploration of natural resources. Women fight to collect water and fuel for the households and policies and programmes are much needed on environmental degradation, reforestation and protection, which take into account the needs of women as well as their inclusion in the decision-making structures. On the other hand, climate change should be made or turned into a key issue through environmental actions that reflect gender issues and carry out cooperation activities with pertinent partners.

SADC agreed two noteworthy frameworks: the SADC Declaration on Gender and Development in 1997 and the Protocol on Gender and Development in 2008 substantiated the region's commitment to and strategy for women's empowerment and gender equality. While the Protocol does not take up environmental issues as a priority section, it does address important environment and natural resource-related issues, such as land tenure and access to credit and information, and also includes progressive provisions that can be used to advance a climate justice agenda. For example, Articles 12-13 concerned governance, in

¹³³ Min of Finance. (2013). Revised Sixth National Development Plans. <http://www.slideshare.net/Net-Innovation/revised-sixth-national-development-plan-20132016-zambia>

particular representation and participation, providing for the equal representation of women in all spheres of decision-making. As current approaches to climate change may worsen existing gender gaps, for example in terms of technical assistance and transfer of technology, Articles 15-19 are relevant as they concern productive resources and economic development. One of the critical targets besides ensuring the equal participation of women and men in decision-making is the need to adopt policy measures that ease the burden of the multiple roles played by women.

8.4. Global mandates for the protection of women's rights, women's empowerment and advancing gender equality

Women's social and economic situations – including in relation to political and environmental issues – were included in international development discourse in the early 1960s and came especially to the fore in the 1970s at numerous world conferences. The United Nations Convention on the Elimination of All Forms of Discrimination against Women (CEDAW 1979) is the most well-known and cross-cutting framework for establishing women's rights and, thus, governments' commitments to protect and promote them.

The country is a signatory to all the major human rights conventions including CEDAW, which it ratified in 1985. CEDAW Article 14 paragraph 2 (g) is directly relevant to climate change policy-making and programming in its emphasis on rural women's access to tools for livelihoods and resiliency, noting that State Parties shall take all appropriate measures “[t]o

have access to agricultural credit and loans, marketing facilities, appropriate technology and equal treatment in land and agrarian reform as well as in land resettlement schemes.”

“In recognition of the fact that no meaningful and sustained economic growth can be achieved in the absence of social protection, the Convention is been domesticated through the National Development Plans, National policies and legislation. These include the National Social Security Policy, the Citizenship Economic Empowerment Act No. 9 of 2006, the Workers' Compensation Act No.10 of 1999, the Intestate Succession Act, Cap. 59 of the Laws of Zambia. Other measures that address the Convention are the Public Welfare Assistance Scheme of 2008 and the Cash transfer Scheme which is aimed at reducing poverty, hunger and starvation.”¹³⁴

The UN Fourth World Conference on Women's Beijing Platform for Action (1995) and other world conference outcomes such as the Rio Convention on Environment and Development (1992), the Vienna Conference on Human Rights (1993), the Cairo Conference on Populations and Development (1994), the Copenhagen World Summit for Social Development (1995), and the Istanbul Conference on Human Settlements (1996), among others, established a normative framework, or a standard for advancing gender equality and recognising and upholding women's rights globally.

The MDGs (2002-2015) built on the established global concern for inequality and inequities discussed in the above noted conferences, bringing to the forefront issues not yet fully discussed, e.g. empowerment, and categorising

134 *National Report The United Nations Conference on Sustainable Development – June 2012 (Rio+20)*. Retrieved from <https://sustainabledevelopment.un.org/content/documents/988zambia.pdf>

points for action around eight key goals. Women's empowerment (mainly via targets on education and maternal care) and environmental sustainability (including toward targets on biodiversity and forestry) were among them.

The MDGs were the first global development effort to enjoy worldwide support and recognition, including by developing countries, to advocate gender equality and women's empowerment as a key tenant of sustainable development. The MDG discourse also emphasised the interconnectedness of the goals; thus, making progress toward one goal supports progress toward others.

The 1992 Earth Summit, UNCED, as mentioned above, lay the foundation for gender-responsive sustainable development, especially via Chapter 24 of Agenda 21, Global Action for Women Towards Sustainable and Equitable Development, and the three outcomes Conventions of Rio, the UNFCCC, CBD and UNCCD, which are now all equipped with gender mandates. (Recent Decision text from the UNFCCC process is included below, as Annex I.)

The Hyogo Framework for Disaster Risk Reduction (2005-2015), considered to be one of the strongest frameworks in the environmental sphere to consider gender equality and women's distinct roles as agents for change, includes several specific references, including emphasising the importance of women's training and educational opportunities, gender-sensitive early warning systems, and the need for a gender perspective in all disaster management and assessment policies and programmes.

In 2015, three critical agreements were made: on disaster risk reduction, sustainable development and climate change—all with essential women's rights and gender commitments. The Sendai Framework for Disaster Risk Reduction 2015-2030¹³⁵—was adopted at the Third UN World Conference in Sendai, Japan, on March 18, 2015.¹³⁶ The priorities of the Sendai Framework include: understanding disaster risk; strengthening disaster risk governance to manage disaster risk; investing in disaster risk reduction (DRR) for resilience; and enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction. It formally recognises the importance of women's participation in every stage of DRR strategies—from design to development and from implementation to monitoring. Therefore, this framework promotes dedicating resources to empowering and building the capacity of women to participate in and lead DRR efforts.

The Sustainable Development Goals (SDGs), agreed in September 2015 in at UN headquarters in New York and in effect replacing the MDGs, aim to build on the progress made in the Millennium campaign era and take even greater steps to fill gaps. In addition to agreeing goals on gender equality, environmental sustainability, and combatting climate change, Parties committed in the Transforming our World Declaration, in paragraph 20, that:

Realising gender equality and the empowerment of women and girls will make a crucial contribution to progress

135 UN. (2015). Sendai Framework for Disaster Risk Reduction 2015-2030. http://www.preventionweb.net/files/43291_sendaiframeworkfordren.pdf

136 *ibid.*

across all the Goals and targets. The achievement of full human potential and of sustainable development is not possible if one half of humanity continues to be denied its full human rights and opportunities. Women and girls must enjoy equal access to quality education, economic resources and political participation as well as equal opportunities with men and boys for employment, leadership and decision-making at all levels. We will work for a significant increase in investments to close the gender gap and strengthen support for institutions in relation to gender equality and the

empowerment of women at the global, regional and national levels. All forms of discrimination and violence against women and girls will be eliminated, including through the engagement of men and boys. The systematic mainstreaming of a gender perspective in the implementation of the Agenda is crucial.

Finally, the UNFCCC Paris Agreement, agreed in December 2015 at COP21, as noted above and elsewhere, built on a decade of progressively gender-responsive decision-making to include gender text in climate change adaptation and capacity building, and in the preamble.

9. ENHANCING GENDER-RESPONSIVE IMPLEMENTATION OF NATIONAL CLIMATE CHANGE PLANS

This ccGAP, as indicated in Section A, is an Action Plan of the MoG. It is, however, put forward as a tool for enhanced cooperation and action across and by all relevant actors, and in particular by the MLNREP, respecting its role as the lead institution for the environmental sustainability and integrity throughout the country; the ICCS; climate change units, departments, and focal points across sectors; development partners, including bilateral and multilateral donors and the UN system; climate finance institutions and mechanisms; civil society; academia; and many others.

This Action Plan is grounded in the comprehensive existing institutional and policy framework that exists in Zambia, and in particular in the National Climate Change Policy (NCCP) and the National Gender Policy.

In preparing this Action Plan, which is envisioned to span five years (2016-2020), MoG together with workshop participants selected a number of priority sectors to focus on; these mirror priorities in the NCCP, as well as other relevant climate change plans and programmes, such as the NAPA, REDD+¹³⁷ Strategy, INDC,

PPCR, and others. The seven priority sectors presented in the following Action Plan sections and tables include: Sustainable Agriculture and Food Security; Health; Forests, including Protected Areas, REDD+, and Biodiversity and Wildlife; Water, and DRR, Preparedness, and Resilience; Infrastructure; Energy; and Tourism.

Mining was also considered a priority as a group, but activities did not specifically emerge from a gender and climate perspective to warrant inclusion in the Action Plan. Conversations around mining included the interruptions in activity (and employment) due to power outages (load shedding); pollution to surrounding areas and the contribution to climate change; displacement and resettlement concerns; environmental impact assessments; taxation and the revenue the government receives from foreign mining companies; the role of community groups as watchdogs, and other critically important issues—all of which have important gender and climate change links. It is highly recommended that future Action Plans consider these issues.

It is moreover important to point out that the selected priority sectors merely reflect the current priorities and capacities of the MoG and the ccGAP workshop participants. The issues are far from exhaustive. Moreover, a number of cross-cutting issues are relevant

137 REDD+ stands for reducing emissions from deforestation and forest degradation, plus conservation of existing forest carbon stocks, sustainable forest management and enhancement of forest carbon stocks.

and necessary across sectors: policy reform and synergy; education and awareness-raising; academic research, sex-disaggregated data, and information dissemination—both for public awareness and to inform policy; and capacity building and training.

The Action Plan tables that follow are outputs of the multi-stakeholder and national workshops conducted as part of the ccGAP processing January 2016 in Lusaka. Participants lists are found in Annex II.

A range of activities was identified for each priority sector. Relevant to several of them, or all of them, are the following key activities, which the Ministry of Gender, in concerted collaboration with others, could consider implementing as soon as possible:

- Analysing existing policies and institutional arrangements to enhance awareness on gender and climate change linkages and options for action;
- Implementing training on gender and climate change for all gender focal points, including training tools on gender-responsive budgeting (building on and enhancing existing tools);
- Broadening training on gender and climate change to provincial level, particularly focusing on Ministry of Gender staff, key partners, and women's organisations and networks;
- Establishing civil society liaisons to complement each gender focal point: this would aid in information flow across sectors, provinces and districts, including on climate change information and climate financing opportunities;
- Concretising a partnership with the MLNREP as well as the Interim Climate Change

Secretariat, by establishing a gender and climate change working group and identifying climate finance opportunities that could improve the lives, livelihoods and resilience of the women and men of Zambia; and

- Developing the capacity of women and women's organisations to be able to access climate finance.

Resource Mobilisation and Financing

There are a number of activities in the Action Plan that can be implemented right away, without significant additional funds. It would be a strategic show of action and commitment to leverage existing resources to implement “low-hanging fruit” as soon as possible.

Since lack of financial resources remains one of the major constraints to the ability of most concerned agencies to enforce existing environmental laws and regulations and building climate resilience, as well as in realising dramatic improvements in the lived realities of women and men across the country, and particularly in remote areas, which will suffer the most severe impacts of a changing climate, it is essential that the MoG and MLNREP mobilise sufficient finances and political will to master effective implementation of the ccGAP. Putting forward a range of innovative, cross-sectoral and multi-stakeholder activities, this ccGAP is seen as a powerful opportunity to identify and secure new investment in the sustainable development, security and resilience of the women and men of Zambia.

Moreover, the Government must take proactive steps to engage civil society as partners at every level. The importance of this cooperation, for financial, technical, and strategic reasons, cannot be overstated.

On the heels of the Paris Agreement, in 2016, the African Union Year of Human Rights, with a particular focus on the Rights of Women, the time is now.

10. PRIORITY SECTOR I: SUSTAINABLE AGRICULTURE AND FOOD SYSTEMS

10.1. Overview

The agricultural sector is the world's largest employer—providing livelihood support to over 40% of the global population—and the world's 500 million smallholder farms provide 80% of the food consumed in the developing world.¹³⁸ However, changing climatic conditions have a significant, negative impact on agricultural production worldwide, especially in developing countries where climate change impacts are particularly pronounced and adaptive capacity is severely constrained.

Climate change and its impact on agriculture—including droughts, floods and saline water intrusion—already, and will continue to, undermine efforts to address food insecurity and malnourishment. In 2015, the UN Food and Agriculture Organization (FAO) reported that just over one in nine people in the world—about 795 million people—are undernourished.¹³⁹ The FAO also reported that most countries in sub-Saharan Africa (SSA) have not made significant

progress toward reaching international hunger targets, which in some cases can be attributed to unstable political and economic climates as well as weak agricultural sector growth.¹⁴⁰ In Zambia, this situation is especially dire, with nearly 48% of the population experiencing undernourishment and the country failing to make progress toward MDG and the World Food Summit (WFS) targets.¹⁴¹

These food insecurity challenges will only be more pronounced as climate continues to change, impacting farmers and consumers through uncertain and variable agricultural productivity. As population continues to grow in the coming century, taking steps to address food insecurity through agricultural adaptation will be crucial to meeting current and future food demand.

10.2. Situation analysis

Zambia, with its favourable climate, fertile land, and adequate water resources, has vast agricultural potential. Agriculture accounts for 16-20% of the country's GDP, is the main source of income and employment for 85% of rural men and women, and directly sustains livelihoods for over 70% of Zambians.¹⁴² Despite the potential and local influence of agriculture, poverty levels are highest in rural agricultural households.¹⁴³ Additionally, of the 58% of viable agricultural land, only about 14%

138 Food security and sustainable agriculture. <http://www.un.org/en/sustainablefuture/food.asp#facts>

139 Food and Agriculture Organization of the United Nations (FAO), International Fund for Agricultural Development (IFAD), & World Food Programme (WFP). (2015). *The State of Food Security in the World: Meeting the 2015 international hunger targets: taking stock of uneven progress*. FAO: Rome, Italy

140 *ibid.*

141 *ibid.*

142 Ministry of Agriculture and Livestock. (2013, December). *National Agricultural Policy (Revised Draft)*. Government of the Republic of Zambia: Lusaka, Zambia

143 Ministry of Finance. (2014). *Revised Sixth National Development Plan 2013-2016*. Government of the Republic of Zambia: Lusaka, Zambia

is utilised for agricultural production.¹⁴⁴ This is largely because investment in copper mining is often prioritised over agriculture, there has been inefficient management of investments on maize, there is poor access to markets and access to finance, and lack of funding to research and extension services.¹⁴⁵

This under-investment in agricultural infrastructure and inputs leaves smallholder farmers—the main producers of staple crops like maize, sorghum, rice, millet, and cassava in Zambia—undervalued and vulnerable to extreme weather shocks, such as droughts and floods.¹⁴⁶ The livestock sector has also suffered as a result of under-investment in that services to prevent cattle diseases were withdrawn when the economy was liberalised in the 1990s, leading to the spread of diseases and the death of over half the country's livestock.¹⁴⁷ The agricultural sector has the potential to create employment and contribute to national wealth and that there needs to be more robust investment in technology, finance, and services to farmers.¹⁴⁸

Gains that have been made in the agricultural sector are often not substantial enough to address rural poverty and are frequently limited to emergent, medium, and large scale farmers.¹⁴⁹ Additionally, food insecurity and malnutrition

rates in Zambia are some of the highest in Sub-Saharan Africa making smallholder sustenance farming especially important for addressing household food insecurity.¹⁵⁰

Behind all these issues is the impending threat of climate change, which continues to plague Zambian farmers with droughts, dry spells, extreme temperatures, and flooding, creating uncertain farming conditions? For example, unpredictable and extreme flooding of the Zambezi River in 2007 and 2009 proved devastating for crops along the Zambezi River Basin.¹⁵¹ This is not only detrimental to local and rural communities, but also has severe national economic implications. A 2009 study by the International Food Policy Research Institute (IFPRI) estimates that over a 10-year period, climate variability will cost Zambia USD 4.3 billion.¹⁵²

10.3. Gender and agriculture

There are several gender gaps that exist in the agricultural field. Generally, women, while making essential contributions to rural economies as farmers, have significantly less access to agricultural assets, inputs, and services compared to their male counterparts. Because of this, women often have smaller

144 Country Profile – Zambia. (2012, May). <http://www.new-ag.info/en/country/profile.php?a=2621>

145 Ministry of Finance. (2014). *Revised Sixth National Development Plan 2013-2016*. Government of the Republic of Zambia: Lusaka, Zambia

146 Country Profile – Zambia. (2012, May). Retrieved from <http://www.new-ag.info/en/country/profile.php?a=2621>

147 IFAD. *Rural poverty in Zambia*. <http://www.ruralpovertyportal.org/country/home/tags/zambia>

148 Ministry of Tourism, Environment, and Natural Resources. (2010, December). *National Climate Change Response Strategy (NCCRS)*. Government of the Republic of Zambia: Lusaka, Zambia

149 Ministry of Agriculture and Livestock. (2013, December). *National Agricultural Policy (Revised Draft)*. Republic of Zambia: Lusaka, Zambia

150 FAO, IFAD, & WFP. (2015). *The State of Food Security in the World: Meeting the 2015 international hunger targets: taking stock of uneven progress*. FAO: Rome, Italy

151 Our Africa. *Zambia: Climate and agriculture*. <http://www.our-africa.org/44ambia/climate-agriculture>

152 Thurlow, J., Zhu, T., & Diao, X. (2009). *The Impact of Climate Variability and Change on Economic Growth and Poverty in Zambia*. International Food Policy Research Institute (IFPRI).

farms, fewer livestock, greater workload, less access to credit and education, and lower wages in the agricultural sector.¹⁵³

Women in Zambia make up an estimated 77% of the agricultural workforce and manage 60% of the land under local maize production.¹⁵⁴ However, while one in five agricultural households is female-headed, women have limited access to inputs and support services, and therefore have two-thirds the production and own half the amount livestock compared to male-headed households.¹⁵⁵ Female-headed households also experience higher rates of poverty, creating more obstacles to accessing proper agricultural resources.¹⁵⁶

Furthermore, women have difficulty legally securing land under the 1995 Lands Act, which establishes two land categories: customary land and State land.¹⁵⁷ Customary land accounts for 94% of Zambia and cultural norms, land-grabbing, customary laws, and family laws make it nearly impossible for women to gain access to customary lands.¹⁵⁸

Even legal protections for women, such as the 2000 Gender Policy and Article 2(1) of the Zambian Constitution, are infrequently enforced and fall short on protections.^{159, 160} This is one of the many reasons that the average female-headed household farm in Zambia is 0.6 hectares smaller than those of male-headed households.¹⁶¹ “Women’s lack of control over land curtails their potential to be economically independent and perpetuates their dependency on men. This has been compounded by the non-existence of codified law that governs land administration in customary areas. As such, there is insecurity for occupants of land under customary areas as occupants are discouraged from creating any capital improvements on land, as they are no incentive to invest in common resources.”¹⁶²

Agriculture has the potential to be a major driver for economic growth and poverty alleviation. However, as it stands, women have significant legal and social disadvantages that limit their productivity, despite their majority role in the agricultural sector.¹⁶³

153 FAO. (2011). *The State of Food and Agriculture: 2010-2011: Women in Agriculture: Closing the gender gap for development*. <http://www.fao.org/docrep/013/i2050e/i2082e00.pdf>

154 Central Statistical Office of the Republic of Zambia. (2011). *Labour force survey report: 2008*. Private Sector Development Programme (PSD). <http://www.zamstats.gov.zm/report/Demo/2008%20Labourforce%20Survey%20Report.pdf>

155 Nkonkomalimba, M. (2014, May). *Agriculture: Gender Profile*. http://say-zambia.org:8080/jspui/bitstream/123456789/247/1/ZGF_Agriculture%20gender%20profile_2014.pdf

156 Bibler, S. &Lauterbach, C. (2012, October). *Gender, IFIs and food insecurity case study: Zambia*. Gender Action: Washington, D.C.

157 Government of the Republic of Zambia. (2001). *Constitution of the Republic of Zambia*. <http://www.lexadin.nl/wlg/legis/nofr/oeur/lxwezam.htm>

158 Veit, P. (2012, December). *Custom, law and women’s land rights in Zambia*. <http://www.focusonland.com/foia/en/countries/brief-custom-law-and-womens-land-rights-in-zambia/>

159 Government of the Republic of Zambia. (2001). *Constitution of the Republic of Zambia*. <http://www.lexadin.nl/wlg/legis/nofr/oeur/lxwezam.htm>

160 Brown, T. (2005). *Contestation, confusion and corruption: Market-based land reform in Zambia*. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.184.397&rep=rep1&type=pdf>

161 ActionAid. (2011, April). *Making CAADP Work for Women Farmers: A review of progress in six countries*. http://www.actionaidusa.org/sites/files/actionaid/making_caadp_work_for_women_farmers_april_2011_final.pdf

162 Ministry of Gender and Child Development. (2014, September). *National Gender Policy 2014*. Government of the Republic of Zambia: Lusaka, Zambia.

163 SOFA Team & Doss, C. (2011, March). *The role of women in agriculture* (ESA Working Paper No. 11-02). <http://www.fao.org/docrep/013/am307e/am307e00.pdf>

10.4. Policy and programme interventions

The gender disparity in Zambia should be addressed to bolster rural and national economies in the agricultural sector as well as tackle the problem of food insecurity and malnutrition. The Zambian government has made past attempts to instill legal protections for women in agriculture. Some of these include:

Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) (1979)

Described as an international bill of rights for women, Zambia signed this treaty in 1980 and ratified it in 1985.¹⁶⁴ Article 7 focuses on the participation of women in forming policy and in all levels of government.¹⁶⁵ Article 14 specifically speaks on rural women and the role they play concerning the economic survival of the family.¹⁶⁶ Both of these articles are important in making the role of women in agriculture known and recognised in government policies.

National Gender Policy (NGP)(2000)

This piece of legislation outlines Zambia's commitment to gender equality and provides guidelines to ensure equal participation and benefits to men and women. In this policy it is stated that 30% of State land must be allocated to women.¹⁶⁷

National Agricultural Policy (2004)

The National Agricultural Policy acknowledges the promotion of gender equality as a main objective of the agricultural sector through the improved resource allocation and access to agricultural inputs to women farmers. It also includes strategies for improving the economic status of women farmers, by promoting gender-responsive agricultural extension services, adapting sustainable agriculture technologies to be gender sensitive, and facilitating gender mainstreaming in Agricultural Training Institutions' curriculum. The Policy also outlines strategies for gender sensitive considerations in agricultural services through gender awareness campaigns for policy makers and farmers and gender analytical skill building for Ministry of Agriculture and Cooperatives staff at the national and local level.¹⁶⁸

Agricultural Support Programme (2010)

The Agricultural Support Programme sought to improve the lives of small-scale farmers by improving food security and income from agricultural activities. Gender was successfully mainstreamed into the creation and implementation of all activities.¹⁶⁹

National Food and Nutrition Strategic Plan for Zambia (2011-2015)

This plan intends to achieve food and nutrition security in Zambia and specifically

164 United Nations Treaty Collection. (2016). *Convention on the Elimination of All Forms of Discrimination Against Women: Chapter IV Human Rights*. https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=IV-8&chapter=4&lang=en

165 UN Women. (1979). *Convention on the Elimination of all Forms of Discrimination Against Women*. <http://www.un.org/womenwatch/daw/cedaw/cedaw.htm>

166 *ibid.*

167 Veit, P. (2012, December). *Custom, law and women's land rights in Zambia*. <http://www.focusonland.com/fola/en/countries/brief-custom-law-and-womens-land-rights-in-zambia/>

168 Ministry of Agriculture and Co-operatives. (2004, October). *National Agricultural Policy (2004-2015)*. Government of the Republic of Zambia: Lusaka, Zambia

169 Farnworth, C.R. & Munachonga, M. (2010, May). *Gender approaches in agricultural programmes – Zambia country report a special study of the Agricultural Support Programme (ASP)* (UTV Working Paper 2010:8). Swedish International Development Cooperation Agency (SIDA): Stockholm, Sweden.

recognises the vulnerability of women and girls to malnutrition. Activities to address this include promoting nutritionally adequate meals and a diverse diet for pregnant women and encouraging women to take iron and folic acid supplements during pregnancy. Additionally, to increase access to affordable and nutritious foods, there will be a focus on furthering cost saving technologies and improved food storage at the household level. It is also noted that women's empowerment and gender equality are catalysts for enhancing household food security because of the role women have in family care and food preparation.¹⁷⁰

National Agriculture Investment Plan (NAIP) (2014-2018)

This plan includes the importance of gender as a cross-cutting issue and includes provisions to include gender-responsive research, credit, land tenure, and extension services to address the needs of women farmers.¹⁷¹

National Gender Policy (NGP) (2014)

This policy addresses women's critical role in agriculture and the disadvantages they still face in terms of accessing economic benefits from agricultural activities. Additionally, the Policy acknowledges the shortcomings of land allocation to women outlined in the National Gender Policy from 2000 as a result of customary land tenure systems. The Policy also outlines measures to end gender based violence, which include provisions to further land ownership by women by increasing allocation to 50% through sensitisation and awareness programmes on gender equality and land rights, as well as a call

to decentralise the land allocation procedures up to the district level. Further, there are measures that plan to strengthen services to women farmers, including building the capacity of women to be active members in cooperatives, improving market linkages through the construction of feeder roads, and engendering agriculture and livestock extension services. Finally, the Ministry of Agriculture and Livestock is called to invest in women to increase their productivity and improve their access to agriculture inputs.¹⁷²

While these gender provisions exist and continue to be included in policies and plans, there is both poor implementation and enforcement, or the policies are not robust enough to make a significant impact in the lives of women farmers. To promote gender equality in the agricultural sector there needs to be more efforts to adequately ensure equal access and control to assets, inputs, knowledge, information, and organisation, as well as gender-responsive research, technology, and governance.

Several international and national organisations in Zambia are making efforts in communities to further gender considerations in food security and agricultural practices.

The USAID Feed the Future Programme is operating in 19 countries in the Global South, focusing on fighting extreme poverty, under-nutrition and hunger. Agencies under Feed the Future do this through development of agricultural sectors by increasing production, income, research, and resilience on smallholder farms.

170 National Food and Nutrition Commission of Zambia. (2011, July). *National Food and Nutrition Strategic Plan for Zambia (2011-2015)*. Government of the Republic of Zambia: Lusaka, Zambia

171 Ministry of Agriculture and Livestock. (2013, May). *National Agriculture Investment Plan (NAIP) 2014-2018*. Government of the Republic of Zambia: Lusaka, Zambia

172 Ministry of Gender and Child Development. (2014, September). *National Gender Policy 2014*. Government of the Republic of Zambia: Lusaka, Zambia.

In Zambia, Feed the Future made targeted investments in specific areas—including five districts in the Eastern Province, peri-urban Lusaka, and the Lusaka-Eastern Province economic corridor—to have the most impact. Investments went toward increasing production and diversification smallholder farms and improving markets and trade, sustainable natural resource management, resilience, and nutrition. Gender is a specific focus in Feed the Future's efforts in Zambia to ensure equitable distribution of benefits for men and women. Aside from increasing women's participation in economic activities, research and development targets, gender considerations in farming practices, in-depth analysis of gender relations in groundnut commercialisation, and how increased commercialisation of groundnuts will impact women's control of income, household decision-making, and asset ownership. The linkages between agriculture, food security and gender in the Feed the Future programme provides excellent opportunities for cross-collaboration and expansion with the ccGAP activities as follow in the action plan below.

To date, Feed the Future has helped 154,000 Zambian farmers and producers apply new technology and management practices on 115,000 hectares of land. In the first year these farmers and producers increased agricultural product sales by US\$ 31.3 million.¹⁷³ This increased income and food production is helping to fight extreme poverty and food insecurity in Zambia.

UNDP is helping Zambian women lead the way on conservation farming. In the last decade,

the village of Muyumbela in Southern Zambia has suffered from extreme floods and droughts, which have severely impacted crop growth and production as well as livestock care. To help address this problem, UNDP and the Zambian government aided 2,000 farmers (800 of them women) to organise and adopt conservation farming practices. The USD 3.9 million project helped local communities in Muyumbela and in seven other districts to train smallholder farmers in sustainable farming techniques and build resilience to climate change. Women were trained in beekeeping techniques and trained in methods to grow rice, sorghum, peas, sunflowers, and sweet potatoes (opportunities may exist to collaborate among UNDP partners in implementation of ccGAP activities in this sector, as well as the forest and biodiversity sector). Communities were also trained in techniques to improve soil moisture and rainwater retention. The programme has been immensely successful in furthering gender considerations and women's participation and has plans to expand to help over a million farmers by 2017.¹⁷⁴

Cooperative for Assistance and Relief Everywhere (CARE) and Cornell Research Partnership is strengthening food and nutrition through research on rural poverty, food security, and nutrition to identify critical points for interventions in Zambia, Ethiopia, Peru, Benin, and Mozambique. The goals of the programme are to promote resilient rural livelihoods, especially for the landless, poor smallholder farmers, and rural women; strengthen sustainable agriculture; identify evidence-based programme interventions; and develop capacities of local communities.¹⁷⁵

173 USAID Feed the Future. *Zambia*. <http://feedthefuture.gov/country/zambia-0>

174 UNDP. (2013). *Zambian women lead the way in conservation farming*. <http://www.zm.undp.org/content/zambia/en/home/ourwork/womenempowerment/successstories/-/zambian-women-lead-the-way-in-conservation-farming.html>

175 CARE. (2015). <http://www.care.org/work/world-hunger/care-cornell-research-partnership>

ACTION PLAN: SUSTAINABLE AGRICULTURE AND FOOD SECURITY

OUTCOME: Agricultural production and food security for all Zambians is enhanced, particularly in remote rural areas and particularly for women farmers and their families

OBJECTIVE	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
1. Increase availability of and access to land for women farmers	1.1. Identify areas in which women's land access and ownership is low	No. of target areas	MoG, MLNREP, Ministry of Water and Energy, NGOs (Zambia Alliance of women, Zambia Land alliance,	250,000
	1.2. Promote women's awareness of land ownership rights via sensitisation outreach, particularly in those areas	No. of sensitisations No. of new land titles issued to women	Ministry of Chiefs, Ministry of local government and Housing, Ministry of Agriculture, community radio stations and media	
	1.3 Engage traditional Chiefs in land rights discussions and awareness-raising, including an exchange with Cameroon chiefs that participated in similar activities	No. of Chiefs attending community land rights discussions Exchange visit		
	1.4 Develop media campaign and articles to improve women's and men's awareness of their women's land rights, especially via community radio in local languages	No. of articles No. of radio programmes		

ACTION PLAN: SUSTAINABLE AGRICULTURE AND FOOD SECURITY (CONT.)

OBJECTIVE	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
2. Promote gender-responsive, climate-smart agricultural technologies, particularly for women farmers	2.1 Identification of gender-responsive climate smart technologies e.g. climate smart irrigation usable by women	Technologies identified	MoG, MLNREP, Ministry of Energy and Water Development (MEWD), NGOs (Zambia Alliance of women, Zambia Land alliance), Ministry of Chiefs and Traditional Affairs, Ministry of local government and Housing, Ministry of Agriculture	250,000
	2.2 Disseminate information about technologies identified, especially among women and women's organisations	No. of IEC materials		
	2.3 Provide women and women's groups access to post harvest technology, i.e. storage and food preservation	No. of women and women groups accessing post-harvest technologies		
	2.4 Promote the use of climate smart agricultural equipment by women, i.e. solar irrigation equipment.	Climate smart equipment adopted by women		

ACTION PLAN: SUSTAINABLE AGRICULTURE AND FOOD SECURITY (CONT.)

OBJECTIVE	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
3. Improve capacity of extensions services with respect to gender and climate change	3.1 Create community climate information centres to enable both urban and rural women farmers to access climate information	No. of community climate information centres created	MLNREP, Ministry of Agriculture and Cooperatives, Ministry of Communications and Transport (MCT), MoG, Ministry of Chiefs and Traditional Affairs, private sector (IT services and telecommunication providers), IUCN	3,000,000
	3.2 Improve existing and create new Farmer Training Centres (FTC)	No. of FTC improved No. of FTC created		
	3.3 Develop and implement Training of Trainers (ToT) for women in cooperatives in extensions services	No. of women in co-operatives trained in extension service		
	3.4 Empower existing agriculture extension officers with modern communication devices (e.g. iPads with weather apps)	No. of extensions officers with improved communication devices		

ACTION PLAN: SUSTAINABLE AGRICULTURE AND FOOD SECURITY (CONT.)

OBJECTIVE	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
4. Building on the existing women's economic empowerment fund, increase access to women farmers to be climate-resilient	4.1 Establish user-friendly climate-resilience fund for women farmers	No. of women accessing funds No. of climate-resilient projects funded	MoG, Ministry of Finance, Ministry of Commerce & Trade, MLNREP, Ministry of Community Development, Min. of Agriculture, Zambia Alliance of Women, women's networks, Zambia Cooperative Federation, provincial agricultural shows, Small-Scale Industries Association of Zambia	1,500,000
	4.2 Disseminate information regarding new fund for women farmers	No. of IEC materials (in local languages)		
	4.3 Identify and promote best practices (e.g. rural seed banks)	No. of proven best practice projects identified No. of IEC materials		
	4.4 Promote Rural Banking to provide cooperative with Finances to implement CSA	No. of rural banks established		

11. PRIORITY SECTOR II: HEALTH

11.1. Overview

With life expectancy in the SSA region among the very lowest in the world per 2013 data—averaging 58 years in comparison to the world average of 71 years¹⁷⁶—health

and wellness of people in the region, and in Zambia in particular, is a serious concern and a longstanding development challenge, as well as a threat to security and resilience in the context of a changing climate.

Health—like many sectoral issues—is cross-cutting. Fresh water supply and access, efficient and safe energy sources and usage, access to

176 World Bank. (2013). *Data: Health*. <http://data.worldbank.org/topic/health>

and control over natural resources, education regarding sanitation and awareness to health threats, reliance upon traditional cooking fuels, and impacts from mining and other economically imperative national priorities all impact Zambians' health and pose challenges to improving it across the board.

The impacts of climate change on human health are becoming increasingly known and understood, and it is the challenge of the global community, and national governments and stakeholders in particular, to implement cross-cutting actions to improve the well-being of populations to be able to cope with increased effects of climatic change.

According to the latest data from the World Health Organization (WHO) in 2015, climate change is expected to cause an additional 250,000 deaths per year, between 2030 and 2050, from cases of malaria, diarrhea, heat stress and malnutrition. WHO further emphasises that the direct damage cost of climate change on health annually is likely to be US\$ 2 billion to US\$ 4 billion by 2030—and that is excluding costs in health-determining sectors such as agriculture and water and sanitation.¹⁷⁷

In addition to obvious climatic stressors to health such as droughts, floods and changes in rainfall that affect agricultural output and thus nutrition, climate change also changes likelihood and real rates of infectious disease and patterns of infection. Climate change affects water- and vector-borne diseases, and those diseases

carried via insects, snails and cold-blooded animals. Malaria is one of the most concerning diseases affected by climate change, and one that is already of priority to the region: malaria kills more than 600,000 people a year, and mostly African children under 5 years old.¹⁷⁸

Air pollution—both indoor and outdoor—is also of grave concern in the context of climate change, both as a cause and an effect. Rates of increased respiratory infection, for example, as well as cardiovascular disease have been emphasised as increased risks from climate change.¹⁷⁹ Meanwhile, Zambia's reliance upon mining as the mainstay of the economic engine means pollution and acid rain pump into the atmosphere, threatening health security in mining and nearby provinces.

As the importance of water security was discussed above, sanitation and hygiene can prevent at least 9.1% of global disease and 6.3% of all deaths, according to research of the IPCC. Half of the developing world—about 2.5 billion people—lack access to improved sanitation (more than 35% of the world's population); and yet, according to UNICEF, improved sanitation could save the lives of 1.5 million children a year.¹⁸⁰

In a major scientific report by the United States, launched in December 2015, it was stated that climate change poses a serious threat to agriculture, and thus food production and security.¹⁸¹

177 WHO. (2015). *Climate change and health*. <http://www.who.int/mediacentre/factsheets/fs266/en/>

178 *ibid.*

179 CDC. (2015). *Climate effects on health*. <http://www.who.int/mediacentre/factsheets/fs266/en/>

180 Oswald Spring, U. (2012.) *Climate Change Impacts on water resources, livelihoods, related sectors and ecosystems*. IPCC presentation made to UNFCCC technical workshop on water and climate change. 18-20 July. Mexico City, Mexico.

181 USDA. (2015). *USDA Report Warns Climate Change Likely to Impede Progress on Global Food Security*. News release, 0333.15 United States Department of Agriculture. <http://www.usda.gov/wps/portal/usda/usdahome?contentid=2015/12/0333.xml&contentidonly=true>

While the world produces enough food to feed everyone, climate change does threaten the global community's goal to improve food security for everyone, especially those chronically hungry and undernourished, which is most certainly a concern for Zambia. The FAO estimated in 2014 that about 795 million people of the 7.3 billion people in the world, or one in nine, were suffering from chronic undernourishment in 2014-2016. Almost all the hungry people, 780 million, live in developing countries, representing 12.9%, or one in eight, of the population of developing countries.¹⁸²

Less publicised and discussed, but increasingly felt are the mental stressors from climate change. Agricultural failures, for example, have led to rising rate of farmer suicides in various parts of the world,¹⁸³ while disasters, stress over disaster recovery, including income insecurity, and other concerns, have been shown to lead to skyrocketing levels of gender-based and domestic violence.¹⁸⁴

As caregivers of families and communities, particularly in rural and traditional settings, women are on the frontlines of dealing with climate change's impacts upon human health—and they are and should be positioned as vital change agents in protecting and promoting wellness at all levels.

11.2. Situation analysis

As stated in Zambia's 2011-2015 National Health Strategic Plan, the health challenges

facing the country are extensive. While the national response has been arguably aggressive and comprehensive, it has been overall inadequate in making major strides toward comprehensively improving the health and wellness of its population. "Zambia has a high burden of disease, which is mainly characterised by high prevalence and impact of communicable diseases, particularly malaria, HIV and AIDS, Sexually Transmitted Infections (STIs), and tuberculosis (TB), and high maternal, neonatal and child morbidities and mortalities. The country is also faced with a rapidly rising burden of non-communicable diseases, including mental health, diabetes, cardio-vascular diseases and violence."

These challenges are cyclical in nature. For example, as poverty influences disease and undernourishment, so too do these situations influence and reinforce poverty. For women and children, vulnerability can be acute. And, also cyclical in nature, if women and children are not healthy, whole populations suffer.

While the country has been experiencing relatively steady economic growth, the benefits have not been felt across the population, 67% of which is still in persistent poverty. Lack of access to safe water and sanitation are among the most persistent problems.¹⁸⁵ These concerns are all the more pressing in the context of climate change, which the National Health Strategic Plan 2011-2015 specifically notes.

¹⁸² World Hunger Education Service. (2014/2015). *2015 World hunger and poverty facts and statistics*. <http://www.worldhunger.org/articles/Learn/world%20hunger%20facts%202002.htm>

¹⁸³ e.g. Alston, M. (2010). Rural male suicide in Australia. *Social Science & Medicine*, 74, 515-522. doi:10.1016/j.socscimed.2010.04.036

¹⁸⁴ Homeland Security News Wire. (2012). Study shows violence against women increases following disasters. <http://www.homelandsecuritynewswire.com/srdisasters20120314-study-shows-violence-against-women-increases-following-disasters>

¹⁸⁵ Ministry of Health. (2011). *National Health Strategic Plan 2011-2015*. http://www.nationalplanningcycles.org/sites/default/files/country_docs/Zambia/zambia_nhsp_2011-2015_.pdf

Likewise, the impact of climate change on agricultural production, food security and nutrition, as discussed elsewhere in this ccGAP, reinforces a need to focus on improving nutrition trends: “In Zambia, malnutrition underlies up to 52% of all under-five deaths. The stunting rate in under-five children currently stands at 45%, with 5% being acutely malnourished (wasted) and 15% underweight. The rates of micronutrient deficiencies are also high, with 53% Vitamin A deficiency and 46% Iron deficiency anaemia [citing 2003 data].”¹⁸⁶

According to a 2010 brief by the Zambian Ministry of Finance and National Planning, in order for the country to realise its vision of becoming a middle-income country, lowering its fertility rate has been considered as one of the most important factors.¹⁸⁷ As fertility rates are typically an indication of gender equality, the realisation of women’s rights to education, employment opportunities, and health, including reproductive health services, this implies that investment in women and gender equality should be seen as a priority across sustainable development programmes and plans.

Zambia has one of the highest fertility rates in Africa and in the world: the number of births per 1,000 people, according to the U.S. Central Intelligence Agency (CIA) Fact book, is 42.46, while Zambian women have 6.2 children each, on average.¹⁸⁸ Population growth is viewed as a contradictory force to the modernisation of agriculture that the country wants to attain, particularly as so much of the population is

already dependent upon subsistence agriculture and other land degrading practices.

Urgently lowering these numbers is included in economic projections for the country; sustaining high fertility rates will not only thwart economic development plans but will demand added services and infrastructure to merely maintain status quo, including numbers of teachers and nurses.

The generally weak health infrastructure is due in part to the geography and population dynamics of the country. Per its 2013 reporting on progress toward meeting the Millennium Development Goals, the Government noted that poverty reduction measures—and indeed all health-related goals, as it appears—are dramatically uneven, with poverty having been alleviated in the populated Copperbelt and Lusaka provinces, but with steep rates of profound poverty in the rural provinces holding strong.¹⁸⁹

The rapid rate of urbanisation is one of the more pressing current challenges to health for various regions of the country, as swelling populations put even more strain on service and infrastructure shortages.¹⁹⁰ In particular, this urbanisation pressure “will exacerbate the already poor living conditions for low-income populations and people in urban slums, who face overcrowding, inadequate shelter, lack of clean drinking water and adequate sanitation, and increased vulnerability to exploitation and abuse.”¹⁹¹

186 *ibid.*

187 Ministry of Finance and National Planning. (2010). *Zambia: Population factors and national development*. http://www.healthpolicyinitiative.com/Publications/Documents/1066_1_Zambia_4_page_doc_2_1_2010_FINAL_acc.pdf

188 *ibid.*

189 UNDP and Ministry of Finance. (2013). *Millennium Development Goals progress report: Zambia, 2013*. UNDP: Lusaka, Zambia.

190 Ministry of Finance and National Planning. (2010). *Zambia: Population factors and national development*. http://www.healthpolicyinitiative.com/Publications/Documents/1066_1_Zambia_4_page_doc_2_1_2010_FINAL_acc.pdf

191 *ibid.*

11.3. Gender and health

Much literature exists to support the links between gender equality and a population's health. For example, more educated mothers raise healthier children: a study using data from 219 countries from 1970 to 2009 found that, for every one additional year of education for women of reproductive age, child mortality decreased by 9.5%.¹⁹²

Meanwhile, high rates of population growth, low literacy levels, high incidence of disease, and acute dependence on natural resources are all indications of a close link between poor health and gender inequality.

Pregnant women are among the most susceptible to another climate change trend, as noted above: the rise in malaria. Malaria is a major concern to Zambia, where more than four million Zambians are affected annually, accounting for approximately 30% of outpatient visits and resulting in almost 8,000 deaths each year. "Under five-year-old children and pregnant women are the most vulnerable, especially those in more remote and impoverished areas, with 35-50% of under-five mortality and 20% of maternal mortality attributable to malaria."¹⁹³

Malaria transmission intensity varies from year to year and region to region, depending on rainfall, altitude and weather. Temperatures affect rates of maturation and replication of mosquitos, the density of insects in certain

areas, and the frequency of their biting. According to WHO, pregnant women are particularly vulnerable to malaria as they are twice as "appealing" to malaria-carrying mosquitoes as non-pregnant women. Pregnant women (especially during the later months of pregnancy) also breathe more, and human breath contains components that help mosquitoes detect their hosts; pregnant women have, on average, 21% more exhaled breath than non-pregnant women. In addition, the abdomen of pregnant women is at least 0.7°C hotter than that of non-pregnant women, which allows mosquitoes to detect them more readily at close range.¹⁹⁴

Still with stigma attached and with less than 40% of the total population affirming that they well understand the causes and impacts,¹⁹⁵ HIV/AIDS remains a very serious threat to Zambians' health and wellness. With 14.3% of the adult population being affected by HIV/AIDS, (which represents a decrease and a meeting of the MDG target of 15.6%),¹⁹⁶ the majority are women (16.1%) versus men (at 12.3%). Married couples and stable partnerships (16% and 15%, respectively) have a higher infection rate than the national average. And only 7.1% of the population reported, in 2009, stated that they used condoms in their most recent sexual encounter. Given the numbers of women expressing unmet family planning needs (as noted below), these numbers urgently need attention.

192 Gakidou, E., Cowling, K., Lozano, R., & Murray, C. (2010). Increased educational attainment and its effect on child mortality in 175 countries between 1970 and 2009: A systematic analysis. *The Lancet*, 376(9745), 959-974. [http://dx.doi.org/10.1016/S0140-6736\(10\)61257-3](http://dx.doi.org/10.1016/S0140-6736(10)61257-3)

193 UNICEF. (2015). *Zambia: Malaria*. http://www.unicef.org/zambia/5109_8454.html

194 WHO. (2013). *Gender, climate change and health*. <http://www.who.int/phe/en/>

195 UNICEF. (2015). *Zambia: HIV/AIDS*. http://www.unicef.org/zambia/5109_8459.html

196 UNDP. (2013). *Millennium Development Goals: Progress report Zambia 2013*. UNDP: Lusaka.

The rapid urbanisation of Zambia may be a cause for increased concern and programme intervention, as the rate of HIV/AIDS infection is twice in urban areas (20%) what it is in rural regions (10%).¹⁹⁷ With men tending to migrate more frequently in search of paid work, infection patterns most certainly have gendered dimensions.

Child and maternal mortality remain high. From the MDGs progress report for Zambia in 2013, UNDP and the Government stated, “Thirty-eight mothers die each month due to complications of pregnancy or childbirth. Although maternal mortality in Zambia has been falling, the decline is insufficient to reach the 2015 target of 162.3 deaths per 100,000 live births. The number of women dying during pregnancy and childbirth has decreased from 649 per 100,000 live births in 1997 to 483 in 2010. Interventions that have been successful, and need to be scaled up, include improved use of contraception for birth spacing, prevention of early marriages, improved referral systems and provision of and access to emergency obstetric care, and the deployment of more trained mid- wives and birth attendants. Investing in mothers’ education and nutritional status has a direct impact on the health and well-being of children and households.”¹⁹⁸

In Zambia, gender mainstreaming has been cited as a policy priority across all key sectors—and health is no different. However, the 2011 National Strategic Plan does candidly remark that gains on health and wellness have been experienced unevenly, especially

in persistent maternal mortality rates, and that men’s engagement in reproductive health and family planning and health remains very low.¹⁹⁹ This is an important point of focus, especially in the context of climate change: while women are disproportionately vulnerable to climate change and its varied impacts, men stand to lose, too, if families and communities are not able to care for themselves and build resilience to a changing climate.

The Strategic Plan also touches upon some of the cultural practices that are deeply discriminatory to women, such as sexual cleansing of widows, but also that affect men—such as unsafe male circumcision and other practices. A community’s health and wellness should be taken comprehensively, taking into account the specific needs, expertise, preferences, and capacities of women and men alike.

11.4. Policy interventions, programmes and projects

The Government has recognised the need to address the unmet demand for family planning, and this is asserted as a priority in its 2010 brief on the population and national development. More than a quarter (26.5%) of married women of reproductive age want to use family planning methods but are not, or do not have access to services.²⁰⁰ Working to serve this population is cited as a policy and programming priority.

As mentioned above, the 2011-2015 National Health Strategic Plan spans a range of issues,

197 UNICEF. (2015). *Zambia: HIV/AIDS*. http://www.unicef.org/zambia/5109_8459.html

198 UNDP. (2013). *Millennium Development Goals: Progress report Zambia 2013*. UNDP: Lusaka.

199 Ministry of Health. (2011). *National Health Strategic Plan 2011-2015*. http://www.nationalplanningcycles.org/sites/default/files/country_docs/Zambia/zambia_nhsp_2011-2015_.pdf

200 Ministry of Finance and National Planning. (2010). *Zambia: Population factors and national development*. http://www.healthpolicyinitiative.com/Publications/Documents/1066_1_Zambia_4_page_doc_2_1_2010_FINAL_acc.pdf

working with a mission statement to “provide equitable access to cost effective, quality health services as close to the family as possible.” Public health priorities include: primary health case services; maternal, neonatal and child health; communicable (especially malaria, HIV/AIDS, STIs and TB) and non-communicable diseases; epidemics; environmental health including food safety; health service referral systems; and education, while health system priorities include human resources for health; essential drugs and supplies; infrastructure and equipment; information; health care financing; and governance.²⁰¹

Strategic targets and interventions span these themes, including in parallel to the National Development Plans and the programmes toward achieving the Millennium Development Goals. The Ministry of Health is the overall coordinator of this sector, including in its approach to operationalise key synergies with other sectors, and is supported by Provincial Health Offices, District Health Office, and Neighbourhood Health Committees (NHCs) at community-level. These are all key partners and stakeholders in building knowledge around and implementation plans of action on gender, health and climate change.

USAID has been an important partner in Zambia for a number of years, including in its focus on health matters as urgent and cross-cutting. In fact, all aspects of USAID’s investments and programming in Zambia are relevant to gender, health, and climate change, as they include:

(1) improving the health of all Zambians, with a particular focus on women and vulnerable children; (2) reducing the incidence and impact of HIV/AIDS and other illnesses; (3) increasing agriculture-led economic development to reduce rural poverty and food insecurity; (4) mitigating climate change and environmental risks; (5) raising education quality and learner performance; and (6) advancing civil society, governance, and public service delivery.²⁰²

Public-private partnership is one way in which change is being seen on the ground. Saving Mothers, Giving Life (SMGL), a joint programme of numerous donor agencies including USAID and private business, started in 2012 to reduce maternal and perinatal mortality by addressing three top issues: delays in care, access, and quality of care. “In Zambia, SMGL helped generate a 35% increase in deliveries taking place in a health facility, and the number of facilities that could provide basic emergency obstetric and new-born care services increased from three to six. The initiative also drove an 18% increase in HIV-positive women who sought treatment for the prevention of mother-to-child transmission of HIV, and significantly reduced the number of facilities experiencing stock outs of life-saving medicines like oxytocin and magnesium sulphate.”²⁰³

UNICEF and a range of other important partners have been investing in HIV/AIDS education and awareness, and prevention campaigns—including as part of its 2011-2015 strategic plan.²⁰⁴

201 Ministry of Health. (2011). *National Health Strategic Plan 2011-2015*. http://www.nationalplanningcycles.org/sites/default/files/country_docs/Zambia/zambia_nhsp_2011-2015_.pdf

202 USAID. (2015). *Overview: Zambia*. <https://www.usaid.gov/zambia>

203 USAID, Peace Corps, SMGL. (2014). Promising results from a big push to reduce maternal mortality. *Frontlines Online Edition: Maternal and Child Health*. <https://www.usaid.gov/news-information/frontlines/maternal-child-health/promising-results-big-push-reduce-maternal>

204 UNICEF. (2015). *Zambia: HIV/AIDS*. http://www.unicef.org/zambia/5109_8459.html

With UNICEF’s focus, as well, on Unite4Climate—a powerful youth campaign raising awareness and activism of young people on climate issues, including climate and health

interlinkages—a number of impactful initiatives and institutional arrangements may be in place to build upon, and strengthen gender capacity of, for effective ccGAP delivery.

ACTION PLAN: HEALTH

OUTCOME: The health and wellness of women and men is promoted and protected in the context of increased climate change-related threats, particularly at community level, in both urban/urbanising and rural settings

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
1. Build knowledge base on health, gender and climate change linkages, particularly from a Zambia-specific perspective, and including traditional medicinal practices	1.1. Identify key partners to pursue research on health, gender and climate change linkages	No. of researchers engaged	MoG, Ministry of Health, MLNREP, UNICEF, UNFPA, WHO, academia, community health workers, civil-society organisations (CSOs), community-based organisations (CBOs), faith-based organisations (FBOs), Ministries of Health/Gender from other countries	150,000
	1.2. Identify traditional practices and medicinal plants that can support community-level health and wellness (e.g. to ward against vector-borne diseases, purify water, etc.)	No. of plants/practices identified		
	1.3. Conduct exchange visits with nearby countries/organisations who may have done the above (e.g. with Mozambique; with WHO programmes)	No. of “best practice” examples identified		

ACTION PLAN: HEALTH (CONT.)

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
2. Strengthen the mainstreaming of gender and climate change links/ concerns into national health policies, strategies and plans, including for non-government partners	2.1. Organise capacity building session for key Ministry of Health personnel and stakeholders, including UNICEF, UNDP, UN Population Fund (UNFPA), USAID and other key partners	Orientation session No. of women and men participants	MoG, Ministry of Health, MLNREP, UNICEF, UNDP, UNFPA, WHO, academia, community health workers, CSOs, CBOs, FBOs	100,000
	2.2. Advocate for inclusion of gender and climate concerns in health policies, plans, etc.	No. of policies, strategies, and plans that integrate gender and climate		
3. Build the capacity of women and men health workers to be able to prevent and cope with climate change-related health concerns	3.1. Identify key networks of health workers, at national, provincial, district and community levels	No. of health workers identified No. of networks identified	MoG, Ministry of Health, MLNREP, UNICEF, UNFPA, WHO, academia, community health workers, CSOs, CBOs, FBOs, traditional leaders	350,000
	3.2. Conduct awareness raising and technical skills training campaign to educate health workers on gender and climate risks and concerns	No. of training sessions No. of health workers trained		
	3.3. Hold sensitisation campaigns, especially targeting churches and other community-level	No. of sensitisations No. of communities targeted		

ACTION PLAN: HEALTH (CONT.)

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
4. Improve public access to health services, particularly in the context of climate-related disasters	4.1. Mobilise resources to support increased numbers of local-level emergency aid services, including bicycles with wagons, marine ambulances, and mobile phones	No. of bicycles/wagons, marine ambulances, and mobile phones purchased	MoG, Ministry of Health, MLNREP, UNICEF, UNFPA, WHO, academia, community health workers, CSOs, CBOs, FBOs, traditional leaders, donor community	400,000
	4.2. Establish mobile phone emergency information network	Mobile network No. of women and men informed and using network		
	4.3. Identify communities/community health workers to unite in a network and equip them with above resources (marine ambulances, etc.)	No. of communities/health networks identified		
	4.4. Advocate for the building of additional community health centres with resources to combat climate change impacts	No. of additional health centres constructed or planned		

12. PRIORITY SECTOR III: FORESTS, INCLUDING PROTECTED AREAS, REDD+, BIODIVERSITY AND WILDLIFE²⁰⁵

12.1. Overview

Forests currently cover about 4 billion hectares, about 31% of the earth's surface. Forests have played a major role in human history as well as a crucial role in human survival—they not only provide important ecosystem services, but also supply products with economic value, such as fuel wood and timber, food, medicines and other non-timber forest products (NTFP), among others. Given these linkages, forest use, including deforestation and destruction of forests, has been associated with periods of economic and social development as well as economic decline.²⁰⁶ Adding to this dynamic, deforestation and forest degradation are also major anthropogenic sources of atmospheric CO₂ and key drivers of climate change.

It is in this light that international effort emerged to address forest loss and mitigate the effects of climate change through “reducing emissions from deforestation and forest degradation in developing countries” (REDD). In practice, the concept of REDD+ creates financial incentives for results-based actions and compensates governments, companies or owners of forests in developing countries for measurable, reportable and verifiable reductions in GHG emissions from activities (or a reduction of emitting activities) in the forest sector. In broad terms, actors in developing countries who take efforts

to prevent deforestation or forest degradation that would have otherwise taken place can obtain financial compensation for such efforts. In this process, they create carbon credits or carbon offsets—a financial instrument that represents a tonne of CO₂ or CO₂ equivalent (CO₂e) removed from the atmosphere from an emissions reduction project. Then these offset certificates can be purchased by actors, often industrialised countries, wanting to offset their own carbon emissions.

12.2. Situation analysis

Zambia is located at an altitude of between 350m and 2,164m above sea level, largely on the Central African Plateau, with four major biomes consisting of forest, woodland, grassland and aquatic systems. Zambia covers an area of 752,614 km² and is one of the most forested countries in Africa, with roughly 67% (49.9 million ha) of the total landmass covered by indigenous forests,²⁰⁷ however, over 65% of the forests are secondary growth. Most of the forested area, 31 million hectares, is administered under customary law (63%). Both trust and reserve lands are regarded as traditional customary land and administered by traditional chiefs and their headmen who control land allocation. Ownership is sustained through land utilisation (cultivation) and may be inherited—traditionally this is to only males. State-owned land follows traditional land as the second largest with 12 million hectares in existence—as gazette protected forest reserves and national parks, and lastly 5 million hectares are privately owned forests with legal

²⁰⁵ The research to inform the ccGAP planned for additional interlinked issues beyond forests, but the ccGAP workshop discussions strongly indicated a focus on forests and REDD+. Additional content is provided here, including as potential for areas of future activities, but the action plan is focused on forests and REDD+.

²⁰⁶ Food and Agriculture Organization of the United Nations (FAO). (2012). *State of the World's Forests 2012*. Rome, Italy. <http://www.fao.org/docrep/016/i3010e/i3010e.pdf>

²⁰⁷ *ibid.*

land titles.^{208, 209} Land, forests and wildlife resources in uncultivated areas of customary and protected areas are communally utilised by surrounding communities, especially in the Game Management Areas which act as buffer zones surrounding the National Parks or protected areas.

The Land Act of 1995 has allowed for conversion of customary land to state land with private leasehold interests, with at least 10% of land held under customary tenure becoming privatised through conversion to leaseholds since. In some cases these leaseholds have resulted in needed investment in rural areas and created opportunities for local employment, contract farming, secondary businesses, development of infrastructure and social services—but often with the consequence of deforestation and forest degradation. In most cases, the conversion of customary land to large leaseholds has eroded local community rights of communal land, causing local women and men to lose access to water sources, grazing land, and forest products.

Notwithstanding the great potential Zambia holds in the area of sustainable forest management and the overall contribution of this to national, regional and global development priorities, the nation's forests are under increased pressure. In the past it has been estimated that between 250,000 and 300,000ha

of forest are lost every year, (approximately 0.50-0.60% of total forest cover) with deforestation rates varying between provinces with the most deforested regions being Luapula, Eastern, and Copperbelt with rates of 2.47%, .85% and .84%, respectively.²¹⁰ However, in a recent analysis in preparation for the REDD+ National Strategy (draft to be approved in 2016) the Forest Reference Emissions Level concluded that the average deforestation from 2000 to 2010 was 109,000ha per annum and from 2010 to 2014 the average deforestation rate was 124,000ha per annum.²¹¹ The change in deforestation rates is attributed to increased precision in documentation, including the use of satellite data. It is important, however, to recognise the increasing rate of deforestation over the 2010-2014 period in comparison with the 2000-2010 rate.²¹²

Degradation is also an issue in Zambia with 61% of the forest and other wooded land which comprise bushes, shrubs, wooded grasslands and thickets being disturbed in one way or another by human activities, and climate change will likely increase pressures due to with increasing rainfall variability, incidence of pest, diseases, and forest fire risk.²¹³ At the global level, the result of this deforestation and forest degradation contributes to Zambia being identified as one of the top-ten GHG emitting countries.²¹⁴ It is also estimated that above- and below-ground carbon stored in biomass is

208 The REDD Desk. (2013). *REDD in Zambia*. <http://theredddesk.org/countries/zambia>

209 Kalinda, T., Bwalya, S., Mulolwa, A., & Haantuba, H. (2008). Use of integrated land use assessment (ILUA) data for forestry and agricultural policy review and analysis in Zambia. *Report prepared for the Forestry Management and Planning Unit of the Department of Forestry, FAO, and the Zambian Forestry Department, Ministry of Tourism, Environment, and Natural Resource Management. Lusaka, Zambia.*

210 Chidumayo, E.N. (2012). Development of reference emission levels for Zambia. FAO – Zambia.

211 Kasaro, D. (2016). *National workshop presentation on climate change in Zambia*. PowerPoint presentation at ccGAP workshop

212 Zambia's Forest Reference Emissions Level Submission to the UNFCCC. (2016).

213 FAO. (2012). *State of the World's Forests 2012*. Rome, Italy. <http://www.fao.org/docrep/016/i3010e/i3010e.pdf>

214 Environmental Investigation Agency (EIA). (2008). *Demanding deforestation: What else can illegal logging and international timber trade policy teach us for effectively reducing emissions from deforestation and forest degradation?* EIA, London.

estimated to be 2.5 billion tonnes with a further 204 million tonnes stored in dead wood—highlighting the importance of responsive policy and programming to reduce deforestation and forest degradation rates, and absolute value.²¹⁵

Current forest and land management practices play a crucial role in this regard, affecting the sector's performance in terms of its contribution to GDP and poverty reduction, as well as its potential for carbon management and climate change mitigation and adaptation. It is under these circumstances that the forest management in Zambia has embarked on programmes to restore the country's forest cover, such as REDD+ which offers an opportunity to bring transformational and systemic change on how forests are used, managed and protected, particularly in light of the linkages with other sectors such as agriculture, energy, mining and tourism among others. From the *Zambian Climate Change Response Strategy*, other interventions proposed to enhance resilience in the forest sector include:

- Intensified and sustained afforestation and reforestation programmes to build on existing similar programmes including the rehabilitation of degraded forests;
- Promoting agroforestry as a way of meeting both food/subsistence and fuel-wood needs;
- Promoting alternative/non-timber livelihood systems such as apiculture (beekeeping) to take pressure off forest resources;
- Promote sustainable harvesting of caterpillars as well as research into domestication of caterpillar and mushroom farming;

- Research in and promotion of alternative energy sources, energy conservation initiatives, and efficient charcoal production and utilisation technologies to reduce biomass (wood) fuel consumption;
- Involving forest-dependent rural communities in forests management through an institutional framework that recognises and defines their role;
- Enhanced technical and financial support to extension services;
- Application of improved and time-tested forest management practices that can enhance the resiliency of forests and forest products: e.g. planting mixtures of species, maintaining several age classes, reducing tree density, and pruning trees at strategic intervals; and
- Enhance support for disease and pest surveillance and control.

The large-scale and cross-cutting nature of interventions required to implement these strategies and REDD+ in Zambia though will necessitate high-level government support and reforms. In recognition of the role REDD+ can play in reducing emissions and facilitating sustainable socioeconomic development, the *Zambian government* is presently assessing the opportunities potentially delivered through REDD+.²¹⁶

12.2.1. Drivers of deforestation

Land-use change and forest loss are the main contributors to Zambia's GHG emissions—the second national communication with the UNFCCC by Zambia in 2010 estimated that CO₂ emissions from forestry and land-use

215 FAO. (2012). *State of the World's Forests 2012*. Rome, Italy. <http://www.fao.org/docrep/016/i3010e/i3010e.pdf>

216 UNREDD. (2013). <http://www.unredd.org/UNREDDProgramme/CountryActions/zambia/tabid/1029/language/en-US/Default.aspx>

change contributed to almost 90% of total GHG emissions in 2000.²¹⁷ With this high rate of deforestation and degradation, Zambia is estimated to contribute to 3% of the worldwide emissions from deforestation.²¹⁸ There are several main drivers of deforestation and forest degradation in Zambia including: the opening of new land for agriculture; production of charcoal and harvesting of wood fuel for domestic, commercial, and industrial purposes; late burning and uncontrolled fires in the dry season; uncontrolled logging of timber and over-harvesting of key species, particularly for the mining industry; unsustainable agricultural methods; expansion of settlements, and increasing urbanisation and development.

There are several contributing factors to deforestation and degradation but the issues all are surrounded by the fact that land and forest management in Zambia lack full and active participation by key stakeholders in the forest sector. This results in difficulty implementing policies and legal frameworks that support sustainable forest management (because stakeholders aren't aware or involved); the lack of institutional capacity and coordination in the management of forest resources; issues around land tenure and access; and creates a cycle of poverty among other socioeconomic factors that cause rural populations to rely heavily on forests for subsistence and their livelihoods,

increasingly so.²¹⁹ As stated above, most of the land is under customary rule, but where government ownership exists this is equivalent to no ownership as there is no one on the land to control exploitation.²²⁰ Additionally, a household survey done of forest communities found that often chiefs who own land under customary rule will often sell land to private industry for a profit, contributing to a sector rife with corruption.²²¹

12.2.2. Plantations

In the 1960s the Zambian government began piloting plantation development. It has since grown to cover 55,000ha of industrial forest in the country with most species being non-native with mainly pine (79%) and eucalyptus (20%). Until 1991 all forest plantations were owned by the government but the switch from a command economy to a market economy encouraged large participation and takeover by the private sector resulting in efforts to increase exports of forest products. However, commercial plantations are no longer growing in Zambia due to not enough replanting and the lack of expansion. It is estimated that forest plantations have greatly reduced the pressure on indigenous forests in the Copperbelt, particularly in providing raw material for industries especially mining, but also preserving biodiversity of the forests.^{222, 223}

217 Zambia 2nd National Communication to UNFCCC. Retrieved from <http://unfccc.int/resource/docs/natc/zmbnc2.pdf>

218 Day, M., Gumbo, D., Moombe, K., Wijaya, A., and Sunderland, T. (2014). *Zambia country profile: Monitoring, reporting and verification for REDD+*. CIFOR.

219 Kokwe, M. (2012). *Forest management practices with potential for REDD+ in Zambia*. Lusaka, Zambia. <http://www.fao.org/docrep/016/i2826e/i2826e00.pdf>

220 Njovu, Felix. (1998). *Forest certification in Zambia*. Yale School of Forestry and Environmental Studies. http://environment.yale.edu/publication-series/documents/downloads/0-9/22_Zambia.pdf

221 The Cloudburst Group.(2015). *Impact evaluation of the community based forest management program*. USAID. <http://www.slideshare.net/TheCloudburstGroup/aea-presentation-impact-evaluation-of-cfp-zambia>

222 Njovu, Felix. (1998). *Forest certification in Zambia*. Yale School of Forestry and Environmental Studies. http://environment.yale.edu/publication-series/documents/downloads/0-9/22_Zambia.pdf

223 ZEMA, GRID-Arendal, GRID-Sioux Falls, UNEP. (2012). *Zambia: Atlas of our changing environment*.

12.3. Gender and forests and REDD+

Forests provide subsistence and income for more than 1.6 billion people, including approximately 60 million indigenous peoples.²²⁴ Those who rely on forests for their livelihoods are among the poorest people on the planet, and they are disproportionately female.²²⁵ In fact, women represent 70% of the world's 2.8 billion people living on less than USD 2 per day.²²⁶

Further, women and men's specific roles, rights and responsibilities, as well as their particular use-patterns and knowledge of forests, shape their experiences differently. As such, women, men and youth in many countries often experience the effects of climate change and forestry-related actions, including REDD+, differently. Similarly, they also often respond differently to corresponding incentive measures and public policy interventions; have different relationships with institutions (international organisations, national and local governments, and traditional authorities); and differential access to and control over resources.²²⁷ This is particularly the case for women around REDD+, as they are often the primary users of forests, whose practices can include traditional agroforestry systems, gathering wild plants for

food and medicinal purposes, collecting NTFPs, and forest patrolling and monitoring.^{228, 229}

Thus, both women and men are key agents of change, whose unique but often differentiated knowledge, skills and experience are vital to successful REDD+ actions. However, given various social, economic and cultural inequalities and legal impediments, particularly within the forest sector, women (and often other marginalised groups such as the poor, youth, handicapped, etc.) within many societies continue to experience ongoing exclusion that limit their ability to fully participate, contribute to and benefit from REDD+ action.²³⁰ Understanding the varying roles played by men and women can enable a more accurate analysis of the problem—who is driving deforestation, where and how—and also help identify potential solutions while allowing interventions be applicable and relevant at national and local levels.²³¹

It is a known fact that women play an important role in the utilisation of forest products. They are the major collectors of firewood, fruits, mushrooms and medicines from the forests, as well as taking part in activities in the forests such as beekeeping or silkworm rearing. However, in the forestry sector in Zambia, as with many

224 FAO. *Summary for gender strategies for ZFAP*. http://www.fao.org/docrep/x0208e/x0208e02.htm#P48_6361

225 UN-REDD Programme. (2011). *The business case for mainstreaming gender in REDD+*. http://www.unredd.net/index.php?option=com_docman&task=doc_download&gid=6279&Itemid=53.

226 FAO, World Bank, & IFAD. (2009). *The gender in agriculture sourcebook*. <http://siteresources.worldbank.org/INTGENAGRLIVSOUBOOK/Resources/CompleteBook.pdf>.

227 UN-REDD Programme. (2011). *The business case for mainstreaming gender in REDD+*. http://www.unredd.net/index.php?option=com_docman&task=doc_download&gid=6279&Itemid=53.

228 Setyowati, A. *Policy brief: How bringing gender perspectives into REDD+ policies could enhance effectiveness and empowerment*. Women Organizing for Change in Agriculture & Natural Resource Management. <http://www.wocan.org/resources/wocan-policy-brief-how-bringing-gender-perspectives-redd-policies-could-enhance>; UN-REDD Programme (2011). *The business case for mainstreaming gender in REDD+*.

229 Eggerts, E. (2015). Chapter 4.2. In L. Aguilar, M. Granat, & C. Owren (Authors), *Roots for the future: The landscape and way forward on gender and climate change*. Washington, DC: IUCN & GGCA.

230 Setyowati, A. *Policy brief: How bringing gender perspectives into REDD+ policies could enhance effectiveness and empowerment*. Women Organizing for Change in Agriculture & Natural Resource Management. <http://www.wocan.org/resources/wocan-policy-brief-how-bringing-gender-perspectives-redd-policies-could-enhance>

231 Eggerts, E. (2015). Chapter 4.2. In L. Aguilar, M. Granat, & C. Owren (Authors), *Roots for the future: The landscape and way forward on gender and climate change*. Washington, DC: IUCN & GGCA.

other sectors, the main issue marginalising progress for women is the limited access to land tenure limiting their role in decision-making and forest management through customary arrangements, cultural norms, stereotypes, lack of information, training and education.²³²

There is a need to ensure that information on farm and tree activities is gender disaggregated as it is well established that there is significant variation in gender roles in this area. Supporting services, such as extension, information dissemination, and seedling provision must also be gender sensitive. Forest use and consumption are also influenced by household fuel activities dominated by distinct gender roles, which have changed relatively quickly depending on economic and technological changes and deterioration of natural resources—for example charcoal production.²³³

The contribution of forests to the Zambian economy is thought to be grossly underestimated, especially taking into consideration the role and contribution of women through trading NTFP and providing alternative, or supplemental income, but also for the poorest households provide a safety net contributing to food security.²³⁴ In addition to food, forests provide many medicinal plants used by rural, peri-urban and urban communities, especially women, to cure numerous diseases. The National Forestry Policy does include a strategy to promote the involvement of women in small-scale enterprises particularly dealing with these NTFP.

Women in Zambia also play a large role in agricultural production and along the entire food value chain and while this is a main driver of deforestation, there are also restorative techniques such as agroforestry with the potential to enhance soil fertility, watershed management, and increase tree cover all of which can increase resilience by diversifying crops and nutritional intake, provide alternative income, and increase for communities.²³⁵ The opportunities to engage women in planning and implementation of restoration activities is immense, particularly because they are most likely already participating in such activities.

12.4. Biodiversity and wildlife

It is evident that Zambia's economy is deeply dependent upon its lush natural resources in a number of ways—not least of which are the forests and all the encompassing resources. At the very same time, that dependence entrenches patterns of behaviour that are stripping Zambia of its riches. Deforestation and degradation from mining activities, plus the construction associated with tourism, for example, may have (relatively short-term) economic returns while leaving longer-term impacts on wildlife (the natural flora and fauna of the country) and fragile ecosystems.

The increased over-exploitation of forest resources, especially in peri-urban areas high population centres, has posed problems resulting in deforestation and consequently loss

²³² Fumpa-Makano, R. (2011). *Forests and climate change: Integrating climate change issues into national forest programmes and policy frameworks*. Forest Department, Zambia, and FAO. Lusaka, Zambia.

²³³ AFDB. (2006). Republic of Zambia: Multi-Sector Country Gender Profile

²³⁴ Ministry of Tourism, Environment and Natural Resources. (2009). *National Forestry Policy*. Forest Department. Lusaka, Zambia.

²³⁵ Kokwe, M. (2012). *Forest management practices with potential for REDD+ in Zambia*. Lusaka, Zambia. <http://www.fao.org/docrep/016/i2826e/i2826e00.pdf>

of biodiversity. The direct and indirect services provided by Zambia's rich biodiversity need dire attention to bolster the security and resilience of its population; from food, fuel, and medicinal products, to clean water supply, fertile soil, and pollination,²³⁶ the health of Zambia's biodiversity supports every aspect of human life.

Some of Zambia's activities are driving the loss of biodiversity, while other factors are beyond Zambia's direct control but nevertheless need attention, particularly in the ever-increasing impacts of climate change. Acid rain from mining, overexploitation of resources (such as over-hunting) and pollution are direct contributors of biodiversity loss that Zambia can take proactive measures to control. The global habit of burning fossil fuels, especially in the industrialised global North, is a lesson which Zambia should take heed of but meanwhile will need to prepare to adapt to; climate change is a disaster for sustaining the world's biodiversity.

According to the Atlas of Our Changing Environment report, expanding human settlements, cultivation, livestock grazing and deforestation, as well as road construction and mining have resulted in the fragmentation of ecosystems and obstruct wildlife migratory routes to breeding, watering and feeding grounds.

Approximately 225,000km², 30% of the total land cover in Zambia, have been designated as protected areas. This is one of the largest amounts of protected land in Southern Africa with twenty National Parks making up 8% of the

country's land cover and 34 Game Management Areas (GMAs) making up 22%.²³⁷

Zambia is home to several types of wetlands, the most common of which are riverine wetlands, floodplains like the Barotse, Kafue flats, Luangwa, and dambos. Dambos are a type of wetland particular to Central, Southern and Eastern Africa, particularly Zambia and Zimbabwe and are characterised by grasses, rushes and sedges. Dambos are very common in Zambia. Nearly 18% of the country is covered by wetlands, of which 12.5% are dambos. Wetlands are water resources that are used for agriculture, livestock, fisheries, and domestic water supplies, and the importance of women's roles and responsibilities in these regions have been emphasised in various national development plans. Wetlands functions also improve the quality of water by acting as a filter for pollutants and sediments.²³⁸

Eight of Zambia's wetlands are Ramsar sites, which are of international significance whose conservation and wise use are promoted under the Convention on Wetlands, which was agreed upon in Ramsar, Iran, in 1971. These have been noted as particularly important due to their functioning as bird sanctuaries.

With regards to wildlife, some species under threat due to either habitat destruction and/or over utilisation are elephant, cheetah, eland, sable, roan, hartebeest, blue monkey, leopard and wild dog. A study of the trade and utilisation of game meat in Zambia also added other species under threat to the list due to increased

236 Mwanza, N. (2006). *Biodiversity overview Zambia*. MLNREP.<http://www.biodiv.be/zambia/biodiversity/biodivzam/biodivover/overview>

237 ZEMA, GRID-Arendal, GRID-Sioux Falls, UNEP. (2012). *Zambia: Atlas of our changing environment*.

238 ZEMA, GRID-Arendal, GRID-Sioux Falls, UNEP. (2012). *Zambia: Atlas of our changing environment*. pp. 86

hunting pressure. These include buffalo, kudu, warthog, impala and duiker.

As for fish resources, some species have been recorded to be threatened due to over utilisation and poor catch methods, for example, the lower Zambezi-Luangwa Valley fishing system has recorded mud suckers, sailfin fish, breams and tiger fish to be threatened.²³⁹ Farming activities are also reported to degrade the fishery habitats and breeding areas of the wetlands due to drainage of water through cultivation. The conservation and management of these

fishery areas and important animal habitats in the dry lands are very crucial for purposes of biodiversity conservation.²⁴⁰

Some tree species that are threatened in Zambia include *Danielliaalsteeniana*, *Entandrophragma devevayi*, *Baikiaea plurijuga*, *Podocarpus milanjanus*, and *Encepharlotosgoetzi*. An example on tree species under pressure in Luangwa District as a result of human population pressure and decentralisation has been given in **Table 1** below.

TABLE 1: TREE SPECIES EXTENSIVELY USED AND WHICH ARE UNDER PRESSURE IN THE LUANGWA VALLEY²⁴¹

TREE SPECIES	MOST IMPORTANT USE OF THE TREE	OTHER USES
Mubuyu - <i>Adansonia digitata</i>	Fibre	Fruits, young leaves for relish
Mululu-Khaya <i>nyasica</i> (anthotheca)	Timber and Canoes	Firewood and medicines
Mulombe- <i>Pterocarpus angolensis</i>	Timber	Medicine
Muzumba- <i>Kirkia acuminata</i>	Timber	-
Mubanga- <i>Pericopsis angolensis</i>	Poles for Construction	Firewood, timber
Mupani- <i>Colospermum mopane</i>	Fire-wood, charcoal hard wood poles	Used locally in bridge construction, handles for hand tools
Mvungula (sausage tree) <i>Kigelia Africana</i>	Making of pounding mortars	-

²³⁹ *ibid.*

²⁴⁰ Kalyocha, G. (2000). Sustainability of Community based natural resources management programmes: Lessons from the LIRD. Paper presented to the IUCN Workshop on Development of criteria for assessing sustainability of CBNRM programmes in Southern Africa. 16th-17th March 2000, Harare, Zimbabwe.

²⁴¹ *ibid.*

TABLE 1: TREE SPECIES EXTENSIVELY USED AND WHICH ARE UNDER PRESSURE IN THE LUANGWA VALLEY (CONT.)

TREE SPECIES	MOST IMPORTANT USE OF THE TREE	OTHER USES
Milaza (palm) <i>Hyphae nevertriosa</i>	For making hand-crafts, for example, baskets, hats and many others	Food source in hunger periods
Reeds (Matete)- <i>Phragmites mauritianus</i>	Making mats, chicken run, coffins, and many others	-
Bamboos - <i>Oxytenanthera</i>	For baskets (important in plateau areas)	-
Black ebony- <i>Dalbergia melanoxylon</i>	Carving (sold to markets in Lusaka)	-

12.5. Forest policy and programme interventions

The growing evidence of climate change has heightened the need to utilise forests as carbon sinks. However, the ability to utilise forests for carbon sequestration and carbon storage will not come easily; it will require coordinated efforts, starting with incorporating this new set of ideas into national forest programmes, forest policies and legal statutes.

The Forestry Department and the national REDD Coordination Unit (RCU), which is the focal point for REDD+ in Zambia, both sit within the MLNREP. The forest sector and REDD+ have evolved in the context of a national development agenda and framework that seeks to achieve sustained economic growth that is compatible with environmental and ultimately social sustainability. The Government of Zambia

has developed various climate change-related policies that include the NPE (2007); a new National Forestry Policy (2014); the National Energy Policy (2008); the National Agricultural Policy (2014); a National Strategy for Reducing Emissions from Deforestation and Forest Degradation (2015); a revision of the Forest Act No. 4 (2015); and passage of the Urban and Regional Planning Act No. 3 (2015). These policies, strategies, and laws are aligned with the Revised Sixth National Development Plan and the Vision 2030 which promotes “A prosperous middle income country by 2030”, both of which support development of a low carbon and climate-resilient development pathway.

These policies recognise forests as important carbon sinks that should be enhanced, and promotes the development of alternative energy sources to wood fuel in order to reduce dependence and pressures on forests.

Furthermore, the long-term development strategy, as promoted in the Vision 2030, has as a target to reduce the share of wood fuel in the energy sector by 40% in 2030. These policies have evolved in a wider governance context that seeks to achieve a decentralised approach to governance and public administration but despite these efforts, the forest sector has maintained a central approach to forest management, largely excluding local communities around forests. Because of the continuing barrier to a participatory approach the evolving forestry sector and development of the REDD+ mechanism is aiming to support the decentralisation strategy to promote community management of local forests for enhancing rights, benefit sharing and sustainability.

National Policy on Environment (NPE) (2009)

The NPE of 2009 gives an overarching approach to the various environmental sectors, including forests and natural resources, with a specific strategy on forests inclusive of the particular roles and responsibilities of women and men: “Revise and update the Forest Act in order to strengthen it in line with the National Forestry Policy and to promote participatory forest management and sustainable utilisation of forest resources having particular regard for private sector and participation of women in all aspects of forest resource management.” The National Environmental Policy also includes recognition on the importance for gender equity, and a specific objective “to integrate gender, youth and children concerns in environmental planning decisions at all levels to ensure sustainable social and economic development as an integral component in gender and development policy.”²⁴²

National Forestry Policy (2008)

The goals of the policy are to improve forest management systems and to formulate and implement appropriate forest policies and programmes for the sustainable management and use of forest resources. The promotion of participatory management structures involving local communities is included in the policy as a means of achieving sustainable forest management, as is mainstreaming of gender in the policy with specific reference noting the importance of women’s contribution to the forest sector via differentiated interest in conservation, production and management. It specifically recognises the importance of women in relation to non-timber forest products, developing the capacity of women in forestry management in trainings and formal education settings, and improve their access to forest products and services.²⁴³

The Forest Act (2015)

The Forest Act of 2015 proclaims that all regulations adhere to “participation of local communities and Chiefs which ensures equitable gender participation;” and recognises that the Forestry Department’s role in exploiting forest resources and the promotion of sustainable forest management qualifies the department to: “devise and implement participatory forest management approaches for indigenous forests and plantations involving local communities, traditional institutions, nongovernmental organisations and other stakeholders, based on equitable gender participation.” Much of the act includes provision of community forest management groups, their development and role in decision-making on forest resource use and management but nowhere within the description

²⁴² National Policy on Environment. (2009). Retrieved from <http://zm.chm-cbd.net/implementation/legislation/policies-related-environment-and-biological/national-policy-environment-npe>

²⁴³ Zambian National Forestry Policy. (2008). MLNREP.

of the CFMG is equitable gender participation recognised as integral to the discussions, decision-making, and benefits.

12.5.1. REDD+

In 2010 Zambia was selected as a pilot country under the UN-REDD programme and has

since undergone the REDD+ Readiness phase (completed in 2013) and developed a National REDD Strategy. The Strategy was developed with the aim of turning the forestry sector into a dynamic and vibrant sector by boosting employment in the sector and increasing the sustainable use of forestry resources.

UNFCCC: Gender in REDD+

Within the context of REDD+, the UNFCCC Cancun Agreements of 2007 raised the profile of gender within the climate change debate. Of particular relevance to REDD+, Parties guided countries in Decision 1/CP.16 (Paragraph 72), that when “developing and implementing their national strategies or action plans, to address, inter alia, drivers of deforestation and forest degradation, land tenure issues, forest governance issues, gender considerations and the safeguards....ensuring the full and effective participation of relevant stakeholders, inter alia, indigenous peoples and local communities.” Building on this guidance, the

2011 UNFCCC Durban Outcomes (Decision 12/CP.17, Paragraph 2) further guided countries that when providing information on how safeguards are addressed, gender considerations should also be respected in this process. These various gender references within COP decisions help provide an effective compliancy framework at the international level, which illustrates the need and rationale for incorporating gender equality principles across the REDD+ thematic areas at national and local levels, including in forest policy, actions plans/strategies and safeguards, among others.

UN-REDD+ National Joint Programme (NJP)

The 2010 REDD National Joint Programme (NJP) strategy recognises the inherent gender inequality in the forestry sector regarding the role in clearing the land, but position in society which hinders their involvement in information sharing and decision-making. They therefore are often not consulted but this specific NJP references the importance of insuring gender equality by ensuring training, participation, and

representation on management committees. The document also specifically discusses the participation of local women as essential to the REDD+ process for their gender-specific perspective and knowledge of forests and resource use and management.²⁴⁴

As Zambia was beginning the process of REDD+ development in 2010, a draft Forest Policy was also being developed.

244 UN Collaborative Programme on REDD+ in Developing Countries National Joint Programme Document. (2010).

Draft Forest Policy (2014)

The policy—approved by Cabinet in December 2014, has yet to be officially promulgated, is REDD+ smart and progressive. The policy makes explicit reference to the REDD+ objectives and as highlighted in the policy, “Zambia is expected to contribute to minimising the impact of greenhouse gas emissions and conserving biodiversity through the achievement of these policy objectives related to socio-economic and ecologically sustainable forest management, maintaining and increasing the total natural forest cover and by increasing the percentage of land under plantation.” The policy embraces social and environmental safeguards by emphasising the important role of traditional authorities in the sustainable management of forests and equitable benefit sharing among stakeholders as well as the importance of biodiversity conservation. The draft policy mentions the need to implement legal frameworks which would allow women to secure forest ownership rights, and to improve their participation in management processes and policy formulation.

REDD+ Draft Strategy (2015)

Its goal is to contribute to national reductions in greenhouse gas emissions by improving forest and land management, and to ensure equitable sharing of both carbon and non-carbon benefits among stakeholders. The strategy is guided by seven core principles: effectiveness, efficiency, fairness, transparency, accountability, inclusiveness and sustainability. Within the principle of fairness it states REDD+ is “to be implemented on the basis of the principles of equality for all and human rights protection in forest management and natural resource management in general,” including specifically women, youth, and other disadvantaged groups and communities vulnerable to socio-economic

and environmental change. Implementation of the national REDD+ strategy will focus on tackling different drivers of deforestation in both the forestry and other identified key sectors such as agriculture, energy, mining and land-use. The strategy will be implemented through a landscape approach at the watershed level and through national-level policy reforms. It will take into account all land uses in a holistic way (including water and wildlife) and will work to lessen the competition for natural resources among different sectors.

Nyimba Forest Project

The project ‘Developing models for measuring, reporting and verification (MRV) for REDD+ in the Miombosocioecological system: utilising opportunities under Zambia’s UN-REDD+ quick-start programme’, known as the Nyimba Forest Project (NFP) is implemented by Centre for International Forestry Research (CIFOR) with support from USAID/Zambia Economic Growth Program. The main focus of the project is to provide support to Zambia’s REDD+ Readiness Programme by conducting additional in-depth studies and assessments on livelihoods, forests resources and providing recommendations for incorporation into the design of the national REDD+ strategy for Zambia. To ensure that the National REDD strategy is inclusive, one of the outcomes of the project was to develop methods and strategies for mainstreaming gender in the NFP and produce guidelines on addressing gender issues in REDD+ activity implementation. Strategies in this project aim to ensure equal participation of women and men in project activities, use gender as a criterion to obtain gender specific information, disaggregate project information by gender, form partnerships and work with gender experts.²⁴⁵

245 CIFOR. (2015). Retrieved from <http://www.cifor.org/gender/gender-integration-nyimba-forest-project-zambia/>

12.6. Biodiversity policies and programmes

Management of the wildlife subsector underwent a transformation from the Zambia Wildlife Authority (ZAWA) to Department of National Parks and Wildlife (DNPW) and has been tasked to conserve and manage the wildlife estate on behalf of Government; it will do this however by taking into consideration the commercialisation of some aspects of wildlife management. This institutional structure benefits from efficiency and more investment into the national parks and management areas, while also exploiting their assets.

Zambia has a number of programmes and projects relevant to its maintenance of biodiversity and wildlife.²⁴⁶ Major national programmes include: the NAPA, National Capacity Self-Assessment; Provincial Forestry Action Programme; Reclassification and Effective Management of Natural Protected Areas System Project; Support to Economic Expansion Programme (SEED); and Zambia Forestry Action Programme.

Beyond the national framework, which has prioritised and valued the protection of its wildlife for some decades, for example also via National Development Plans, Zambia is Party to key global Conventions and agreements that provide normative standards and frameworks for planning action. Notably, according to 2016 Environment and Gender Information (EGI) platform analysis, Zambia has done a relatively impressive job integrating gender references in national reports to the Conventions. For example:

- CCD: In Zambia's 2000 National Action Programme for Combatting Desertification

and Mitigating Serious Effects of Drought in the Context of the UNCCD, 14 references to women and women's concerns were made; women were included as stakeholders in the development of the plan; women are included in capacity building; and a percentage (at least 5%) of the budget for a "women's special support project" is included.

- CBD: Zambia has included references to women in its 2014 3rd National Report to the CBD, noting gender as a cross-cutting issue.
- In Zambia's Second National Biodiversity Strategy and Action Plan 2015-2025, women are noted as stakeholders and the need for addressing gender is likewise noted.
- Ramsar: Within the set of 119 countries whose National Reports to the Ramsar Convention were examined, Zambia is one of only six countries to mention the need for more action to involve women in wetland management—which was also included as a strategy in its recent development plans. It is also one of just four countries to discuss women's traditional knowledge.

In two programmes sponsored by IUCN, women were involved in subsistence farming, handicrafts and selling of fish. Women also were also acknowledged as having indigenous knowledge in the management of agricultural and forest systems and preservation of the plant genetic material for many indigenous/local food crops. These include the Upper Zambezi Wetlands and Natural Resources Management Programme and Zambezi Basin Wetlands Conservation and Resource Utilisation Project. World Wildlife Fund (WWF) is another organisation active in supporting Zambia's biodiversity goals. WWF-Zambia focuses its work on a range of thematic areas including protected areas and community-based natural resource management.

246 <http://www.biodiv.be/zambia/biodiversity/projects>

ACTION PLAN: FORESTS, INCLUDING PROTECTED AREAS, REDD+, BIODIVERSITY AND WILDLIFE

OUTCOME: The forest sector, inclusive of biodiversity, wildlife, protected areas and REDD+ is climate-smart and gender-responsive, and promotes the full and effective participation of women and men, particularly at the community level

OBJECTIVE	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
1. Build and strengthen cross-sectoral institutional understanding and capacity on the linkages of gender, climate change, and forestry	1.1. Review existing literature to identify best practices (across policy and programming) on gender, climate change and forest-sector issues	Literature review	Government institutions (e.g. MoG, MLNREP Department of Forestry, Interim Climate Change Secretariat,	250,000
	1.2. Pursue new research on Zambia-specific forest and gender opportunities and challenges to generate policy recommendations	No. of research products No. of policy recommendations	National REDD Committee), academia, CSOs/CBOs, NGOs, FBOs, media, traditional leadership and	
	1.3. Create database of disaggregated information with respect to gender, forest and climate change issues	No. of disaggregated datasets Database	Local Authority	

ACTION PLAN: FORESTS, INCLUDING PROTECTED AREAS, REDD+, BIODIVERSITY AND WILDLIFE (CONT.)

OBJECTIVE	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
2. Enhance policy alignment across forest, climate and gender issues, Ministries and agencies	2.1. Establish a technical working group on gender, climate and forest	Technical working group	Government institutions, CSOs, CBOs, FBOs, the media, traditional leadership and Local Authority	400,000
	2.2. Organise stakeholders consultations, including especially rural women and men, (e.g. in protected areas) to analyse existing policies and practices that should be responsive to gender and climate change issues	No. of consultative meetings held No. of rural women and men engaged		
	2.3. Technical working group reviews and analyses all relevant policies (i.e. forest and climate-related) and outcomes of stakeholders consultations to prepare targeted recommendations for implementation across Ministries	No. of policies analysed No. of targeted policy recommendations		
	2.4. Advocate for implementation of key recommendations	No. of policies aligned		

ACTION PLAN: FORESTS, INCLUDING PROTECTED AREAS, REDD+, BIODIVERSITY AND WILDLIFE (CONT.)

OBJECTIVE	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
3. Ensure gender equity and inclusiveness for both women and men in community forest management groups (CFMG)	3.1. Conduct gender analysis of forest communities (roles, responsibilities, benefits, needs, etc.)	Gender and forest analysis	MLNREP, MoG, Ministry of Chiefs and Traditional Affairs, CFMG, chiefs, traditional leaders, provincial planners, Local Authority, media, CSOs	600,000
	3.2. Identify women interested in participating in CFMG	No. of women identified to participate		
	3.3. Based on analysis, train women and men on gender and forest, gender and REDD+ issues	No. of women trained		
		No. of men trained		
	3.4. Train women to be included in and participate on CFMG	No. of women trained No. of men trained No. of women participating in CMFG No. of CMFG with trained women (and men) representatives		
3.5. Establish women's knowledge sharing networks within forest management groups, across groups, etc.	No. of networks			

ACTION PLAN: FORESTS, INCLUDING PROTECTED AREAS, REDD+, BIODIVERSITY AND WILDLIFE (CONT.)

OBJECTIVE	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
4. Promote understanding of gender and REDD+, including opportunities, potential co-benefits, and challenges	4.1. Establish a gender and REDD+ task force to enhance work of national REDD+ committee, including via participation of women and by identifying the cross-sectoral gamut of stakeholders	Task force No. of stakeholders identified	Government institutions (MoG, MLNREP, ICCS, etc.), CSOs, CBOs, FBOs, CFMGs, community resources boards, Local Authorities, media, traditional leaders, IUCN, UN-REDD, The REDD Desk	600,000
	4.2. Build mutual capacity of gender and REDD+ stakeholders, including at national, provincial, district and community level	No. of sensitisations, consultations, trainings No. of women engaged		
	4.3. Lobby and advocate for the development of a gender-responsive REDD+ Action Plan and women's participation in REDD+ decision-making, including a women's seat on national committee	Women's seat on committee Action Plan No. of institutions engaged		
	4.4. Develop a concept note to mobilise financial resources for the implementation of a gender-responsive REDD+ Action Plan	Concept note		

ACTION PLAN: FORESTS, INCLUDING PROTECTED AREAS, REDD+, BIODIVERSITY AND WILDLIFE (CONT.)

OBJECTIVE	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
5. Develop gender-sensitive benefit-sharing schemes	5.1 Identify existing benefit systems inside and outside Zambia to share best practices for women (including from Zambia's pilot projects, and knowledge exchange with neighbouring countries)	Benefit-sharing options No. of knowledge exchanges (workshop, or field excursion) No. of benefit systems in Zambia that have incorporated gender-responsive schemes	Government institutions (MoG, MLNREP, ICCS, etc.), CSOs, CBOs, FBOs, forest management groups, community resources boards, Local Authorities, media, traditional leaders, IUCN, UN-REDD, The REDD Desk	200,000
	5.2 Selection of communities for implementation of gender-benefit sharing schemes pilot projects and best practices documentation	No. of communities from various agro-ecological zones		
	5.3 Organise training for local women to understand roles, responsibilities and benefits in REDD+	No. of women trained		
	5.4 Train project managers/ developers on best gender-responsive practices, and support integration of these	No. of initiatives integrating gender criteria		

ACTION PLAN: FORESTS, INCLUDING PROTECTED AREAS, REDD+, BIODIVERSITY AND WILDLIFE (CONT.)

OBJECTIVE	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
	5.5 Advocate and lobby for mainstreaming of good practices identified to be integrated from the pilot phases into policies, plans and national strategies	No. of best practices to scale		
6. Enhance rural forest communities' women's livelihood opportunities in forest management, particularly non-timber forest products (NTFP)	6.1 Broaden cross-sectoral understanding of women's vulnerability in the context of climate change (e.g. decreased access to NTFP— caterpillars, mushrooms, wild fruits) by documenting lessons learned	No. of materials on lessons learned No. of cross-ministerial meetings	Government institutions (MoG, MLNREP, ICCS, etc.), CSOs, CBOs, FBOs, forest management groups, community resources boards, Local Authorities, media, traditional leaders, IUCN, UN-REDD, The REDD Desk	200,000
	6.2 Identify sustainable livelihood alternatives/ projects for women in forest communities (e.g. enhanced caterpillar farming, beekeeping cooperatives)	No. of projects identified that have impact in livelihood		
	6.3 Advocate for development and expansion of existing climate change pilot projects targeting women's economic empowerment in regards to NTFP	No. of projects funded		

13. PRIORITY SECTOR IV: WATER SECURITY, INCLUDING DRR, PREPAREDNESS AND RESILIENCE²⁴⁷

13.1. Overview: Water security

Water security is one of the world's greatest challenges with a cross-cutting impact on nearly every sector, and climate change threatens to reverse progress made. With global population growth, all natural resources will be further stretched, regardless of climate change, and water is among those resources already scarce and insecure for too many. The World Bank notes that, currently, 1.6 billion people live in countries and regions with absolute water scarcity, and that number is expected to rise to 2.8 billion people by 2025.²⁴⁸

According to UNICEF, in the Eastern and Southern Africa regions, about 157 million people do not have access to clean, safe water, and 247 million people do not have access to improved sanitation systems or facilities.²⁴⁹ Proactively ensuring water security strategies and sound water management is central to climate change and broader sustainable development policies and programmes. The SDGs recognise impacts from climate change and call to “Ensure availability and sustainable management of water and sanitation for all.”²⁵⁰ These development goals are key to reducing the drivers of risk to impacts from the lack of access to water and sanitation resources.

However, the natural response of human beings to the rise in temperature will likely be to increase their demand for potable water, particularly for agriculture and in growing urban environments. This will cause wetlands to be over-exploited, reducing flows in rivers and streams, with additional consequences on ecosystem resources and disasters affecting lives and livelihoods of surrounding communities. It is of utmost importance, especially in that the IPCC has emphasised the grave link between water scarcity and increasing numbers of armed conflict, at both national and international scale.

13.2. Situation analysis

As a landlocked country with diverse ecosystems, Zambia is uniquely vulnerable to the impact of climate change on water security. Effects of drought, floods, water scarcity, and reducing water levels in streams and rivers are being felt due to the country's location in the zone of inter-tropical convergence, and downstream of shared watersheds. According to the World Bank Group, the nexus of climate change and water security is critical.

Zambia is one of very few countries in Sub-Saharan Africa that is water-secure (of the SADC region, Zambia has the highest cubic meters per capita stored at 8970 mm³/capita compared to the regional average of merely 1220 mm³/capita²⁵¹) due to geographical characteristics—the country is home to

²⁴⁷ Originally organised as two separate sectors, Water and Disaster Risk Reduction/Preparedness, ccGAP workshop discussions led to the merging of these sectors, as disasters in Zambia are predominantly water and water security related (droughts and floods). It is worth noting that infrastructure and other sectors are interlinked, as well.

²⁴⁸ World Bank Group. (2013). *Water and climate change*. <http://water.worldbank.org/topics/water-resources-management/water-and-climate-change>

²⁴⁹ UNICEF Eastern and Southern Africa. (2013). *Gender and water, sanitation and hygiene (WASH)*. http://www.unicef.org/esaro/7310_Gender_and_WASH.html

²⁵⁰ UNDP. (2015). *Post-2015 sustainable development agenda*. <http://www.undp.org/content/undp/en/home/mdgoverview/post-2015-development-agenda.html>

²⁵¹ SADC. (2012, August). *Regional infrastructure development master plan: Water sector plan*. http://www.sadc.int/files/6313/5293/3538/Regional_Infrastructure_Development_Master_Plan_Water_Sector_Plan.pdf

major rivers and their tributaries and lakes.²⁵² Although there is large variation of annual rainfall (throughout the country, mean annual rainfall ranges from 1500 mm to 700 mm per year²⁵³) Zambia has no arid regions.²⁵⁴ Climate change is shifting Zambia's water cycle in that even though overall rainfall is anticipated to stay the same, rainfall intensity is expected to increase with longer dry periods between storms projected particularly affecting the semi-arid regions.²⁵⁵ In a review of Sub-Saharan Africa, UNDP notes that by 2020 between 75 million and 250 million people in Africa will be at risk of increased water shortage with a temperature increase of one degree and 350 to 600 million with a two degree increase.²⁵⁶ This variation in rainfall will impact socio-economic development and livelihoods in Zambia largely because Zambia lacks the infrastructure to protect itself from such changes.^{257, 258}

13.2.1. Sanitation and Health

Data from 2015 estimates the Zambian population with access to safe water supplies to be 86% in urban areas and 51% in rural areas.²⁵⁹ For sanitation, the estimated coverage is 44% of the entire population and 56% for urban areas.²⁶⁰ In the peri-urban areas,

where 50-70% of the urban population live, water supply and sanitation services are poor, inadequate, and unreliable; at least 56% of the population do not have access to safe water supply, and as much as 90% do not have access to satisfactory sanitation facilities.²⁶¹ Real coverage is much lower and varies considerably from one place to another due to non-functioning facilities (broken down, abandoned, seasonal), and poor usage, especially with respect to sanitation facilities. Thus, there is still a large underserved population, particularly in rural areas and low-income urban communities with women and girls disproportionately impacted because of their role in collection of water—causing health issues and also because they must spend more time and energy securing access to clean water they are provided less time for pursuing economic and educational ventures.²⁶²

In rural regions, a number of dams and boreholes were constructed and rehabilitated in 2011 and 2012. However, given the proportion of people in rural areas that lacked adequate access to water for production and for domestic use, this achievement was still insignificant to redress the situation. This has also been

252 Ministry of Tourism, Environment & Natural Resources. (2010). *NCCRS*. http://www.undp-alm.org/sites/default/files/downloads/zambia-climate_change_response_strategy.pdf

253 SADC. (2012, August). *Regional infrastructure development master plan: Water sector plan*. http://www.sadc.int/files/6313/5293/3538/Regional_Infrastructure_Development_Master_Plan_Water_Sector_Plan.pdf

254 Ministry of Tourism, Environment & Natural Resources. (2010). *NCCRS*. http://www.undp-alm.org/sites/default/files/downloads/zambia-climate_change_response_strategy.pdf

255 Circle of Blue. (2015). *Zambia electricity shortage highlights Africa's hydropower shortfalls*. <http://www.circleofblue.org/waternews/2015/world/zambia-electricity-shortage-highlights-africas-hydropower-shortfalls/>

256 Ministry of Tourism, Environment & Natural Resources. (2010). *NCCRS*. http://www.undp-alm.org/sites/default/files/downloads/zambia-climate_change_response_strategy.pdf

257 *ibid.*

258 SADC. (2012, August). *Regional infrastructure development master plan: Water sector plan*. http://www.sadc.int/files/6313/5293/3538/Regional_Infrastructure_Development_Master_Plan_Water_Sector_Plan.pdf

259 World Bank. (2015). *Indicators*. <http://data.worldbank.org/indicator>

260 *ibid.*

261 International Monetary Fund. (2007, August). *Zambia: Poverty Reduction Strategy Paper (PRSP)*. <https://www.imf.org/external/pubs/ft/scr/2007/cr07276.pdf>

262 UNICEF Zambia. *Water, sanitation, and hygiene*. http://www.unicef.org/zambia/5109_8460.html

compounded, in rural and urban areas, by the lack of environmental assessment and surveying when bore holes are drilled, either in close proximity or on top of residential septic tanks, latrines, or pits, contaminating the water. Residents have also found with increasing populations and number of bore holes drilled—and as a result of more severe droughts—a reduction in the water table, forcing residents to drill again, or deeper, to access water.^{263, 264} Lack of access to improved drinking water and sanitation facilities leads to the spread of water-borne illness (i.e. diarrhoea, cholera and dysentery), disproportionately impacting women and children responsible for both collecting water and caring for sick community members.²⁶⁵

In communities that lack proper sanitation facilities in schools, this leads to girls being less likely to attend school. According to UNICEF, over a quarter of all basic schools do not have access to a safe water supply and improved sanitation.²⁶⁶ The primary completion rate is lower for girls than for boys, with poor access to sanitation facilities a reported contributing factor.^{267, 268} Government targets indicate that schools should have a ratio of 25 girls per latrine and 40 boys per latrine, but this number is as high as 124 pupils per latrine in some cases, with conditions for hand washing

stations just as stressed. These sanitation conditions can cause girls to miss school on a regular basis, hindering their education compared to their male classmates.²⁶⁹

13.2.2. Agriculture

Agriculture is by far the largest consumer of water within Zambia, with 75% of water use directed toward agriculture, and 15% for domestic and 10% for industrial uses.²⁷⁰ Zambia's agriculture sector relies on both rain-fed agriculture and irrigation systems. Rain-fed agriculture employs up to 85% of the Zambian population.²⁷¹ To improve the sustainability and efficiency of its agricultural sector, Zambia aims to promote efficient water use and irrigation, promote efficient utilisation of wetlands, and promote smallholder pasture irrigation schemes and in-situ rainwater harvesting. These improvements will reduce dependency on rain-fed agriculture, and increase Zambia's capacity to adapt and build resilience to climate change.²⁷²

13.2.3. Hydropower

Sustained economic growth in Zambia has meant that the need for clean and renewable energy is more critical than ever.²⁷³ Zambia has abundant hydroelectric resources—99.9% of produced electricity comes from hydropower.

263 Ministry of Finance. (2014). *Revised sixth national development plan: 2013-2016*. <http://www.slideshare.net/Net-Innovation/revised-sixth-national-development-plan-20132016-zambia>

264 UNICEF Zambia. *Water, sanitation, and hygiene*. http://www.unicef.org/zambia/5109_8460.html

265 *ibid.*

266 *ibid.*

267 *ibid.*

268 World Bank. (2015). *Indicators*. <http://data.worldbank.org/indicator/SE.PRM.CMPT.FE.ZS>

269 UNICEF Zambia. *Water, sanitation, and hygiene*. http://www.unicef.org/zambia/5109_8460.html

270 SADC. (2012, August). *Regional infrastructure development master plan: Water sector plan*. http://www.sadc.int/files/6313/5293/3538/Regional_Infrastructure_Development_Master_Plan_Water_Sector_Plan.pdf

271 Ministry of Tourism, Environment & Natural Resources. (2010). *NCCRS*. http://www.undp-alm.org/sites/default/files/downloads/zambia-climate_change_response_strategy.pdf

272 Ministry of Finance. (2014). *Revised sixth national development plan: 2013-2016*. <http://www.slideshare.net/Net-Innovation/revised-sixth-national-development-plan-20132016-zambia>

273 IHA. *Country profiles: Zambia*. <https://www.hydropower.org/country-profiles/zambia>

However, when considering this statistic, it is important to recognise that only 25% of the population has access to electricity.²⁷⁴ The hydropower potential of the SADC region is approximately 150 GW, of which only 12 GW is installed.²⁷⁵ Within Zambia alone, there is 2,257 MW of installed hydropower capacity as of 2014.²⁷⁶

Hydropower is considered to be a renewable energy that can offset the drivers of climate change—namely the overdependence of the global community on fossil fuels, positioning water as a vital sector not only for adaptation but for potential mitigating action, as well. However, climate change poses a threat to the necessary expansion of hydroelectric production. For example, drought lowers water levels and a reduction in energy production, with an end-user result of temporary power rationing; load shedding has become a daily factor of life in both urban and rural areas of Zambia.²⁷⁷ Water, and thus electricity shortages affect not only households but industry as well, in July 2015, decreased water reserves led to power cuts of 30% to copper mines—an essential driver of Zambia’s economy.^{278, 279}

Within the water sector, Zambia has an objective to achieve sustainable water resource development for social and

economic development via construction of water resources infrastructure, especially dams and canals, for priority projects in farm blocks, irrigation schemes, large multipurpose dams, hydropower production dams, spring and ground water resources development through the Water Resources Infrastructure Development programme.²⁸⁰

Collecting, analysing, and disseminating meteorological data can improve planning for hydropower production, electricity generation, and early warning systems for reducing the risk and preparing for floods and droughts.²⁸¹

13.2.4. Disaster Risk Reduction (DRR)

According to UNDP, the impacts of climate change on Zambia’s water sector can be summarised as either too much or too little rain leading to flooding or droughts, the former being more frequent and more devastating in Zambia.²⁸² An increase in the frequency and severity of both La Niña and ENSO is leading to an increase in flooding and drought in different regions and times of the year. This variability is jeopardising livelihoods through the sectors discussed above but also need to be tackled through the lens of adaptation to reduce the risk of disasters. DRR is discussed independently at length, in the following section.

274 Ministry of Tourism, Environment & Natural Resources. (2010). *NCCRS*. http://www.undp-alm.org/sites/default/files/downloads/zambia-climate_change_response_strategy.pdf

275 SADC. (2012, August). *Regional infrastructure development master plan: Water sector plan*. http://www.sadc.int/files/6313/5293/3538/Regional_Infrastructure_Development_Master_Plan_Water_Sector_Plan.pdf

276 IHA. *Country profiles: Zambia*. <https://www.hydropower.org/country-profiles/zambia>

277 *ibid.*

278 Circle of Blue. (2015). *Zambia electricity shortage highlights Africa’s hydropower shortfalls*. <http://www.circleofblue.org/waternews/2015/world/zambia-electricity-shortage-highlights-africas-hydropower-shortfalls/>

279 *ibid.*

280 Ministry of Finance. (2014). *Revised sixth national development plan: 2013-2016*. <http://www.slideshare.net/Net-Innovation/revised-sixth-national-development-plan-20132016-zambia>

281 Zambia Meteorological Department. http://www.mtwsc.gov.zm/?option=com_content&view=article&id=118&Itemid=1021

282 Ministry of Tourism, Environment & Natural Resources. (2010). *NCCRS*. http://www.undp-alm.org/sites/default/files/downloads/zambia-climate_change_response_strategy.pdf

Most of Zambia is within the Zambezi River Basin (northern areas are in the Congo River Basin). The Zambezi River Basin has a history of floods and droughts with and without dams. Dams impound floods and modify downstream flows and the Lake Environment, as well as communities dependent on the riverine and lake ecosystem resources. However, properly releasing and managing dam projects is essential to minimise upstream and downstream impacts of floods and droughts.²⁸³

13.3. Gender and the Water Sector

In most parts of the world, domestic and public gendered roles dictate women and girls as responsible for collecting water for cooking, cleaning, health, hygiene, and—if they have access to land—growing food.²⁸⁴ This leads to women being disproportionately and adversely impacted by water accessibility, system design and management, and the high costs of water distribution.²⁸⁵ While often not considered to be ‘work’, women and girls spend a disproportionate amount of time on such resource management tasks and unpaid care work that it is necessary to sustain their families but also local economies, development, and infrastructure.²⁸⁶

Women are often under-represented in decision-making processes, even though they can make important contributions to these discussions due to the knowledge of ecological and water-related conditions gained as a factor of their societal roles of natural resource managers.²⁸⁷ Within water management policies, women are often cast as the role of victim instead of influential stakeholders and agents of change.^{288, 289}

Gender-specific divisions of labour and responsibility in water resource access and management at community level tend to fall along traditional lines across Sub-Saharan Africa, and Zambia is no exception. In both urban and rural areas, women are responsible for water collection and educating children about hygiene. Queuing at urban water sources or fetching water at far distance in more remote areas takes up a significant portion of women’s days—according to UNICEF, Zambia is one of several countries in the region where collecting water takes longer than 30 minutes per day for more than a quarter of the population. This considerably reduces “the time women and girls have available for other activities such as childcare, income generation and school attendance.”²⁹⁰ This, among other issues, has

283 SADC. (2012, August). *Regional infrastructure development master plan: Water sector plan*. http://www.sadc.int/files/6313/5293/3538/Regional_Infrastructure_Development_Master_Plan_Water_Sector_Plan.pdf

284 Aguilar, L., Granat, M., & Owren, C. (2015). *Roots for the future: The landscape and way forward on gender and climate change*. Washington, DC: IUCN & GGCA.

285 Haule, L. (2012). *Training of facilitation team on water resources management: Module 1- Participatory planning, stakeholder participation and gender mainstreaming an integrated water resources management*. IUCN and Natural Resources and Pangani Basin Water Board.

286 Figueiredo, P., & Perkins, P. E. (2013). Women and water management in times of climate change: Participatory and inclusive processes. *Journal of Cleaner Production*, 60, 188-194.

287 *ibid.*

288 Sorenson, S. B., Morssink, C., & Campos, P. A. (2011). Safe access to safe water in low income countries: Water fetching in current times. *Social Science & Medicine*, 72, 1522-1526.

289 Aguilar, L., Granat, M., & Owren, C. (2015). *Roots for the future: The landscape and way forward on gender and climate change*. Washington, DC: IUCN & GGCA.

290 UNICEF Eastern and Southern Africa. http://www.unicef.org/esaro/7310_Gender_and_WASH.html

cross-cutting implications for development goals and poverty eradication.

Men, on the other hand, often are responsible for infrastructure and maintenance; of particular importance is the drilling of bore holes. Men's income vulnerability was also cited in ccGAP workshops as a major concern, especially in the mining sector: when water levels are low, leading to reduced hydropower production, mining companies fire workers or furlough them until production picks up, with ripple effect across mining families and communities. The impacts of climate change on water security, therefore, have effects on both women and men.

13.4. Water security policy and programme interventions

In its Revised Sixth National Development Plan for 2013-2016 Zambia addresses the environmental, social and economic impact that climate change will bring to water throughout sectors. Water and Sanitation is a key component of all aspects of sustainable development. All sectors require access to adequate water and sanitation services for their development. There are two key aspects of the water sector: Water Resources Management and Development (WRMD) and Water Supply and Sanitation. In Zambia, WRMD is implemented through established river catchment structures. Water supply and sanitation in the urban areas is implemented through established commercial utilities whilst in rural areas it is implemented through local authorities.²⁹¹

The main water sector goal of this development plan is to increase access to reliable and safe water and adequate sanitation for urban and rural population by 2016 in order to improve the quality of life. The Sector will improve sustainable and equitable access to safe water supply in both urban and rural areas by enhancing the status of infrastructure and water distribution. The goal of this intervention is to increase the percentage of the population accessing safe water by the year 2016 to 88% and 60% in urban and rural areas from 83.6% and 49.2% in 2010, respectively. This plan also developed goals to increase access to improved sanitation facilities for both urban and rural populations.²⁹²

At national level, the water and sanitation sector will review the policy, legal and regulatory framework in order to streamline and harmonise functions and provide for efficient and effective management of the sector. A comprehensive legal and institutional framework will be developed to operationalise the Integrated Water Resources Management strategies for sustainable water development. The Integrated Water Resources Management and Water Efficiency 2007-2030 plan incorporates the integrated water resources development and management principle of utilising a participatory approach through involving different water users, including gender groups, socioeconomic groups, planners and policymakers in water management.²⁹³

The sector will also develop the National Water Supply and Sanitation Policy, which will include principles of mainstreaming climate change

²⁹¹ Ministry of Finance. (2014). *Revised sixth national development plan: 2013-2016*. <http://www.slideshare.net/Net-Innovation/revised-sixth-national-development-plan-20132016-zambia>

²⁹² *ibid.*

²⁹³ Ministry of Tourism, Environment & Natural Resources. (2010). *NCCRS*. http://www.undp-alm.org/sites/default/files/downloads/zambia-climate_change_response_strategy.pdf

adaptation and mitigation aimed at protecting water and sanitation infrastructure against damages and safeguarding communities against flooding, disease outbreaks and water scarcity during events of heavy precipitation and droughts. Further, coordination among stakeholders will be strengthened to enhance coherence and effectiveness in the implementation of water development, supply and sanitation programmes.²⁹⁴

Once implemented as planned, the Sector will contribute to the provision of sustainable and equitable access to safe water supply and adequate sanitation through infrastructure development in a well-coordinated manner. Focus will be to make effective use of water in improving human development situation and in economic activities particularly in promoting agricultural production and diversification.²⁹⁵

At international level, the SADC water sector is guided by a number of international declarations that have greatly influenced the development of the SADC water sector regulatory and legal framework, including the following: the Copenhagen Declaration, the Dublin Principles, Agenda 21 of the UN Conference on Environment and Development, the UN Convention on the Law of Non-navigational Uses of International Watercourses, the Millennium Development Goals, and the SADC Regional Cooperation.²⁹⁶ At regional level, the SADC held a Water Sector Investor Conference aimed at marketing

projects that are geared towards improving resilience of citizens in the SADC region against water related disasters that occur mainly due to the changing climate.²⁹⁷

13.5. Overview: Disaster risk reduction, preparedness and resilience

Naturally occurring hazards by themselves do not cause disasters—it is the combination of an exposed, vulnerable and ill-prepared population or community that encounters a hazardous event that results in a disaster. Climate change adaptation measures and DRR practices are necessarily interlinked concepts as 91% of recorded major disasters caused by natural hazards from 1994 to 2013 were linked to climate and weather.²⁹⁸ Climate change is, and will continue, increasing the frequency and severity of natural hazards, and through a variety of other impacts affect the environmental, social and economic vulnerability, and capacity of women and men to respond and adapt.

There is already evidence of increasing weather-related disasters. Among them, as the IPCC Fourth Assessment Report noted, more intense and longer droughts have been observed over wider areas since the 1970s. Due to these and related trends, some parts of Africa may experience as much as a 50% reduction in agricultural yields by 2020. Therefore, adaptation policies should consider lessons learned from DRR strategies, and DRR

²⁹⁴ Ministry of Finance. (2014). *Revised sixth national development plan: 2013-2016*. <http://www.slideshare.net/Net-Innovation/revised-sixth-national-development-plan-20132016-zambia>

²⁹⁵ *ibid.*

²⁹⁶ SADC. (2012, August). *Regional infrastructure development master plan: Water sector plan*. http://www.sadc.int/files/6313/5293/3538/Regional_Infrastructure_Development_Master_Plan_Water_Sector_Plan.pdf

²⁹⁷ *ibid.*

²⁹⁸ UNISDR. Climate change adaptation. <http://www.unisdr.org/we/advocate/climate-change>

strategies must consider the impacts of climate change as they are increasingly linked.²⁹⁹

13.6. Situation analysis

Zambia is already feeling the effect of climate change with increasing rates and severity of floods and, in other parts of the country, crippling and extended drought periods. Between 1991 and 2008, four periods of drought and two floods caused a drastic reduction in agricultural production, leaving hunger and poverty in their wake—with each affecting at least a million people. This is critically important as disasters are being compounded by climate change, and the probabilistic risk of a single flood in the future is estimated to cause an absolute loss of US\$ 25.96 million to the Zambian economy.

Farming communities in the south, southwest and east of Zambia have been and will continue to be the most affected by disasters because of their dependence on rain-fed agriculture. These communities have neither the capacity nor the reserves to take large-scale measures, such as reforestation, the building of water storage facilities and the cultivation of drought-resistant crops—so disaster preparedness is a crucial aspect for survival.

Zambia's National Report on the Implementation of the Hyogo Framework for Disaster Risk Reduction (2009-2011) identified disseminating relevant disaster and weather information as an area requiring improvement due to the issue that Zambia had met zero of the three key means of verification for this goal. A national disaster information system was

not publicly available, no web page of national disaster information system existed, and there was no established mechanism for accessing DRR information.³⁰⁰

Accurate meteorological data can assist governments and communities in reducing risk of disasters by providing accurate weather and early warning information. When considering infrastructure damage potentially caused by natural disasters, meteorological data can assist city planners and engineers in developing infrastructure that can withstand the projected climatic circumstances.

Zambia Meteorological Department (ZMD), a department of the MCT was founded with a mandate to provide weather information to the aviation industry. In recent years, it has seen its mandate expand with additional responsibilities/tasks such as climate change assessments, early warning information provision, insurance risk assessments and crop yield predictions. However, the historical role in aviation, and the fact that the aviation sector still has the most evident link to the importance of up-to-date weather information, has left an impression on how ZMD gathers and disseminates data. Most monitoring stations were originally placed near airports and have only recently been expanded to other areas with the goal of providing information for agriculture, health, and disaster risk reduction sectors.

ZMD works in every province and connects human and technological resources to enhance data collection, analysis, and dissemination. One aspect of the role of ZMD is to process

299 Venton, P. & La Trobe, S. (2008, July). *Linking climate change adaptation and disaster risk reduction*. Retrieved from http://www.preventionweb.net/files/3007_CCAandDRRweb.pdf

300 *Zambia national progress report on the implementation of the Hyogo Framework for Action (2009-2011)*. http://www.preventionweb.net/files/16080_zmb_NationalHFAprogress_2009-11.pdf

meteorological data for use in planning economic development and rational exploitation of natural resources. Therefore, Zambia's successful sustainable development relies in part on this study of meteorological data. The impacts of climate change even increase the necessity of data collection in order to produce models of future meteorological conditions—clearly important for long-term planning.

An informed, involved, and prepared citizenry is an essential aspect in reducing the risk of disaster. The RANET Project, a project of ZMD, assists in this regard by providing rainfall gauges to rural communities and using mobile phones and community radio to share information in a timely manner.³⁰¹ Rural communities can be the most difficult to reach for both gathering and sharing data; yet, rural communities are most vulnerable to the weather effects of climate change in planning their agricultural livelihoods and in reducing the loss of infrastructure and lives during extreme weather events.³⁰² The RANET project is attempting to improve communication capabilities in rural areas through mobile phone projects, a satellite-based system for sending short messages, and in the establishment of local radio stations through which weather information can be disseminated in the local language of the community.³⁰³

ZMD's role in collecting, analysing, and disseminating meteorological data is also

essential for the agriculture and water sectors, which (as have been discussed) are both at-risk to climate change. Every year before the rainy season, the ZMD produces a Seasonal Rainfall Forecast, supplemented by the Crop-Weather Bulletin issued every ten days. These services assist farmers in determining when to plant crops and when to anticipate dry spells.³⁰⁴ This helps farmers to manage water resources by more accurately predicting required irrigation. In some cases, farmers may even decide to plant different crops, or to plant at different times, relying on accurate meteorological data. A 2016 article published by the Thomson Reuters Foundation found that when planning around the changing climatic conditions, some farmers are choosing to plant less maize (which requires 60 to 90 days to mature), instead focusing on faster-growing crops such as beans, expanding to include livestock, and—for those who can—investing in better harvesting technology.³⁰⁵ As the rainy season becomes less reliable (the current dry spell is due to El Niño conditions),³⁰⁶ more hardy crops are required to provide food to communities and livelihoods to farmers. The Minister of Agriculture, Given Lubinda, has gone so far as to say, "It is becoming unsustainable to grow maize because of the changing weather patterns. I am afraid if we don't change our farming methods, especially the growing of maize, we will end up as a hungry country."³⁰⁷

Within the water and sanitation sector, Zambia aims to strengthen capacity for disaster risk

301 WRI. *The RANET project: Climate information collection in Zambia*. <http://www.wri.org/our-work/project/world-resources-report/ranet-project-climate-information-collection-zambia>

302 *ibid.*

303 *ibid.*

304 Zambia Meteorological Department. http://www.mtwsc.gov.zm/?option=com_content&view=article&id=118&Itemid=1021

305 Sustainability. *El Niño pushes Zambian farmers to question maize habits*. <http://sustainability.thomsonreuters.com/2016/01/14/el-nino-pushes-zambian-farmers-to-question-maize-habit/>

306 *ibid.*

307 *ibid.*

management, mitigation and adaptation by developing pilot projects for improvement of water conservation infrastructure (specifically to reduce flooding) against climate variability, to implement climate change adaptation projects countrywide, and to enhance the capacity of the disaster risk management sector. The ZMD also plays a role in water resources management to assist in water sector development such as drainage and storm water disposal systems.³⁰⁸ As climate changes leading to more intense rain events and longer periods between rainy seasons, many of these systems will need to be updated to manage and prevent disasters such as flash floods.

13.7. Gender in DRR

The field of DRR was the first area of adaptation to focus on identifying risk and developing methodologies that recognised the linkages with development, socioeconomic factors, and human rights-based issues of equality.³⁰⁹ In the last decades, there have been important efforts made toward including a gender perspective within DRR strategies. Methods aid in understanding how ‘gender’, as a socially constructed category that varies by place and time, can reveal differential risks and types of impacts that people will face from threats caused by hazards and climate change. These analyses assist in identifying the vulnerabilities and capacities that will need to be addressed in climate adaptation.³¹⁰

Countless studies have revealed the gender dynamics of preparedness, periods of disaster, and post-disaster situations; worldwide, women tend to suffer more from the impacts and fatalities caused by disaster compared with men. Girls and boys are 14 times more likely than men to die during a disaster, for example and, reflecting cultural behaviour patterns.³¹¹

Post-disaster, gendered divisions of labour, roles and responsibilities, vulnerabilities and capacities dramatically shape a country’s ability to cope and return ‘to normal’; a transformative approach to DRR aims for an equal or better quality of life for communities, but few developing countries are in a position to mitigate severe loss.

Approaches to addressing issues related to loss and damage arising from the adverse effects of climate change mainly focus around the management of sudden onset events. Limited efforts are being made with regard to slow-onset climate change hazards, with little to no gender related knowledge and information regarding the impacts of such hazards. There is an urgent need to identify effective approaches to manage slow-onset hazards as they are expected to cause potentially the greatest loss and damage.³¹² While there is a need to expand existing international legal frameworks dealing with issues of human displacement and migration as a result of slow-onset events, it is crucial that these frameworks specifically include issues related to gender.

308 Zambia Meteorological Department. http://www.mtwsc.gov.zm/?option=com_content&view=article&id=118&Itemid=1021

309 Aguilar, L., Granat, M., & Owren, C. (2015). *Roots for the future: The landscape and way forward on gender and climate change*. Washington, DC: IUCN & GGCA.

310 *ibid.*

311 IUCN. (2009). *Disaster and Gender Statistics*. San Jose, Costa Rica: IUCN.

312 IUCN. (2013, November). *Loss and damage: An IUCN discussion paper for UNFCCC COP19*. https://cmsdata.iucn.org/downloads/iucn_loss_and_damage_discussion_paper_unfccc_cop19.pdf

13.8 DRR policy and programme interventions

Sixth National Development Plan (SNDP)

In the Revised SNDP 2013-2016, a DRR goal is developed with the objective of assisting incapacitated households in the event of a disaster. The strategy is to provide discrete transfers in response to natural disasters or shocks to people at risk of rapid deterioration in economic and social wellbeing and security. The Office of the Vice President holds this responsibility, as well as the responsibility for all resettlement services and disaster mitigation.

Additionally, governance, HIV and AIDS, Gender, Nutrition, Disability, Environment and Disaster Risk Management are all included in the SNDP to be mainstreamed in all the sector specific Implementation Plans to the extent that programme/project deliverables will reflect these cross cutting issues. Sectors will therefore be required to mainstream these cross cutting issues in their key output indicators and reflect them in their Implementation Plans and ensure that they are part and parcel of the Monitoring and Evaluation mechanisms. These essential cross cutting issues will assist in the implementation of the Plan in an integrated manner so as to achieve the desired sustainable inclusive growth.³¹³

National Disaster Management Policy (NDMP)

The National Disaster Management Policy (NDMP) was established in 2005 and has been in effect ever since. Most recently, this Policy was revised for the period 2015-2020.³¹⁴

Some key factors necessitated this revision: changes in national level DRR strategy due to the National Disaster Management Act of 2010, the paradigm shift from disaster management to disaster reduction, climate change, and the national guideline that such policies should be reviewed every five years. The NDMP addresses common hazards faced in Zambia, including floods, droughts, epidemics, environmental degradation, human/animal conflicts, food insecurity, animal and plant diseases and pests, and road and water accidents. The original 2005 Policy considered some international conventions, UN resolutions, African charters, and SADC strategies. The updated Policy considers UNCCD, International Decade for Natural Disaster Reduction, UN International Strategy for Disaster Reduction (UNISDR), Hyogo Framework for Action, UNFCCC, UN Convention on Disaster Reduction, MDGs, World Summit on Sustainable Development, SADC Disaster Management Strategy, and the AU Kampala Convention on Internally-Displaced People. Implementation of the Policy is conducted by the National Disaster Management Council, chaired by the Vice-President and vice-chaired by Minister of Defence, with other members appointed by the President. This council included multiple committees such as a technical committee and a provincial committee. There is also an organised structure for volunteers, as a key guiding principle of the updated Policy is that every citizen of Zambia is responsible for DRR.³¹⁵

The Policy includes some gender considerations, specifically the recognition that disaster effects are selective, affecting mostly

³¹³ Ministry of Finance. (2014). *Revised sixth national development plan: 2013-2016*. <http://www.slideshare.net/Net-Innovation/revised-sixth-national-development-plan-20132016-zambia>

³¹⁴ Republic of Zambia, Office of the Vice-President. (2015). *National disaster management policy*. http://www.preventionweb.net/files/47475_zambiadmppolicy2015.pdf

³¹⁵ *ibid.*

women, children, the physically challenged and the elderly, and the necessity for mainstreaming of gender issues and planning in assessments of different vulnerabilities and needs of men and women to ensure that disaster response is equitable in the affected areas.³¹⁶

As noted, aspects of the Disaster Management Act of 2010³¹⁷ brought on some of the updates to the Policy. This Act expanded the original 2005 Policy in a few key areas: the Act sets conditions under which a disaster or emergency can be declared, by whom, and at what level; gives legal authority to the National Disaster Management regime to mobilise resources; provides legal provisions for disaster preparedness plans; establishes the maintenance and operations of the Management System; states that disaster management is the responsibility of all; and obliges the Government to protect its citizens from disasters.³¹⁸ The Act also outlines for each village or cluster of villages the Disaster Management Coordinator shall ensure “a permanently established Satellite Disaster Management Committee elected by the local community in the area...and that the Satellite Committee shall comprise of not more than 10 part-time members with specific provisions for “two women and two men from local communities.”³¹⁹

The Hyogo Framework for Action and Zambia's revised National Disaster Management Policy display an international and national shift from reactive disaster management to proactive disaster reduction.³²⁰ A proactive approach can best protect Zambia with respect to some of its major causes of vulnerability, including traditional customs and norms, poor farming practices, environmental degradation, lack of access to resources, lack of social safety nets, lack of information on disaster risk, weak infrastructure, and limited food diversity.³²¹

Hyogo Framework for Action on Disaster Risk Reduction

Zambia is actively involved in pursuing the goals of the Hyogo Framework for Action and has made progress with the National Report for 2009-2011 highlighting some of the key outcomes and strategies for moving forward from 2007-2009.³²² The National Report on the Hyogo Framework for Action (2009-2011) report also includes a few key references to gender, both in areas where Zambia has not yet reached the goals described and areas in which Zambia has so far been successful.³²³ For instance, part of determining the success of a functioning national multi-sectoral platform for DRR is to involve women's organisations, but as of this National Report, zero women's organisations were included. In addition gender

316 Republic of Zambia, Office of the Vice-President. (2015). *National disaster management policy*. http://www.preventionweb.net/files/47475_zambiadmpolicy2015.pdf

317 *The disaster management act, 2010*. <http://www.ifrc.org/docs/idrl/785EN.pdf>

318 Office of the Vice-President. (2010). *Highlights of the disaster management act*. http://www.preventionweb.net/files/15772_disastermanagementact.pdf

319 *The disaster management act, 2010*. <http://www.ifrc.org/docs/idrl/785EN.pdf>

320 Republic of Zambia, Office of the Vice-President. (2015). *National disaster management policy*. http://www.preventionweb.net/files/47475_zambiadmpolicy2015.pdf

321 *ibid.*

322 *Zambia national progress report on the implementation of the Hyogo Framework for Action (2009-2011)*. http://www.preventionweb.net/files/16080_zmb_NationalHFAprogress_2009-11.pdf

323 *ibid.*

disaggregated data had yet to be gathered even though it is a main goal of local and national risk assessments based on hazard data. Also, post disaster needs assessment methodologies do not currently include guidance on gender aspects, but that is a goal. One of the main entry points for gender within DRR, involving women in early warning systems, was not even mentioned as a goal for Zambia's DRR strategy within this report. On a positive note, DRR measures, including those taken to address gender-based issues in recovery, are integrated into post-disaster recovery and rehabilitation processes and disaster preparedness and contingency plans include "gender sensitivities".³²⁴

Zambia's capacity building plan includes strengthening planning and development initiatives to reduce risk, prepare and recover from disasters including strengthening institutions in charge of DRR, i.e. the Disaster Mitigation and Management Unit (DMMU) in the Vice-President's Office.³²⁵ DRR focal points already exist in various line ministries and could be used to mainstream climate change. DMMU have an Information Management platform (ZEPRIS) that could be utilised for the management of climate related data. The ZEPRIS houses information across numerous sectors that Environmental ministries can tap into, for example, it already possesses links with the ZMD. DMMU has a well-established and clear coordination structure at national, provincial, and district level that can be utilised to mainstream climate change.³²⁶

SADC Regional Infrastructure Development Master Plan (RIDMP)

The SADC Regional Infrastructure Development Master Plan (RIDMP) from 2012 discusses key areas requiring policies and programmes to assist the region in reaching toward sustainable development. SADC suffers from a lack of meteorological infrastructure, posing a threat to the regions planning process with respect to climate change. Improving this infrastructure is essential to DRR because from 1980 to 2007, over 90% of disasters in this region were related to natural hazards. Therefore, SADC must improve its capability to collect, analyse, and disseminate meteorological information in terms of accuracy, timeliness, location specificity, and user-friendliness. SADC's Regional Infrastructure Development Master Plan from 2012 identified a handful of projects that would assist the region in meeting these goals, with an estimated implementing cost of about US\$ 125 million.³²⁷

Similar infrastructural issues exist in the water sector in the SADC region, as addressed by the RIDMP. Key issues are that the region retains only a very small percentage of available renewable water resources, and access to water resources is not equal throughout the region. The lack of infrastructure to provide water resources to the entire population of the region is a concern that will require cooperation and joint planning to manage and develop such infrastructure.³²⁸ Projects and programmes designed to address this concern focus on increasing renewable water storage, the area

323 *ibid.*

324 *Zambia national progress report on the implementation of the Hyogo Framework for Action (2009-2011)*. http://www.preventionweb.net/files/16080_zmb_NationalHFAprogress_2009-11.pdf

325 Ministry of Tourism, Environment & Natural Resources. (2010). *NCCRS*. http://www.undp-alm.org/sites/default/files/downloads/zambia-climate_change_response_strategy.pdf

326 *ibid.*

327 SADC. (2012, August). *Regional infrastructure development master plan: Executive summary*. http://www.sadc.int/files/7513/5293/3530/Regional_Infrastructure_Development_Master_Plan_Executive_Summary.pdf

328 *ibid.*

under irrigation, hydropower generation, and access to water supply and sanitation services for a greater proportion of the population.³²⁹ The water chapter of the RIDMP outlines 34 priority projects (Phase 1) with an estimated cost of US\$ 16 billion from 2013 to 2021.³³⁰ Upon completion of these projects, Zambia will be slightly closer to reaching its 2027 targets for surface water storage, agriculture, hydropower, water supply, and sanitation, but there will still be a long way to go before these targets can actually be met. The next batch of projects to be decided upon (Phase 2) will likely cost US\$ 104 billion and to finally reach the 2027 targets, Phase 3 will likely cost US\$ 80 billion.

National Climate Change Response Strategy (NCCRS)

DRR is included in the NCCRS recognising the importance of promoting financial and technical support to units concerned with disaster mitigation and management, with a focus on infrastructure development in flood-prone areas. It also mentions improving the application of traditional and indigenous knowledge to reduce disaster impact—however, there is no reference specifically to women’s role, or their disadvantages for coping with disasters.

329 *ibid.*

330 *ibid.*

ACTION PLAN: WATER SECURITY, INCLUDING DRR, PREPAREDNESS AND RESILIENCE

OUTCOME: The water security of all Zambians is promoted and protected, including via gender-responsive and climate-smart water infrastructure and disaster risk reduction, management and resilience

WATER SECURITY

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
1. Improve existing and new water infrastructure in urban, peri-urban and rural communities addressing the needs of women	1.1 Build capacity for women in technical aspects of water infrastructure (plumbing, service providers)	No. of women trained in technical water aspects Increase in income for women	MoG, National Economic Advisory Council (NEAC), local government, Ministry of Chiefs and Traditional Affairs, MEWD, NGOs, donor partners, local & international consultants from NEAC, donor agencies, cultural leaders, related community level user groups	100,000
	1.2 Popularise the portable water quality test kits	No. of test kits deployed		
	1.3 Train more women to use portable water quality test kits	No. of households with improved/safe drinking water		
	1.4 Identify women's organisations and other organisations that support women's needs, and beneficiaries of outputs of these actions	No. of women working as service providers		

ACTION PLAN: WATER SECURITY, INCLUDING DRR, PREPAREDNESS AND RESILIENCE (CONT.)

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
2. Ensure active participation of women in the planning phases, design and construction of climate change-compliant water infrastructure	2.1 Hold consultative meetings at every stage of planning, design, implementation at all levels (district, provincial, national)	Increased numbers of women in planning and project management committees	Community groups	100,000
	2.2 Promote women's participation and representation on planning committees at district, provincial and national level to meet policy targets	No. of women on planning committees at district, provincial and national level		
3. Expand women's participation, particularly in rural areas, with hydro-meteorological stations and weather data collection	3.1 Install hydro-meteorological stations in provinces, and at communities	No. of new stations installed in rural/urban areas	-	200,000
	3.2 Train women on hydro-meteorological stations and collection of weather data	No. of women trained on data collection		

ACTION PLAN: WATER SECURITY, INCLUDING DRR, PREPAREDNESS AND RESILIENCE (CONT.)

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
4. Increase awareness of linkages between water, climate change and gender to break stereotypes related to water use due to gender and cultural beliefs	4.1 Conduct research and targeted recommendations on traditional knowledge, attitudes and practices in respect to water management	Research outcomes Targeted recommendations	MoG, MEWD, NEAC, ZMD, Dept. of Water Affairs, National Inst. for Scientific and Industrial Research (NISIR), Ministry of Chiefs and Traditional Affairs, private sector, including businesses	2,000,000
	4.2 Carry out community outreach programmes to sensitise men and women toward more sustainable management practices	No. of communities engaged		
	4.3 Provide technical and programme based training to local media and local structures e.g. information kiosks, women's groups, markets in local languages to promote creation of equitable access to and use of water	No. of trainings conducted No. of media members trained No. of, and type of materials created in local languages		
	4.4 Mobilise cultural and community leaders to help break stereotypes through deliberate public actions	No. of cultural/ community leaders trained Improved status of women in communities		

ACTION PLAN: WATER SECURITY, INCLUDING DRR, PREPAREDNESS AND RESILIENCE (CONT.)

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
5. Develop and make available a disaggregated database on vulnerability regarding water-related disasters, (e.g. droughts, disease, landslides, floods)	5.1 Conduct a country-wide survey to identify patterns of vulnerability	Nation-wide survey	MoG, MEWD, NEAC, ZMD, Dept. of Water Affairs, NISIR	100,000
	5.2 Using existing groups/ networks/ resources, establish a network of data collectors	No. of grassroots networks/ groups engaged		
	5.3 Train network in common methodology	Data collection methodology		
		Availability of information		
	5.4 Creation of information repositories and resource centres at community, district, provincial and national levels, and in major Zambian languages	Increase in the number of EIA including quality gender disaggregated data an linked with district level database		

ACTION PLAN: WATER SECURITY, INCLUDING DRR, PREPAREDNESS AND RESILIENCE (CONT.)

DISASTER RISK REDUCTION, PREPAREDNESS AND RESILIENCE

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
1. Build capacity of Meteorological Department and Disaster Management Unit on gender to enhance strategies, plans and data collections	1.1. Organise orientation meetings with departments and units responsible for meteorological data collection and dissemination and disaster preparedness and management	No. of orientation meetings/trainings	MoG, Department of Water Resources Development, Water Resources Management Authority (WRMA), DMMU, Ministry of Agriculture, CSOs, ZMD, Ministry of Chiefs and Traditional Affairs, media, women's organisations and networks	250,000
	1.2. Support the collection and dissemination of sex-disaggregated data	Sex disaggregated data		
2. Enhance meteorological information collection and dissemination, especially empowering women and women's organisations	2.1. Identify women and women's groups to become meteorological support network	No. of women acting as meteorological data collectors	MoG, Department of Water Resources Development, WRMA, DMMU, Ministry of Agriculture, CSOs, Meteorological Department, Ministry of Chiefs and Traditional Affairs, media, women's organisations and network	350,000
	2.2. Train women in collection and dissemination of meteorological information	No. of women with access to technologies (e.g. cell phones) distributed		
	2.3. Secure and distribute technology			

ACTION PLAN: WATER SECURITY, INCLUDING DRR, PREPAREDNESS AND RESILIENCE (CONT.)

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
3. Increase information to and awareness of communities on gender, climate change, disasters, and disaster risk reduction and resilience (DRRR)	3.1. Develop awareness raising tools and communications (including in at least 7 local languages) for communities on gender, climate change, and DRR	No. of tools/ communications in local languages	MoG, Department of Water Resources Development, WRMA, DMMU, Ministry of Agriculture, CSOs, Meteorological Department,	500,000
	3.2. Identify women and women's organisations/ networks (including especially from above) and build their capacity on gender, climate change, DRR	No. of women engaged on gender, climate change, and DRR Reduction in mortality rate associated with disasters	Ministry of Chiefs and Traditional Affairs, media, women's organisations and networks	
4. Increase media awareness and attention to gender, climate change, disasters and DRRR	4.1. Organise orientation sessions for journalists on gender, climate change, disasters and DRRR	No. of articles/ news stories	MoG, Department of Water Resources Development, WRMA, DMMU, Ministry of Agriculture, CSOs, ZMD, Ministry of Chiefs and Traditional Affairs	100,000
	4.2. Create media networks/ database of journalists covering the above			

14. PRIORITY SECTOR V: INFRASTRUCTURE

14.1. Overview

From water management to transmission lines, infrastructure is intricately connected to every

day life and how humans interact with each other. Infrastructure, especially aging and out-of-date infrastructure, is particularly vulnerable to the extreme weather events and shocks associated with climate change. Large-scale and imbedded infrastructure, such as bridges and buildings, are impossible to move to accommodate for rising sea levels and natural

disasters can shut down transportation and communication systems or leave vulnerable areas without power and access to vital resources. Updating infrastructure is a major financial burden on countries and the initial cost of many systems can seem daunting. However, the opportunity to implement adaptive and sustainable physical infrastructure is huge for countries that are rapidly expanding and constructing new communication, water, waste, transportation, and energy infrastructure. Additionally, developing social infrastructure, such as preparing the work force to contribute to the green construction job market through trainings and education on new and sustainable technologies, is vital to developing skills and future sustainable infrastructure. Through green building efforts, energy efficient projects, and accessible transportation systems, infrastructure is an important tool in mitigating and adapting to climate change impacts.

Climate change impacts, such as flooding and droughts, are already threatening vital infrastructure in Zambia necessitating more climate resilient and sustainable infrastructure ventures—including the planning and finances to support this. Some climate change adaptive measures that can be taken include revising building codes, enhancing road and bridge designs to deal with climatic conditions, and implementing a disaster relief fund to address damage to infrastructures. Infrastructure can also support mitigation of climate change by reducing concrete production, building energy efficient infrastructure, and utilising green construction technology, which will require

education and skills training, all of which will prepare women and men for changing climatic, social, and economic situations.

14.2. Situation analysis

Sustainable development is a central tenant to Zambia's Vision 2030 goal of becoming a "prosperous middle-income nation by 2030."³³¹ Funding infrastructure expansion and upkeep helps to increase annual GDP, expand household electrification, and improve access to transportation, among other benefits. According to one report, if Zambia's infrastructure platform could be improved to be like Mauritius' platform, per capita growth rates could increase by 2 percentage points per year.³³²

In Zambia there is a large spending gap on physical infrastructure between what needs to be spent and what is currently being spent. Physical infrastructure in Zambia is largely dependent on public funding, about two-thirds of total spending on infrastructure expansion and upkeep comes from Zambian taxpayers and utility service users.³³³

Because copper makes up a majority of the export market in Zambia, it contributes heavily to government revenue. When copper prices are high, such as in the 1970s, public-funded development increases. However, in recent years, the volatile price of copper has led to stripped government spending and a privatisation of the copper industry, plunging Zambia into a debt crisis. Zambia is now considered one of the poorest countries in the

331 Government of the Republic of Zambia. (2006). *Vision 2030: A prosperous middle-income nation by 2030*. <http://unpan1.un.org/intradoc/groups/public/documents/cpsi/unpan040333.pdf>

332 Foster, V. & Dominguez C. (2010). *Zambia's infrastructure: A continental perspective*. Washington, DC: World Bank.

333 *ibid.*

world and its physical infrastructure is sparse and unreliable in many areas.³³⁴ This has led to a rapid decline in government funding on infrastructure, which has resulted in the dilapidation of physical infrastructure and deteriorating social services.

As Zambia goes through major economic, demographic, and environmental shifts, there is a need to address social infrastructure and how the country's population is being prepared to benefit from its growth. So far, economic growth and benefits have not been equitable and inclusive of Zambia's population. Unemployment is a huge issue in Zambia, especially among youth. This is because of the economic growth in mechanised sectors, such as mining, and under-investment and limited growth in job-rich sectors, such as agriculture, tourism, and construction.³³⁵ Developing human capital and education is important in addressing current and future issues.

With a rapidly changing economic, technological, political, and environmental atmosphere, there is a desire to diversify Zambia's economy to cope with stresses and fluctuations in the copper market. This represents an opportunity to close the spending gap in infrastructure development and aid Zambia in reducing widespread poverty.

14.3. Gender and infrastructure

Men and women have differentiated control and access to infrastructure facilities as a

result of inequalities at the household level and in land tenure, and sometimes because of certain cultural restrictions. Women face unique challenges in accessing and participating in infrastructure growth and planning. Because of low levels of education, lack of resources, and division of labour, as well as discriminatory and contesting legal practices dealing with customary laws particularly around land tenure, women often have a hard time finding employment and accessing land, which impedes their ability to participate in the development process, planning, decision-making, and securing benefits.³³⁶ As previously mentioned, the 1995 Lands Act includes provisions for women to control 30% of state lands. However, state lands make up a small percentage of land (6-7%) and, coupled with poor implementation of this requirement, women's land tenure is restricted. This is exacerbated by the lack of women involved in national and local decision-making in Zambia, where they make up only 11% of the seats in parliament and less than 1% of jobs in local governments.³³⁷

Additionally, there is an underlying false assumption that once infrastructure is in place men and women will benefit equally from it. Well-designed, affordable, accessible, and gender considerate infrastructure facilities and programmes is a powerful tool when pursuing gender equality in sustainable development. Gender considerations are therefore a critical element to successful infrastructure project planning and implementation by ensuring

334 Press Cave. (2014). *Top 10 poorest countries in the world 2014-2015*. <http://www.presscave.com/top-poorest-countries-in-the-world/>

335 Cottone, D. *Unemployment*. <http://www.zambiagreenjobs.org/index.php/about-us/the-context/unemployment>

336 Government of the Republic of Zambia. (2006). *Vision 2030: A prosperous middle-income nation by 2030*. <http://unpan1.un.org/intradoc/groups/public/documents/cpsi/unpan040333.pdf>

337 Inter-Parliamentary Union. (2015). *Sluggish progress on women in politics will hamper development*. <http://www.ipu.org/press-e/pressrelease201503101.htm>

sustainability and equitable distribution of access and benefits for both women and men.

In Zambia, lack of access to infrastructure facilities and services is one of the major issues facing women in participating in and benefiting from the infrastructure sector. This includes access to affordable transportation services, safe and reliable water resources, convenient and affordable waste disposal, energy resources, and telecommunication technology, among others (as discussed in further detail below). These issues are further highlighted by women's limited land tenure rights and customary laws that discriminate women.

14.4. Policy and programme interventions

Population and economic activity are heavily concentrated along the copper belt, which is in central Zambia and stretches from Lusaka and north to Ndola. This is also where most of the developed infrastructure systems are and where poverty incidence is the lowest (about 27% around main population centres).³³⁸ However, this area accounts for a small part of the country, leaving the eastern and western regions largely underserved and with poverty rates exceeding 77%.³³⁹ While Zambia is one of the most urbanised countries in Sub-Saharan Africa,³⁴⁰ there is still a large portion of Zambians who do not have reliable access to infrastructure networks—including transportation, energy, and health services—outside of the urban hubs as these are separated by long stretches of rural areas.

The provinces in Zambia—including the Central, Copperbelt, Eastern, Luapula, Lusaka, Muchinga, Northern, North-Western, Southern, and Western provinces—have major potential in developing rural and urban areas but often lack the proper resources needed to develop infrastructure.

14.4.1. Land

For years there has been no national land use plan to specify how much land should be allocated for various purposes and what land should be reserved for different future uses. Planning to meet development needs has therefore been extremely difficult under the present circumstances as a result this has affected mainstreaming gender in effective land use plans to guide the development processes. The little development that has taken place so far has been unplanned and uncoordinated.

Despite multiple pieces of legislation supporting women's rights to land—including the Zambian Constitution, 1989 Interstate Succession Law, the 1995 Lands Act, the 2000 Gender Policy, and commitments to various international treaties—women's access to land is still severely limited compared to that of men.³⁴¹ For example, while the Constitution protects against discrimination based on race, tribe, sex, and marital status, Article 23(4) (c) and (d) excludes customary, personal, or family law from these protections, meaning that in areas where customary laws discriminate against women, the Constitution cannot be used to protect against discrimination. Further, the 1995

338 Ministry of Finance. (2014). Revised sixth national development plan 2013-2016. Government of the Republic of Zambia: Lusaka, Zambia

339 *ibid.*

340 Foster, V. & Dominguez C. (2010). *Zambia's infrastructure: A continental perspective*. Washington, DC: World Bank.

341 Veit, P. (2012). *Custom, law and women's land rights in Zambia*. Focus on Land in Africa.

Lands Act does make provisions for women to gain access to 30% of state land, however, state land makes up about 6-7% of Zambian land with customary land making up the rest.³⁴² Customary laws also disrupt women's ability to inherit land from deceased spouses and family members. This is part of the reason the relatively low number of female headed households (26.6%)³⁴³ despite the major role women have in subsistence agriculture and family care.

Customary land laws are upheld by local traditional leaders, but state land laws, where protections for women are guaranteed by the Constitution, are enforced at the district and central levels. Given that there are no provincial offices responsible for land administration and that communication between the local and central levels is poor, progress on land rights and enforcement of state laws is troubled.³⁴⁴

The 1997 Environmental Protection and Pollution Control (Environmental Impact Assessment) Regulations required approval by an authorising agency for any plan, project, development, or operation that would change the use of the land. To do this, developers must submit an "environmental impact assessment" (EIA), which entails a "systematic examination conducted to determine whether or not a proposed project, or alteration to an existing project, or alternatives, may have significant adverse or beneficial impacts on the environment."³⁴⁵ While these EIAs are important to determining impact of projects,

they are often criticised for failing to address broader issues of land tenure and the realities faced by communities near projects—including allocation of resource use and users. The guidelines for the EIA process does not mention the importance or consideration of gender and women, which represents a major gap in understanding who will be involved and impacted by infrastructure projects.

14.4.2. Construction

Increased investment in infrastructure development has led to a high growth rate in the construction industry. Green job and construction practices are a focus in Zambia through the Green Jobs Programme. Started in 2012 through a joint UN project, the Green Jobs Programme aims to create at least 5,000 sustainable jobs, and improve at least 2,000 existing jobs, among micro, small, and medium enterprises (MSMEs) in the Zambian construction industry. With the construction sector growing rapidly, this Programme is an important implementing body for gender equality in new sustainable job creation, and has already focused on promoting women and youth engagement and participation in construction. The Programme also focuses on greening the construction process through the use of sustainably sourced timber, and promotion of water and energy efficiency in construction projects.³⁴⁶ Additionally, the Programme aims to improve current job conditions for those involved in MSMEs. The Programme has already proved successful in these goals. For example, OmbaLacey is a

³⁴² Veit, P. (2012). *Custom, law and women's land rights in Zambia*. Focus on Land in Africa.

³⁴³ World Bank. (2015). Data: Female headed households. <http://data.worldbank.org/indicator/SP.HOU.FEMA.ZS>

³⁴⁴ USAID. (2010). *Property rights and resource governance: Zambia*. http://www.usaidlandtenure.net/sites/default/files/country-profiles/full-reports/USAID_Land_Tenure_Zambia_Profile.pdf

³⁴⁵ The Environmental Protection and Pollution Control (Environmental Impact Assessment) Regulations of 1997, Environmental Management Act Number 12. §§ 6 and 96 (2011).

³⁴⁶ United Nations in Zambia. (2012). *Green Jobs Programme*. <http://www.zambiagreenjobs.org/>

female entrepreneur who joined the Programme and through a green construction training improved her house construction business through the use of eco-friendly materials.³⁴⁷ These are important aspects that can be scaled-up and promoted as climate-smart in both mitigation and adaptation aspects.

14.4.3. Transportation

Transportation infrastructure encompasses roads and bridges, railways, airports, and pipelines. These are all critical to many aspects of Zambian livelihood, including delivery or services in agriculture, health, education, tourism, and energy. The increase in construction in Zambia, as mentioned above, has been largely in the transport sector, and attributed to a 9% increase in GDP from 2011 to 2012.³⁴⁸ Despite this growth, transportation infrastructure in Zambia is still lacking in many areas. For instance, while 70% of Zambia's population depends on agriculture to sustain livelihoods, only 17% of this population lives with 2 km of an all-season road.³⁴⁹ Furthermore, only 21% of existing rural road networks are in fair to good condition.³⁵⁰ Women have even less access to roads because of lack of money and vehicles, but often need this infrastructure to gain access to markets to sell goods and to engage in alternative livelihood options. Improved feeder roads would be one way to employ local people in construction

and improve women's access to main roads and markets.

Air transport is another area of concern with Zambia's aging fleet and the collapse of Zambian Airways. While overall ridership is fairly high, 1.46 million seats a year, connectivity—number of city pairs served—has dropped from 35% to 25% in recent years—this also has an impact on the tourism industry and development.³⁵¹

Many provinces have taken, or will take, steps to address transportation issues and connect urban and rural areas. According to the Revised SNDP 2013-2016, during the period of the plan, the ten provinces in Zambia have planned to expand and improve over 10,000 km of rural and urban roadways.³⁵² Additionally, several provinces have plans to build airports and bridges to further connect transportation systems in and out of the country.³⁵³

Another consideration is the significant GHG emissions associated with road transportation in Zambia, which will only increase as the economy grows. Some strategies to mitigate the GHG emissions from this sector includes:

- Low-cost public transport systems, including bus rapid transit (BRT);
- Encouragement of non-motorised transport

347 ILO News Room. (2015, June 3). *Female entrepreneur builds economical, green homes in Zambia*. <http://www.zambiagreenjobs.org/index.php/2014-10-07-10-16-31/current-affairs/83-female-entrepreneur-builds-economical-green-homes-in-zambia>

348 Ministry of Finance. (2014). *Revised sixth national development plan 2013-2016*. Government of the Republic of Zambia: Lusaka, Zambia

349 Foster, V. & Dominguez C. (2010). *Zambia's infrastructure: A continental perspective*. Washington, DC: World Bank

350 *ibid.*

351 *ibid.*

352 Ministry of Finance. (2014). *Revised sixth national development plan 2013-2016*. Government of the Republic of Zambia: Lusaka, Zambia

353 *ibid.*

- options by improving bikeways and pedestrian paths in urban areas;
- Creating programmes to help phase out inefficient motor vehicles;
- Enforcing strict vehicle inspections; and
- Improving traffic management.³⁵⁴

Many women, especially in farming communities, have little access to transportation facilities, which leaves them at a significant disadvantage. The 2000 NGP also lays out strategies for the Zambian government to close the gender gap in the transportation sector, including:

- “Making an inventory of transport and communication use by gender.
- Training and awareness raising for women in construction and management of transport infrastructure.
- Facilitating research to identify the modes of transport used in different rural areas, especially by women, to inform the development of appropriate interventions.
- Facilitating and providing soft loans and other incentives such as tax holidays for rural transport operators in order to increase access to transport for poor women, as well as those with disabilities.
- Empowering women to participate in the management of transport in their local communities.
- Developing coordination mechanisms between the transport sector and other

sectors in the economy to ensure that women receive benefits.

- Enacting legislation to compel transporters to import facilities that are accessible to women and persons with disabilities.”³⁵⁵

14.4.4. Water systems

Zambia is one of the few countries in SSA that is water secure, with a renewable water resource that accounts for 15% of the resources in the entire Southern African region, particularly in power and electricity generation (see energy sector).³⁵⁶ However, uneven population distribution, changing rain patterns, floods and droughts, pockets of semi-arid areas, and inadequate water capture present challenges to the water sector.

In 2012, only 60% and 40% of rural populations had access to safe water supply and adequate sanitation, respectively.³⁵⁷ Additionally, about 56% of Lusaka’s peri-urban population do not have access to safe water supply and up to 90% do not have access to proper sanitation facilities.³⁵⁸ Approximately 19% of Zambia’s population relies on surface water for its drinking supply, which is highly vulnerable to climate change impacts.³⁵⁹

New and improved water resources management strategies and infrastructure are needed to improve these conditions. The Revised SNDP 2013-2016 reports that all ten provinces in Zambia have plans to improve water access

354 Ministry of Tourism, Environment, & Natural Resources. (2010). *National Climate Change Response Strategy*. Government of the Republic of Zambia: Lusaka, Zambia

355 The World Bank. (2006). *Gender and transport resource guide: Module 5.8: Transport sector policy points of intervention*. <http://www.ssatp.org/sites/ssatp/files/publications/HTML/Gender-RG/module5/index-p8.html>

356 Ministry of Tourism, Environment, & Natural Resources. (2010). *National Climate Change Response Strategy*. Government of the Republic of Zambia: Lusaka, Zambia

357 Ministry of Finance. (2014). *Revised sixth national development plan 2013-2016*. Government of the Republic of Zambia: Lusaka, Zambia

358 Water and Sanitation for the Urban Poor (WSUP). (2013). *Zambia*. <http://www.wsup.com/programme/where-we-work/zambia/>

359 Foster, V. & Dominguez C. (2010). *Zambia’s infrastructure: A continental perspective*. Washington, DC: World Bank.

and sanitation facilities through the drilling and improvement of over 900 boreholes and wells, the construction and rehabilitation of water infrastructure, and even a new water resources research institute in Chinsali, located in the Muchinga Province.³⁶⁰

As the main accessors of water, women play a crucial role in the water sector and creating equal opportunities for men and women in water resource management is fundamental for effective water management strategies. The major challenge is to build capacity, understanding, and implementation of gender considerations so that programmes can reduce inequalities and integrate knowledge from both women and men.³⁶¹

14.4.5. Waste management

Management of municipal solid waste, healthcare waste, plastics, hazardous waste, industrial waste, organic waste, and e-waste remains an issue for companies, residents, and policy makers in Zambia.³⁶² While the Zambian government has attempted to address some major issues through policies and regulation, implementation is slow or non-existent. National policies on waste management need technical revision with priority to waste minimisation.

A driver of waste mismanagement is the lack of education and knowledge dissemination on

the different wastes, their risks, and how to properly dispose of them. Funding for waste management infrastructure is also lacking in many areas. ZEMA wants to encourage public awareness and involvement in recycling, reuse, and recovery but requires funding and support from the public sector.

The private sector is involved in waste disposal in Zambia through government contracts. However, in many residential areas, residents must contact and pay for waste removal services, which can pose a major obstacle for more rural and impoverished citizens in urban areas as well as rural.³⁶³ There is often a notion of 'women's work' vs. 'men's work' in traditional waste management. However, this is being challenged in Zambia through privatisation of solid waste management, which helps to employ women and increase their income.³⁶⁴

Climate change has a major effect on solid waste management in urban areas. Heavy precipitation events in peri-urban areas and slums can lead to overflow of solid waste if latrines are not properly constructed, leading to water contamination and spreading of disease.³⁶⁵ Women often make up a majority of the population in peri-urban areas and are thus more susceptible to disease spread. Furthermore, they are often charged with taking care of sick family members in addition to their other daily responsibilities.

360 Ministry of Finance. (2014). *Revised sixth national development plan 2013-2016*. Government of the Republic of Zambia: Lusaka, Zambia

361 Government of the Republic of Zambia. (2008). *Integrated water resources management and water efficiency (IWRM/IWE) implementation plan: Volume I: Main report (2007-2030)*. Lusaka, Zambia.

362 UNEP. *Global partnership on waste management: Zambia*. <http://www.unep.org/gpwm/InformationPlatform/CountryNeedsAssessmentAnalysis/Zambia/tabid/105925/Default.aspx>

363 Eco Zambia. *Recycle in Lusaka and environmentally friendly life Zambia*. <http://www.ecozambia.com/#!/waste-management-in-lusaka/c1yam>

364 Foster, S. Dixey, R., Oberlin, A., & Nkhama, E. (2012). 'Sweeping is women's work': employment and empowerment opportunities for women through engagement in solid waste management in Tanzania and Zambia. *International Journal of Health Promotion & Education*, 50(4)

365 Ministry of Tourism, Environment, & Natural Resources. (2010). *National Climate Change Response Strategy*. Government of the Republic of Zambia: Lusaka, Zambia

The lack of infrastructure for waste is also affecting the water drainage systems under increased precipitation variability by causing increased flooding particularly in Lusaka where much of the drainage system is blocked by plastic bottles and bags. This then also leads to transportation issues due to flooding on roadways, increasing traffic congestion and safety hazards.

14.4.6. Energy

A reliable and wide reaching energy sector is key to sustainable economic development. It is predicted that electricity demand in Zambia will increase 4.5% a year, with supply falling behind at an increase of 3.9% a year between 2010 and 2030.³⁶⁶ Currently, energy access in Zambia is low, with only 21.6% of the population with reliable access.³⁶⁷ The urban and rural disparity is especially large with only 4.5% of rural populations with access compared to urban areas' 53%.³⁶⁸ To reach their goal of middle-income nation status, Zambia will need to focus on expanding electricity generation and transmission into less densely populated areas.

The most cost-effective solution is to implement hydro energy projects, including big dam projects and hydroelectric plants, while exploring other renewable and alternative energy sources.³⁶⁹ However, dam projects are fairly controversial in SSA as larger energy infrastructure projects serve the wider

population. Often, in Zambia, dams are used to power industrial practices like mining, which currently accounts for over half of Zambia's electricity demand, while overall electrification remains low.³⁷⁰

Regardless, the potential for hydropower dams is huge and, if distributed equitably with the wider population in mind, could easily expand electrification efforts. Currently, all ten provinces are working to expand, construct, and improve hydro-power plants and build over 20 dams.³⁷¹

14.4.7. Information and communication technology

Communication infrastructure in Zambia is fairly limited, with 53% of the Zambian population living in a mobile network signal zone compared to an average of 67% in other resource-rich African countries.³⁷² Additionally, existing networks tend to be clustered around main economic centres, namely in the copper belt, and is sparse to non-existent in other parts of the country. Furthermore, the state-owned Zambia Telecommunications Company Ltd. (ZAMTEL) is increasingly dependent on state financial support because of its inefficiency and inability to compete with private mobile operators, which has led to a push for privatisation to introduce new investment and management.³⁷³

However, costs to access Internet and international telecommunications are still

366 Yeager-Kozacek, C. (2015, July 22). Zambia Electricity Shortage Highlights Africa's Hydropower Shortfalls [Web blog post]. <http://www.circleofblue.org/waternews/2015/world/zambia-electricity-shortage-highlights-africas-hydropower-shortfalls/>

367 Ministry of Finance. (2014). *Revised sixth national development plan 2013-2016*. Government of the Republic of Zambia: Lusaka, Zambia

368 *ibid.*

369 Foster, V. & Dominguez C. (2010). *Zambia's infrastructure: A continental perspective*. Washington, DC: World Bank.

370 Vagliasindi, M. & Besant-Jones, J. (2013). Zambia. In *Power Market Structure: Revisiting Policy Options*. World Bank.

371 Ministry of Finance. (2014). *Revised sixth national development plan 2013-2016*. Government of the Republic of Zambia: Lusaka, Zambia

372 Foster, V. & Dominguez C. (2010). *Zambia's infrastructure: A continental perspective*. Washington, DC: World Bank.

373 Foster, V. & Dominguez C. (2010). *Zambia's infrastructure: A continental perspective*. Washington, DC: World Bank.

very high in Zambia, leaving many in rural areas—with already limited access—unable to consistently access these technologies. This is especially true for rural women who are already at a disadvantage because of lack of access to resources, transportation, and money.

With further privatisation and liberalisation of the information and communication technology (ICT) sector, in addition to government policies like a national ICT policy and the 2009 Information and Communications Act, will further open the market, expand services, and decrease the costs to consumers.

Furthermore, Zambia is dedicated to foster the emerging opportunities to educate and train citizens on ICT technology, including degree and certificate programmes in computer

science, telecommunications/electronics engineering, media and information services, and ICT skills development.³⁷⁴ To ensure these trainings and programmes will help develop Zambia's ICT infrastructure, the Zambian government has recognised the need for training and education centres, implementing a comprehensive human resource development programme, and the mainstreaming of youth and gender issues in human development activities.³⁷⁵ This is absolutely crucial for sustainable development, and promoting equality in access to information and services are increasingly being distributed via cell phones and internet technology (apps). This opportunity needs to be included for improving information sharing—in both directions—at provincial and district level.

374 Habeenzu, S. (2010). *Zambia ICT sector performance review 2009/2010* (volume 2, policy paper 17). Cape Town, South Africa: Research ICT Africa.

375 *ibid.*

ACTION PLAN: INFRASTRUCTURE

OUTCOME: Infrastructure planning and processes are gender-responsive and climate-resilient

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
1. Promote “green construction” principles and production, and particularly those that are gender-responsive and inclusive	1.1. Identify ecofriendly materials for construction, (e.g. renewable and recyclable, such as house construction with plastic bottles example), including a South-South knowledge exchange	No. of ecofriendly materials and processes identified	MoG, MLNREP, Technical Education Vocational and Entrepreneurship Training Authority (TEVETA), Local Authorities, technical/trade schools, colleges and Universities	500,000
	1.2. Produce research paper on the beneficial impacts of environmentally friendly, climate-resilient materials in construction, and disseminate lessons	Research paper of best practices, entry points, and recommendations		
	1.3. Train women and women’s organisations in green construction benefits and green construction techniques	No. of women trained, and utilising green construction techniques		
	1.4. Promote awareness of existing green technologies (and their entry points into infrastructure development) to be scaled up from rural to national levels, including through education campaigns in schools	No. of training tools and materials targeted (in particular technical schools)		

ACTION PLAN: INFRASTRUCTURE (CONT.)

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
2. Prepare students for gender-responsive, climate-smart development by enhancing primary and secondary education curricula	2.1. Establish working group on gender, climate change and education	Working group	MoG, MLNREP, Ministry of Education, Ministry of Youth and Development, Department of Planning, Provincial Planning departments, schools, teachers, academia, school boards, NGOs and CSOs, youth clubs	800,000
	2.2. Develop gender-responsive climate change curriculum, including women's rights, climate change, and related national policies and plans	No. of schools to integrate curriculum		
	2.3. Promote and disseminate curriculum to be used in schools (curriculum, campaign, materials, etc.)			
	2.4. Train teachers on gender and climate change, including science teachers on gender-responsive climate-resilient and green infrastructure	No. of teachers trained		

ACTION PLAN: INFRASTRUCTURE (CONT.)

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
3. Increase women's participation in every stage of infrastructure development, i.e. planning, design, implementation, monitoring and evaluation	3.1. Identify the key decision-making processes and bodies for infrastructure development in which women are underrepresented	No. of women integrated onto planning boards	MoG, MLNREP, Ministry of Education, Ministry of Chiefs and Traditional Affairs, FBOs, CSOs/CBOs, NGOs, ZEMA, media, community planning structures, women's alliances/networks, Zambia Alliance of Women, etc.	1,000,000
	3.2. Identify women from local communities, districts, provinces, and at national level, to participate in planning processes and bodies			
	3.3. Train identified women on gender, climate change, infrastructure linkages and decision-making processes			
	3.4. Establish mechanism for supporting women to participate in decision-making processes/ bodies			

ACTION PLAN: INFRASTRUCTURE (CONT.)

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
4. Increase women's participation in tendering committee and increase women being considered in the awarding of contracts in the infrastructure sector	4.1. Establish monitoring mechanism to ensure that the 30% quota of positions for women is achieved	% of women in positions	MoG, MLNREP, Ministry of Planning, Ministry of Finance, Ministerial gender focal points, NGOs, CBOs/ FBOs, private sector	500,000
	Ensure that the 30% quota allocated to women is utilised through establishment of a body to ensure this utilisation.	No. of tenders to consider gender and climate concerns		
	4.2 Gender focal points from various Ministries and organisations collaborate to amplify women's role in tenders as they relate to climate change and infrastructure	No. of tenders allocated to women		
	4.3. Conduct training in tendering and negotiation skills in line with climate change			

ACTION PLAN: INFRASTRUCTURE (CONT.)

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
5. Review and revise EIA template act to be gender-responsive and climate resilient, including infrastructure related to water, waste management, energy, etc.	5.1. Establish a committee of experts, including gender experts to elaborate gender-responsive EIA processes and create targeted recommendations for amending the law	EIA process recommendations	ZEMA, MLNREP, MoG, MEWD, Ministry of Justice, NGOs, environmental and gender experts and networks	500,000
	5.2. Organise consultative meetings at district, provincial, and national levels to review and validate the ZEMA Act from a gender and climate perspective	Amendment of the Act Increase in gender-responsive budget allocation to ZEMA		
	5.3. Conduct meetings and trainings to sensitise women on impact of environmental degradation and importance of EIA	No. of trainings and sensitisations		
	5.4. Orient ZEMA to gender and climate concerns	No. of responses from ZEMA to address women's/ community concerns		

ACTION PLAN: INFRASTRUCTURE (CONT.)

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
6. Promote women's understanding and leadership on importance and benefits of recycling and waste management	6.1. Develop and launch awareness raising campaign on cyclical destruction of waste (e.g. plastic bags clogging water drainage systems) and role of women	No. of campaign materials No. of markets identified to target campaign	MoG, MLNREP, NGOs, CSO, FBOs, media, community radio, school, women's organisations/networks, youth, UN agencies,	500,000
	6.2. Develop a technical expert advocacy group to target key policy interventions and amendments for the promotion of gender- and climate-responsive waste management and recycling	No. of policies influenced/amendments	IUCN	

15. PRIORITY SECTOR VI: ENERGY AND ENERGY EFFICIENCY

15.1. Overview

Energy is a driver of economic growth and development, and is a core component of climate change discussions as a major contributor of GHG emissions. Energy production and consumption account for two-thirds of global GHG emissions³⁷⁶ demonstrating the delicate balance needed to both guide and ensure large emission reductions, while sustaining a growing global economy, improving energy security, and bringing access to modern energy services to the billions of people who lack it today. This can

sometimes be seen as a difficult scenario to achieve, with the thinking that there will be some trade-off between mitigating climate change, and continued expansion of economies and development. However, supporting these issues for sustainable growth and socioeconomic advancement is the increasing awareness that low-carbon (i.e. low-emission) alternative energy sources, renewable energy options, and energy efficiency are playing a key role in advancing the sector.

In 2014, energy-related carbon emissions were stable for the first time in 40 years, despite rising energy use, as well as global economic growth. This demonstrates that the correlation between growth, wealth and emissions

³⁷⁶ IEA. (2013). *Redrawing the energy-climate map: World energy outlook special report*. Retrieved from https://www.iea.org/media/freepublications/weo/WEO2013_Climate_Excerpt_ES_WEB.pdf

is not a one-way street. This stabilisation in energy-emissions is attributable to the continued expansion of renewable energies and increasing energy efficiency. For example, by 2013, renewable energy sources provided 19.1% of the global energy consumption, increasing to an estimated 27.7% of the world's power-generating capacity by the end of 2014—enough to supply an estimated 22.8% of global electricity.³⁷⁷ An integral element of this continued growth of the renewable energy sector is the supporting policy framework, as well as increasing cost-competitiveness of energy from renewable sources—an impressive result despite massive reductions in the price of fossil fuels in early 2015.³⁷⁸

In the context of a changing climate and a growing population (as well as the SDGs and sustainable development agenda), the mitigation power of the renewable energy sector must be considered along with the need for renewable, sustainable sources of energy to influence sound adaptation strategies. While still nascent, the awareness around the importance of improving resilience of existing energy systems and infrastructure, and ensuring access to energy services under changing climatic conditions, is improving. This is especially relevant to the poorest, most vulnerable and most marginalised populations.³⁷⁹

15.2. Situation analysis

Energy in Zambia is a driving force for development and growth cutting across most sectors and activities. The Government of Zambia has made this evident through the Zambia Vision 2030, as well as in the most recent SNDP, that growth to ensure adequate and reliable energy supplies at the lowest economic, social, and environmental cost is of utmost importance.^{380, 381} These plans have made clear the need to expand Zambia's capacity for generating electricity, and increase supply especially in rural areas through transmission capacity. The plans also acknowledge the need to put in place systems that are cost-effective but also mitigate the effects of climate change, while exploring renewable and alternative energy sources for sustainable development. It is of course important with these goals to keep in mind persisting challenges in the energy sector including energy access, health, energy security, infrastructure and financing.

The main source of energy in Zambia is wood fuel, accounting for 83% of domestic energy consumption.³⁸² Other sources of energy include hydropower, fossil fuels such as petroleum and coal, nuclear, and biofuels. Energy consumption in Zambia is dominated

377 REN21. (2015). *Renewables 2015: Global status report*. Retrieved from http://www.ren21.net/wp-content/uploads/2015/07/REN12-GSR2015_Onlinebook_low1.pdf

378 IEA. (2015). *Energy and climate change: World energy outlook special report*. Retrieved from <https://www.iea.org/publications/freepublications/publication/WEO2015SpecialReportonEnergyandClimateChange.pdf>

379 Aguilar, L., Granat, M., & Owren, C. (2015). *Roots for the future: The landscape and way forward on gender and climate change*. Washington, DC: IUCN & GGCA.

380 Government of the Republic of Zambia. (2006, December). *Zambia Vision 2030*. Retrieved <http://unpan1.un.org/intradoc/groups/public/documents/cpsi/unpan040333.pdf>

381 National Planning Department, Ministry of Finance. (2014). *Revised Sixth National Development Plan 2013-2016*. Lusaka, Zambia: Government of the Republic of Zambia. Retrieved <http://www.slideshare.net/Net-Innovation/revised-sixth-national-development-plan-20132016-zambia>

382 WHO. (2014, March). *Household Air Pollution and Health (Fact sheet)*. Retrieved from <http://www.who.int/mediacentre/factsheets/fs292/en>.

by households and the mining industry,³⁸³ with energy consumption steadily rising over the last few years as a result of increasing expansion in economic sectors including mining, construction (concrete production), manufacturing and agriculture which in turn has increased demand for both electricity and petroleum products.³⁸⁴ Fossil fuel energy produced in Zambia though is very low, less than 8000 kilotonnes of oil equivalent per year and accounts only for coal.^{385, 386} This results in almost all of the 8.8% of final energy consumption via fossil fuels³⁸⁷ to be imported through the TAZAMA pipeline to a government owned refinery in the Copperbelt Province of Zambia.^{388, 389}

The use of wood and charcoal for cooking and heating fuels is not exclusively a rural problem with 57% of urban populations using traditional biomass and 97% in rural areas.³⁹⁰ Charcoal produced in small, low-efficiency earth kilns in rural areas is often then sold through traders into urban and peri-urban areas³⁹¹ making it the usual fuel of choice for urban cooking because it is commercially available in urban markets, or nearby, and is much more compact from an

energy-content perspective, making it ideal for use in smaller urban dwellings, particularly in environmentally-unfriendly technologies such as old braziers, or mud kilns. The use of this traditional biomass fuel though in urban areas compounds environmental and health problems because of the close living conditions. WHO estimates that the high usage of solid fuels for cooking by the majority of the Zambian population is impacting the lives of over 11 million people with household air pollution. This household air pollution contributes to a number of deaths in adults and children in Zambia, estimated by WHO to be around 9,000, in cases of pneumonia, stroke, ischemic heart disease, chronic obstructive pulmonary disease (COPD), and from lung cancer.³⁹² In addition to the health impacts, the inefficiencies of the traditional mud kilns used to manufacture charcoal can lead to even higher rates of deforestation than would be the case for wood, causing an issue for deforestation, forest degradation, and sustainable landscape use.³⁹³

Access to energy, and particularly electricity, as mentioned above remains a challenge in

383 MLNREP. (2002). *Zambia Second National Communication to UNFCCC*. Retrieved from <http://unfccc.int/resource/docs/natc/zmbnc2.pdf>

384 ZEMA, GRID-Arendal, GRID-Sioux Falls, UNEP. (2012). *Zambia: Atlas of Our Changing Environment*. Lusaka, Arendal, Sioux Falls, and Nairobi: ZEMA, GRID-Arendal, GRID-Sioux Falls, UNEP.

385 Energy production refers to forms of primary energy--petroleum (crude oil, natural gas liquids, and oil from nonconventional sources), natural gas, solid fuels (coal, lignite, and other derived fuels), and combustible renewables and waste--and primary electricity, all converted into oil equivalents.

386 International Energy Agency. (2012). *Energy production*. Retrieved from <http://www.indexmundi.com/facts/indicators/EG.EGY.PROD.KT.OE/rankings>

387 World Bank. (2012). *World Development Indicators: Fossil fuel energy consumption (% of total)*. Retrieved from <http://data.worldbank.org/indicator/EG.USE.COMM.FO.ZS.22>

388 ZEMA, GRID-Arendal, GRID-Sioux Falls, UNEP. (2012). *Zambia: Atlas of Our Changing Environment*. Lusaka, Arendal, Sioux Falls, and Nairobi: ZEMA, GRID-Arendal, GRID-Sioux Falls, UNEP.

389 Zambia Development Agency. (2014, September). *Zambia Energy Sector Profile, 2014*. Lusaka, Zambia.

390 IRENA. (2013). *Zambia Renewables Readiness Assessment 2013*. Retrieved from http://www.irena.org/documentdownloads/publications/rra_zambia.pdf

391 REN21. (2015). *SADC Renewable Energy and Energy Efficiency Status Report 2015*.

392 WHO. (2014, March). *Household Air Pollution and Health (Fact sheet)*. Retrieved from <http://www.who.int/mediacentre/factsheets/fs292/en>.

393 Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) & Poverty oriented basic energy services (HERA). (2011). *Challenges and Potentials to Sustainable Charcoal Production, in Cooking Energy Compendium*. Retrieved from https://energypedia.info/wiki/Charcoal_Production.

Zambia. Despite steady expansion over the last 15 years in electrification, as of 2012 only 26% (an increase from 12% in 2000) of the total population had access to electricity—with 46% in urban areas having electricity, and only 14% in rural areas.³⁹⁴ Zambia does have an abundance of hydro-power, and meets most of its electricity needs from its own hydro stations. Currently installed hydropower capacity is 2,177 MW, but with estimated potential over 7,000MW.³⁹⁵ Currently, Zambia is grappling with a power deficit though due to the lower water levels in the hydropower reservoirs reducing the capacity for power generation. This has resulted in load shedding over the past few months in all of the provinces having an impact on households, businesses and industry.

Another dimension of electricity access is around rural and urban areas. Despite the steady generation of electricity through hydropower resources, even with expansion of the national grid underway, there are issues with grid connection. The low population density and infrastructure outside of urban areas in Zambia makes it difficult and expensive to distribute any form of commercial energy, particularly electricity, to those areas.

15.2.1. Renewable energy

Zambia has abundant resources for modern energy production, however, with the exception of hydropower; renewable energy sources have not yet been fully exploited. Major renewable energy potential lies in solar energy, since Zambia is located in an area with a relatively high but yet unused solar radiation capacity. While some small, remote areas have utilised solar panels

and diesel generators for power there is room for expansion and capacity building.

In the early 1990s, the SADC created a regional energy protocol for a coordinated approach to energy planning; in 2010 the SADC drafted the Renewable Energy Strategy and Action Plan (RESAP) to increase the integration of renewable energies into the region, and the Ministry of Energy and Water Development of Zambia drafted a Renewable Energy Strategy. Following soon after in 2011, the International Renewable Energy Agency (IRENA) began a Renewables Readiness Assessment (RRA) in Zambia to identify country-specific support to Zambia in the future. The Power Africa initiative launched by the US is also underway in Zambia with multiple initiatives including capacity building and technical support especially for the Climate Change Secretariat and developing a LEDS and establishment of a feed-in-tariff (REFIT). As with many developing countries, the establishment of a feed-in-tariff is providing incentive and spurring new investment in small, private sector renewable energy and low-emission options. Zambia will also host the Power Africa Conference in 2016.³⁹⁶

Globally, the share of renewables in the energy sector is increasing gradually, and is the case in the SADC region. However the pace and scale in SADC is anticipated to be smaller due to the large fossil fuel reserves which are already a significant source of power. Zambia though does not have major fossil fuel resources and must import, thus Zambia already has significant renewable energy contributions in power capacity and generation,

³⁹⁴ International Energy Agency (IEA). (2014). *World Energy Outlook 2014*. Retrieved from <http://www.worldenergyoutlook.org/publications/weo-2014/>.

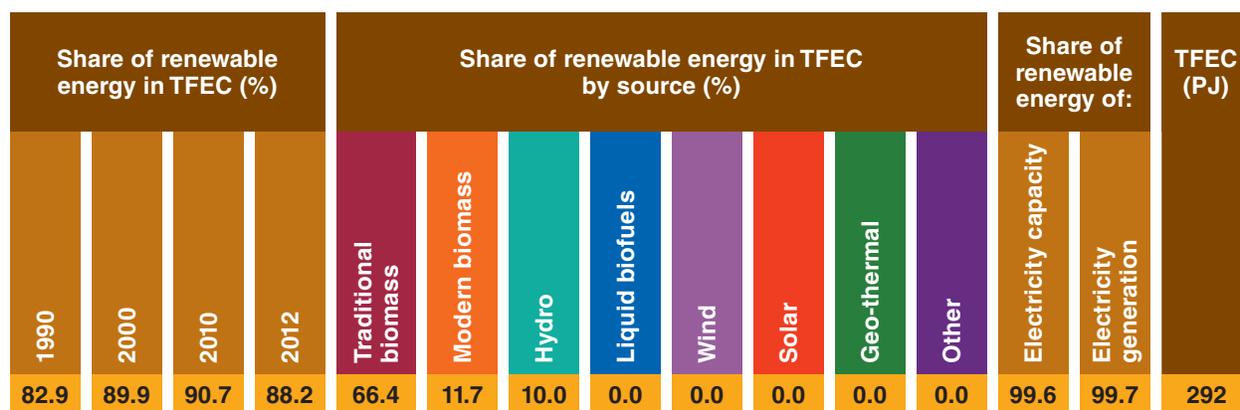
³⁹⁵ Zambia Development Agency. (2014, September). *Zambia Energy Sector Profile, 2014*. Lusaka, Zambia.

³⁹⁶ USAID. (2016, January). *Power Africa in Zambia*. Retrieved from <https://www.usaid.gov/powerafrica/zambia>

due primarily to large-scale hydro development used for electricity.³⁹⁷ Zambia currently has 1,822 MW of generated capacity via large-scale projects (greater than 10MW each), and with projects under development this increases to 2570.50MW total.³⁹⁸ This is largely supported

by the Kafue Gorge Upper hydropower station located on the Kafue River just south of Lusaka, which drains the central part of the country, and also the Kariba Dam on the Zambezi River between Zambia and Zimbabwe, which drains the western region.³⁹⁹

SHARE OF RENEWABLE ENERGY IN TOTAL FINAL ENERGY CONSUMPTION IN ZAMBIA⁴⁰⁰



Solar photovoltaic (PV) and solar thermal both have potential for energy generation in Zambia, however, despite its high solar profile, Zambia has yet to initiate a large-scale power generation project of any kind, and none is planned—most of the work on solar involves small-scale PV, and is not attached to the grid. The Rural Electrification Master Plan (REMP) implemented by the Rural Electrification Authority has proposed plans for ramping up

renewable energy including: (i) extension of the national grid; (ii) construction of mini-hydro power stations where the potential exists; and (iii) installation of solar home systems. The National Energy Strategy reports that solar panel systems have been installed and are operational as part of REMP, including in at least 250 schools and chiefs' palaces and at 400 households under an energy service company pilot project.⁴⁰¹

³⁹⁷ International Renewable Energy Agency (IRENA). (2015). *Renewable Capacity Statistics 2015*. Retrieved from http://www.irena.org/DocumentDownloads/Publications/IRENA_RE_Capacity_Statistics_2015.pdf.

³⁹⁸ Council for Scientific and Industrial Research (CSIR). (2012). "Current status and future developments of small and micro hydro in southern Africa," prepared for Hydroenergia 2012 conference. Table 7 from WimJonkerKlunne, "African Hydropower Database," Hydro4Africa, http://hydro4africa.net/HP_database/all_stations.php.

³⁹⁹ ZEMA, GRID-Arendal, GRID-Sioux Falls, UNEP. (2012). *Zambia: Atlas of Our Changing Environment*. Lusaka, Arendal, Sioux Falls, and Nairobi: ZEMA, GRID-Arendal, GRID-Sioux Falls, UNEP.

⁴⁰⁰ Sustainable Energy for All (SE4All). (2015). *Global Tracking Framework, Summary Report*. Washington, D.C. Retrieved from <http://trackingenergy4all.worldbank.org>.

⁴⁰¹ Walimwipi, H. (2012, December). *Investment Incentives for Renewable Energy in Southern Africa: Case Study of Zambia*. Manitoba, Canada: International Institute for Sustainable Development and Trade Knowledge Network. Retrieved from http://www.iisd.org/tkn/pdf/investment_incentives_zambia.pdf.

Copperbelt Energy Corporation in Zambia is developing several grid-connected PV projects, the first being a 15 MW project in Copperbelt Province. The Zambian government also has issued a tender for 30 MW of solar PV, to be located in other parts of the country.⁴⁰²

Zambian government has been working on biofuels as part of their renewable energy portfolio and cites one of the key achievements during an energy review in preparation for the SNDP to be the adoption of blending ratios for bio-ethanol and bio-diesel as well as the development of standards for bio-energy fuel by the Government which will advance this as an option.⁴⁰³

Zambia has completed preliminary assessments of geothermal and found that there is some potential in the more than 80 hot springs located around the country, but has not been tapped mainly due to cost. Presently there is only one small geothermal generation plant, installed in the 1980s, but could be upgraded to produce up to 2MW of electricity.

Wind capacity potential unfortunately in Zambia has been found to be minimal, except perhaps for water pumping and most likely will not be pursued.^{404, 405}

“The Zambia Grid Code was drafted in 2006 with the objective of facilitating open and

non-discriminatory access to the transmission system in order to ensure that the goals of liberalising the electricity sector, primarily through enhanced efficiency and more rapid electrification, are achieved. Although the document has been drafted and reviewed, it is still being considered for adoption, and despite Zambia’s investment into renewable energies (with the exception of hydro) the draft Grid Code excludes any guidelines or standards for accommodating renewable-energy based electricity into the grid.⁴⁰⁶ It is critical that renewable energy be part of the national power portfolio and connected to the grid to support the rural electrification and expansion of energy access and efficiency across the country.⁴⁰⁷

15.2.2. Energy efficiency

The Zambian Government and national utilities have turned to energy efficiency as a means of reducing demand and thereby delaying the requirement for new generation capacity. For example, replacing incandescent bulbs with compact fluorescent lamps (CFLs) or light-emitting diodes (LEDs) can reduce demand during peak evening hours, as can the introduction of solar water heaters, or the use of hot water load control. Energy efficiency is a complement to renewable energy. Reducing energy demand nationally or in specific communities or regions through energy efficiency will improve the financial feasibility of renewable energy options.⁴⁰⁸

402 REN21. (2015). *SADC Renewable Energy and Energy Efficiency Status Report 2015*.

403 National Planning Department, Ministry of Finance. (2014). *Revised Sixth National Development Plan 2013-2016*. Lusaka, Zambia: Government of the Republic of Zambia. Retrieved from <http://www.slideshare.net/Net-Innovation/revised-sixth-national-development-plan-20132016-zambia>

404 REN21. (2015). *SADC Renewable Energy and Energy Efficiency Status Report 2015*.

405 IRENA. (2013). *Zambia Renewables Readiness Assessment 2013*. Retrieved from http://www.irena.org/documentdownloads/publications/rra_zambia.pdf

406 IRENA. (2013). *Zambia Renewables Readiness Assessment 2013*. Retrieved from http://www.irena.org/documentdownloads/publications/rra_zambia.pdf

407 IRENA. (2013). *Zambia Renewables Readiness Assessment 2013*. Retrieved from http://www.irena.org/documentdownloads/publications/rra_zambia.pdf

408 REN21. (2015). *SADC Renewable Energy and Energy Efficiency Status Report 2015*.

The SADC Energy Protocol has included energy efficiency and conservation as part of their mandate, but there has been little implementation of this in the region. A Regional Renewable Energy and Energy Efficiency Agency (SACREEE) now exists under SADC as it was identified by the SADC member countries' ministries of energy and other regional stakeholders during a consultation

process. SACREEE will concentrate on creating the enabling environment for the uptake of renewable energy and energy efficiency through energy planning and policies; business models and technical innovation; finance and risk management; capacity building and knowledge management.⁴⁰⁹ Zambia has incorporated the following Energy Efficiency and demand-side management activities in Zambia.⁴¹⁰

Programme type													
CFL exchange	Energy-saving awareness	Demand market participation	Time-of-use tariff	Hot water load control	Solar water heating	Energy efficiency in buildings	Energy efficiency audits	Prepaid meters	General rehabilitation	Transmission line upgrade	Power factor correction	Distribution loss reduction	Standards and product labelling
●	●		●		●		●	●	●	●	●	●	●

ZESCO, the Zambian utility company, has been involved in CFL replacement and aims to distribute 1 million CFLs, resulting in up to 66 MW in demand savings. A plan to roll out energy audits for major customers was initiated in 2013 in conjunction with the Zambian Association of Manufacturers, covering preliminary audits of 21 organisations. Additional planned activities in Zambia include a power factor improvement programme, an efficient street lighting programme, time-of-use

tariffs for maximum demand customers, and transmission line upgrades to reduce losses. All of the ZESCO programmes are subject to funding through the electricity tariff, which is one of the lowest in the SADC region. A move towards cost-reflective tariffs is planned but will take several years to implement.⁴¹¹

Energy efficiency is also a major goal of improved cookstove programmes. These initiatives can range from the establishment of

409 IRENA. (2013). *Zambia Renewables Readiness Assessment 2013*. Retrieved from http://www.irena.org/documentdownloads/publications/rra_zambia.pdf

410 REN21. (2015). *SADC Renewable Energy and Energy Efficiency Status Report 2015*.

411 REN21. (2015). *SADC Renewable Energy and Energy Efficiency Status Report 2015*.

local production centres (often run by women's or community groups), to industrial production of portable cookstoves, to setting up franchise systems for distributing foreign-produced cookstoves with higher efficiencies. In Zambia, the Emerging Cooking Solutions is a member of the Clean Cookstoves Alliance promoting replacement of charcoal with waste biomass pellets for use on cleaner cookstoves.

A standards and labelling system have been considered in Zambia but nothing is set for implementation. Other countries in SADC have initiated a voluntary programme for appliances that can include: dishwashers, air conditioners, refrigerators, ovens, lamps, clothes dryers, washing machines and televisions.⁴¹²

15.3. Gender and energy

Women have an important role to play in climate change mitigation, including the energy sector and contributing to energy efficiency. However, in the discourse on climate change and possible mitigation strategies, few governments, institutions and energy sector entities tend to consider ways in which women can make a particular contribution to this effort. In fact, if, and when, women are considered in climate change discussions—whether at international negotiations, or implementation at the project level—it has usually been in terms of their vulnerability and their contributions to emissions from traditional fuel wood.

The energy sector—like other key sectors involved in climate change adaptation and mitigation—is increasingly shedding light on and integrating gender equality concerns. Policies and practices are slowly creating more

diverse and equitable outcomes through equal participation, perspective, access, and/or employment. Given that gender-inclusion in the energy sector is relatively new, evidence from other sectors suggests that women must be involved and included at all levels of the energy sector and value chain—reaping equal benefits and engaging in leadership and decision-making roles at all levels. Inclusive approaches provide opportunities for more effective clean energy initiatives, unlock greater return on investments, and expand the prospect of emission reductions and inclusion of renewable energies in the energy mix at the local, regional and global level.

15.3.1. Gender and energy in Zambia

Although the status of women has improved in many ways, inequalities remain, and the energy sector is an area where imbalance and the undue burden on women is still prevalent. In Zambia, as in many developing countries, the roles and responsibilities associated with household energy provision are directed more towards women and children than men. This can adversely affect their productivity and other alternative income options, as well as posing a risk to their health while cooking but also during collection of fuel wood. This is particularly difficult for women in rural areas where there are few (affordable) options for modern and alternative energy sources.

Zambian women in rural areas spend about two to three hours everyday collecting firewood, with another four to six hours per day are spent on cooking. In the Chikankata area in Southern Province, the Programme for Biomass Energy Conservation (ProBEC) found that, women walk more than five kilometres every other day in

412 REN21. (2015). *SADC Renewable Energy and Energy Efficiency Status Report 2015*.

search of firewood which will last them only one or two days.⁴¹³ Poorer households spend more time searching for and collecting firewood, as wealthier households may be able to afford and purchase higher quality fuels. There is however few alternative fuels, or access to these fuels, but also a limited awareness and information on alternative fuel options to fuel wood and traditional charcoal—and the multiple benefits they provide.

In Zambia, women farmers in rural areas have been developing more sustainable forms of charcoal from agricultural waste products, as opposed to production from firewood resulting in land degradation (and even widespread deforestation in some areas). The agri-charcoal is more sustainable because it is used with residual waste from farming practices including maize and cassava husks, and is also said to burn longer providing more energy per mass than traditional charcoal.

This problem also occurs in urban areas where poorer households and women spend money on charcoal for their daily energy needs, but even for the wealthier the cost of electricity is high and not always reliable due to the current issues in generation capacity resulting in load shedding, so those with access to electricity still use charcoal for space and water heating, and cooking. This can also be attributed to the traditional and cultural stigmas against alternative practices as well.

In Zambia, hydropower plays a major role in electricity generation, thus most of the energy

projects in Zambia that have been implemented are related to electrical power from hydropower. This only accounts for 10% of the national energy supply, of which the main consumer of the electricity is the mining sector though—a male-dominated arena providing few benefits, or opportunities, for participation of women. Because energy projects are focused on hydropower, very few policies, projects, or planning considers the gendered dimensions of this sector, ignoring the overwhelming use of fuel wood for domestic energy and women's role within it, or in the potential for renewable energy options.

A contributing factor to the lack of gender considerations, and gender-sensitive and gender-responsive policy and action is a lack of disaggregated energy sector data in Zambia. This is not an uncommon issue, but was a contributing factor in 2011 behind the Ministry of Energy establishing the Zambia Gender and Energy Network (ZGEN), which, with support from ENERGIA, undertook a gender analysis of the energy sector and provided recommendations to guide gender mainstreaming for the energy sector with the Zambia Gender and Energy Mainstreaming Strategy.⁴¹⁴ The Strategy and an Action Plan outlines activities that can be undertaken in order to deal with the gender issues in the energy sector in Zambia and promote change and improvement in the lives of especially women, in relation to energy access, use, and management.⁴¹⁵ This is a strong achievement and advancement in the Zambian energy sector, and in complement with other policies

413 ENERGIA. (2011, March). *Zambia Gender and Energy Mainstreaming Strategy 2011-2013: Part One – Gender Analysis of the Energy Sector*. Lusaka Zambia: Ministry of Energy and Water Development, Department of Energy.

414 Zambia Gender and Energy Mainstreaming Strategy 2011-2013. Part One: Gender Analysis of the Energy Sector; and Part Two: Proposed Gender and energy Mainstreaming Strategy and Action Plan.

415 ENERGIA. (2011, March). *Zambia Gender and Energy Mainstreaming Strategy 2011-2013: Part One – Gender Analysis of the Energy Sector*. Lusaka Zambia: Ministry of Energy and Water Development, Department of Energy.

and strategies, prompting inclusion of gender considerations, thus providing a platform for continued progress toward gender equality.

There are particular opportunities for Zambia to maximise on considering the newly redefined Ministry of Gender, and a multitude of energy, renewable energy, and energy efficiency policies and activities currently underway or planned. Many of the nascent policies need to ensure gender equality and women's empowerment are considered and reflected which can be done through government-affiliated training and capacity building around gender, climate change and energy. Of particular interest are gender assessments on the needs and impacts of solar production and the feed-in-tariff in the country on poor households, urban and rural, considering female-headed households (and single male-headed households as well).

In 2013, SNV's Biofuels for Lighting project in Zambia supported five oil-producing enterprises comprising 78 members, including 42 women, which now have the capacity to produce and market jatropha oil for lighting in all five project districts. These enterprises received oil-extracting machines for oil production from the Department of Energy, as well as working capital loans to procure jatropha seed and packaging materials for oil.

15.4. Policies and programme interventions

The energy sector in Zambia is guided by the National Energy Policy, which was revised in 2008. This Policy has been developed in the context of the overall national policy framework

including: Zambia Vision 2030, the SDGs in relation to the Zambian context, the SNDP 2011-2015, and the NGP (2000). Other key policies closely linked to the National Energy Policy also include the National Environmental Policy, the National Agricultural Policy and also the National Policy on Science and Technology. All of these policies are interrelated and overlap in terms of their objectives, activities and scope including in accountability, good governance, while mainstreaming cross-cutting issues such as gender, HIV and AIDS and environment as a common requirement in all.⁴¹⁶

Zambia Vision 2030

The Government of Zambia has articulated a National Vision dubbed 'Vision 2030' in which they aspire to be "A prosperous middle income Nation by 2030." The Vision 2030's specific goal for energy is that there would be "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" whilst its gender goal is that there will be "Gender equity and equality in the socio-economic development process by 2030." These goals are very broad and general and do not specifically address the issue of gender equity in energy.

Despite the long term frame in which the Vision will be implemented, its realisation will depend on the actions and measures that government, cooperating partners, private sector, civil society, NGOs and individuals will take through short and medium term plans. However, if the Vision is not translated into tangible actions, it will remain, but a vision even in the year 2030. It is therefore, important that the vision goals are married to the policy goals and the programme

⁴¹⁶ ENERGIA. (2011, March). *Zambia Gender and Energy Mainstreaming Strategy 2011-2013: Part One – Gender Analysis of the Energy Sector*. Lusaka Zambia: Ministry of Energy and Water Development, Department of Energy.

goals as these are the smaller steps to get to where we want to go as a country.

SDGs

The Sustainable Development Goals established in 2015 include separate goals relevant to this priority sector for Zambia on gender and climate change, as well as Goal 7 specifically to “ensure access to affordable, reliable, sustainable and modern energy for all”

Sixth National Development Plan 2011-2015

The SNDP emphasises that energy sector development will be centred around investment in power plant development and expansion, as well as fossil fuel development. There are specific goals at the provincial level to diversify the energy mix to include solar, geothermal, and biogas. There is however no mention of women and gender equality within the sector, but gender is considered as a cross-cutting issue to be mainstreamed across sector-specific Implementation Plans.⁴¹⁷

Zambia National Energy Policy (NEP)

The NEP of 2008 is a guideline to be implemented by and used by various stakeholders in meeting development objectives aiming to improve the lives of Zambians in the energy sector through improved energy availability, supply and use. Stated in the rationale for the revision of the 1994 policy is, “The Government’s

recognition that men and women have different energy needs and requirements and respond differently to development initiatives. Therefore, mainstreaming gender into the energy policy becomes a critical tool for promoting efficient allocation of resources and also promoting equity.”⁴¹⁸

The policy also includes gender as a cross-cutting issue with the following objective: “to promote gender balance in energy planning, management and utilisation to ease the burden of poverty on all vulnerable groups especially women and children, at household, community and national level.”⁴¹⁹ This theme includes several specific policy measures to: enhance access and control of productive resources for women and men; enhance women’s participation in decision-making processes; promote links between energy activities and income-generating ventures; and harmonise legislation on energy with regional and international instruments on energy and gender.⁴²⁰

The Ministry of Energy and Water Development (MEWD) and the Department of Energy in practice are working with stakeholders in various platforms such as the Energy Sector Advisory Group (ESAG) and ZGEN to promote gender awareness and progress in the energy sector, and across sectors.⁴²¹

⁴¹⁷ National Planning Department, Ministry of Finance. (2014). *Revised Sixth National Development Plan 2013-2016*. Lusaka, Zambia: Government of the Republic of Zambia. Retrieved from <http://www.slideshare.net/Net-Innovation/revised-sixth-national-development-plan-20132016-zambia>

⁴¹⁸ Ministry of Energy and Water Development. (2008). *National Energy Policy*. Lusaka, Zambia: Government of the Republic of Zambia. Retrieved from http://say-zambia.org:8080/jspui/bitstream/11361/42/1/National%20energy%20policy_May%202008.pdf

⁴¹⁹ Ministry of Energy and Water Development. (2008). *National Energy Policy*. Lusaka, Zambia: Government of the Republic of Zambia. Retrieved from http://say-zambia.org:8080/jspui/bitstream/11361/42/1/National%20energy%20policy_May%202008.pdf

⁴²⁰ Ministry of Energy and Water Development. (2008). *National Energy Policy*. Lusaka, Zambia: Government of the Republic of Zambia. Retrieved from http://say-zambia.org:8080/jspui/bitstream/11361/42/1/National%20energy%20policy_May%202008.pdf

⁴²¹ ENERGIA. (2011, March). *Zambia Gender and Energy Mainstreaming Strategy 2011-2013: Part One – Gender Analysis of the Energy Sector*. Lusaka Zambia: Ministry of Energy and Water Development, Department of Energy.

*Zambia National Gender Policy*⁴²²

The NGP has articulated some key policy guidelines and objectives with regard to the energy sector. The two main guidelines for the Energy sector outlined are as follows:

- a. Ensure that women and men have access to and control over energy sources.
- b. Ensure that information related to energy sector is disseminated to women, men and children.

The following are the specific gender and energy issues supported by this Policy:

- Facilitate the creation of village wood lots to be managed by communities especially women so as to bring fuel wood nearer to the users.
- Promote the participation of women in domestic and commercial forest for timber and fuel wood.
- Ensure speedy implementation of the Rural Electrification Authority to reduce the burden of providing household energy on women.
- Promote and accelerate research and development of alternative energy sources for household and commercial usage.
- Facilitate and support private sector driven initiatives aimed at extending credit to women for the procurement of renewable sources of energy.
- Support private sector participation to provide affordable basic electric appliances for rural areas.
- Facilitate the provision of cheaper alternative sources of energy to poor communities.
- Review and harmonise legislation on energy taking into consideration international

conventions and instruments pertaining to energy and gender.

Although these policy intentions are also articulated under the National Energy Policy, it is obvious that the MEWD alone cannot realise these aspirations, but that concerted efforts from all key stakeholders are required. However, there is no mechanism in place for monitoring whether the Ministries are mainstreaming gender or not and issues of inequalities between men and women are not specified, nor have indicators been developed. Since the National Gender Policy provides broad guidelines, it is the responsibility of each Ministry, in this case the MEWD and the Department of Energy (DOE), to develop targets, indicators, and activities in accordance with their resources and mandate. The results of the implementation would then be reported back to the Ministry of Gender who monitor the national level gender issues.

Intended Nationally Determined Contribution (INDC)

Within Zambia's INDC submitted to the UNFCCC in 2015, Renewable Energy and Energy Efficiency are regarded as a mitigation component, but energy is also included as a sector to consider in adaptation measures based on vulnerability to climate change. Women are seen as beneficiaries from the intended renewable energy approaches with specific activities contributing to *“Improved education impacts due to longer hours of study and advanced teaching methods, safety, creation of opportunity for girl child and women’s education”* and *“improved food security due to increased agriculture production resulting from use of irrigation especially for women”*.

⁴²² ENERGIA. (2011, March). *Zambia Gender and Energy Mainstreaming Strategy 2011-2013: Part One – Gender Analysis of the Energy Sector*. Lusaka Zambia: Ministry of Energy and Water Development, Department of Energy.

National Climate Change Response Strategy (NCCRS)

The NCCRS from 2010 highlights priority sectoral actions including energy: “to develop a less carbon-intensive and climate change-resilient energy infrastructure and grow using low carbon path”.

ACTION PLAN: ENERGY AND ENERGY EFFICIENCY

OUTCOME: Zambia’s energy sector is diverse and gender responsive, promoting women’s economic empowerment, particularly focused on renewable energy, energy efficiency and low-carbon emission development

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
1. Empower women to advance production and use of sustainable and alternative sources of energy	1.1 Conduct sensitisation and awareness campaigns on alternative sources of energy (e.g. solar power/ panels, improved charcoal, biogas)	No. of awareness campaigns conducted	MEWD, MGD, MLNREP, MOCTA, NGOs (Zambia Alliance of Women), private sector, Center for Energy and Environment,	1,000,000
	1.2 Identify and learn from existing energy projects within and outside of Zambia	No. of projects identified	MIBS	
	1.3 Train women on existing best practices in the use of alternative sources of energy (e.g. solar, improved charcoal and cookstoves, biogas)	No. of women trained No. of women making use of alternative sources of energy		

ACTION PLAN: ENERGY AND ENERGY EFFICIENCY (CONT.)

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
	1.4 Train women in the production of alternative energy sources	No. of women producing alternative energy sources		
	1.5 Build capacity of women's groups to develop strategic action such as advocate, develop financing programmes, and make use of renewable energy	No. of trainings undertaken No. of gender sensitive and renewable energies promoted		
2. Enhance cross-ministerial knowledge and understanding of gender and climate change dimensions	2.1 MoG to establish interministerial training of trainers	No. of gender focal points trained	All ministries, MIBS for translation	350,000
	2.2 Build the capacity of trainers to develop gender and climate-responsive programmes	No. of gender-responsive climate programmes		
	2.3 Translate ccGAP and related materials into at least the 7 primary local languages	ccGAP translated into local languages		
3. Ensure gender-responsive commitments in energy-related budgeting are realised	3.1 Enhance training for Gender focal points on gender-responsive budgeting from a climate perspective	No. of programmes undertaken on climate change	Line ministries, CSOs	100,000

ACTION PLAN: ENERGY AND ENERGY EFFICIENCY (CONT.)

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
4. Broaden popular understanding on gender, climate change, and sustainable energy linkages	4.1 Research and produce paper on gender, climate change and sustainable energy linkages and issues in Zambia	Research paper	Academia, media, MOE, CSO, MOF	500,000
	4.2 Create media campaign and materials to raise awareness of energy, energy efficiency and the impact of climate change	No. of communication materials No. of articles, radio sessions, commercials		
5. Increase access to climate mitigation financing for gender-responsive programming	5.1 Train Interim Climate Change Secretariat (ICCS) on gender and climate change linkages	No. of ICCS staff trained	Ministry of Finance, ICCS, Ministry of Gender, MLNREP, GEF, CIF, AFDB, UN-REDD, FCPF, GCF focal points	500,000
	5.2 Build capacity of ICCS on gender-responsive programme and project implementation	No. of gender-responsive programmes financed		
	5.3 Build capacity of women's organisations to understand and access climate financing	No. of outreach materials No. of organisations trained No. of proposals written		

16. PRIORITY SECTOR VII: TOURISM

16.1. Overview

Tourism is one of the fastest-growing sectors in the world, supporting 277 million jobs and generating 9.8% of total world GDP, according to the World Travel and Tourism Council⁴²³ in 2015.

A 2013 report by the World Bank, “Tourism in Africa: Harnessing Tourism for Improved Growth and Livelihoods,”⁴²⁴ emphasised the powerful potential for development that an enhanced tourism industry can offer—and many SSA countries, including South Africa, Tanzania and Botswana, have begun to capitalise well upon this. Promoting women’s employment and holding the industry to gender equality standards are touted as key opportunities, as well.

The number of tourists coming to SSA has grown over 300% since 1990 according to the above report, contributing nearly 3% of the region’s GDP in 2012. Investments in infrastructure have increased, with hotel chains expanding and entrepreneurs tapping into new opportunities for economic diversification.

At the same time, the potential of the tourism sector is constrained by obstacles across SSA: lack of clear land ownership and authority, and how land is transferred, is one of the biggest. Infrastructure—from roads to sanitation—is another concern, as is environmental degradation and climate change. These affect Zambia deeply. Other typical SSA constraints,

such as security and safety of travellers and bureaucracy related to visas, are not as deeply felt in the country, which is an asset to the industry. All told, Zambia is not on the list of most frequently visited SSA countries—which means there is plenty of room to grow and set itself apart in years to come.

16.2. Situation analysis

The mining industry—which has been the driving force of the economy for decades—represents a precarious balance of pros and cons. Recognising this, especially during the periodic economic downturns faced by the global community and the plummeting of copper prices, especially in the 1990s, the Government determined to find ways to diversify away from its dependence on mining. Examining other aspects of its rich biodiversity, it turned proactive attention to the potential of tourism.

“Zambia has tremendous natural and cultural heritage to share with its citizens and the world,” reads a paper by the Ministry of Tourism and Arts. “It has a vast wildlife estate consisting of 20 National Parks and 36 GMAs which cover over 22.4 million hectares, 31% of the total land mass of Zambia. In addition, Zambia has over 7,000 natural and cultural heritage sites which includes one of the seven natural wonders of the world, the famous ‘Victoria Falls’ or as known by the local people ‘Mosi-oa-Tunya’ which means ‘the smoke that thunders.’”⁴²⁵

In 1996, the Government reclassified the tourism sector from a social to an economic category. This was indication of the sector’s

⁴²³ World Travel and Tourism Council. <http://www.wttc.org/>

⁴²⁴ World Bank. *Africa Tourism Report 2013*. <http://www.worldbank.org/en/region/afr/publication/africa-tourism-report-2013>

⁴²⁵ Imbuwa, Sianga. (2014). *Responsible tourism: Participation of women in the tourism mainstream*. Ministry of Tourism and Arts. Retrieved from <http://www.thecapston.com/pages/docs/Presentation%20Sianga.pdf>

potential to contribute to economic development in terms of, *inter alia*, foreign exchange earnings, employment and income generation, contribution to Government revenues, and promotion of rural development, all seen as important aspects of being a sustainable development catalyst.

The Tourism Policy for Zambia,⁴²⁶ finalised in the late 1990s and the first official vision and plan of its kind, noted that the advent of the Third Republic on November 2, 1991, brought in a changed macro-economic environment in which liberalisation and increased private enterprise participation in the economy became the norm. The Government of Zambia decided that the tourism industry development should be led by the private sector with the public sector providing the necessary enabling environment through appropriate policy measures and support infrastructure improvements. Consequently the Government divested itself of business enterprises, which it previously operated.

Similarly the Government proceeded with substantial institutional reforms, which affected all the organisations in the tourism field including the Zambia National Tourist Board and the National Parks and Wildlife Service, National Museums Board, and National Heritage Conservation Commission.

The Ministry of Tourism and Arts⁴²⁷ was established in July 2011, bringing together the portfolio functions of tourism from former Ministry of Foreign Affairs and Tourism and the portfolio functions of Culture from the Ministry of Chiefs and Traditional Affairs. The

Ministry is responsible for Accommodation and establishments; Arts and Culture centres; Culture industries; Culture Policy; Casinos; National Parks and Wildlife; Safari Operations; Travel agencies; and the Tourism Policy. The Ministry is also responsible for the following statutory bodies: Zambia Wildlife Authority; Zambia Tourism Board; National Arts Council; and Hotel and Tourism Training Institute. Its goal statements are to increase Tourism and Arts Sector contribution to GDP from 2.1% in 2012 to 6% in 2016 and to increase employment creation from 30,000 in 2012 to 300,000 in 2016.

Per World Bank data, which counts annual arrivals (not persons,) into each country, Zambia's inbound tourists have increased in the last few years.⁴²⁸ (While, at the time of the writing of this ccGAP, it is unclear if nationally prescribed targets are being met, as national accounting processes differ, progress is certainly noted.)

Zambia's traditional reliance upon primary products, especially mining, combined with a rapidly growing population has meant that social and economic conditions have been difficult for some years leading to wide disparities in income distribution. In this context, the tourism industry has been viewed as presenting unique opportunities to Zambians in urban and rural areas alike for diversification, growth, new economic activities and jobs. At the same time, the very real and obvious problems of poverty in Zambia are also problems that are obvious to tourists. The social and economic conditions present a challenge to the tourism industry and to sustaining the interests of returning and new visitors.

⁴²⁶ Republic of Zambia Ministry of Tourism. *Tourism policy for Zambia*. <http://www.zambiatourism.com/media/TourismPolicyforZambia.pdf>

⁴²⁷ Ministry of Tourism and Arts website. <http://www.mota.gov.zm/index.php/features>

⁴²⁸ <http://data.worldbank.org/indicator/ST.INT.ARVL>

The poor performance of Zambia Airways, the national flag carrier, which led to its subsequent liquidation in 1995, had an adverse effect on the industry. The problems surrounding international travel thus require immediate attention if the dream of making tourism the second foreign exchange earner are to be realised. Efforts concerning the setting up of a new flag carrier have been welcome and could go a long way in boosting tourism. At the time of this ccGAP, it appears that Zambia Airways may be restarting.

In an effort to diversify Zambia's tourism "product" from a mainly wildlife basis to a more diversified one, museums and heritage are all in the process of being transformed. Museums are being rehabilitated and new ones particularly private museums and community museums which local people, investors, and districts are willing to establish.

Heritage through cultural tourism, i.e. traditional events and ceremonies and national heritage sites, is also set to be one of the ways of diversifying the tourist products including others such as sports tourism, eco-tourism and adventure activities.

Zambia is in competition with her regional neighbours sometimes for the very same tourists; therefore the country aims to set itself apart. Public and private investment plans support this. Since Zambia shares boundaries with a number of neighbours, the effects at trans-boundary natural resource management are meant to be strengthened. Regional infrastructure, not limited to airlines, must also be enhanced.

Tourism is seen as having a multiplier effect. The businesses benefiting from the tourist expenditure are able to spend and pass on the benefit to their staff and suppliers, and to meet tax and other obligations. This flow of income continues as new recipients in turn spend their income on goods and services in the economy creating further incomes and jobs, as well as tax revenues to the Government. It is in this light that the tourism industry has a key role in the national economy as a source of economic growth, provider of jobs and incomes.

16.3. Gender and tourism⁴²⁹

From the outset of the modern tourism industry in Zambia, as put forth in its Tourism Policy noted above, gender issues have been considered. While there are not many specific references to how or why women, their capacities, knowledge, expertise and leadership, should be proactively integrated into the sector, the Policy does include a small stand-alone section on gender. It reads:

“Gender Issues: The Government is committed to ensuring that there are equal opportunities to both men and women in the tourism industry. In cooperation with the “Gender In Development Division”; the Ministry of Tourism will ensure that gender policy objectives are taken account of in the tourism sector.”

“Tourism is perceived to promote the empowerment of women because in most countries, the tourism resource base is predominately in rural and marginalised areas;

⁴²⁹ Imbuwa, Sianga. (2014.) *Responsible tourism: Participation of women in the tourism mainstream*. Ministry of Tourism and Arts. Retrieved from <http://www.thecapston.com/pages/docs/Presentation%20Sianga.pdf>

and as a ‘service sector’ has the potential to attract women. Therefore, it stands to reason that, once women are empowered to perform various trades or own businesses then the economy gains tremendously because of the exponential nature (multiplier effect) of this growth in tourism.”

Horizontal employment, however, in the tourism sector is clear. Women have been able to gain entry into low-level caregiving jobs, for example as hotel maids, while men tend to benefit from the higher-ranking and higher-paid jobs, such as pilots or safari organisers. The Ministry has thus paid special attention to the need for training and transformation of cultural gender norms, empowering women to benefit more holistically from the sector.

Sex tourism and sexual harassment by tourists are also recognised as very real threats to women currently engaged in the tourism sector and to those who seek to engage. The HIV/AIDS epidemic exacerbates concerns in this regard. These are matters which the Ministry, together with the Ministry of Gender, are considering how to tackle.

16.4. Tourism and climate change

As with other dichotomies for Zambia, the country’s abundance of, but dependence on, natural resources and tourism both support each other and work against each other. This is particularly true in the context of climate change. The richness of wildlife attracts tourists, while the act of tourism is (at least potentially) environmentally destructive. At the same time, deforestation and other unsustainable practices

repel tourists, while protecting Zambia’s natural resources would draw them in. And the cycle continues.

While it is difficult to come up with an exact number due to the broad nature of “tourism”, the World Tourism Organization (WTO) and United Nations Environment Programme (UNEP) estimated in 2007 that tourism is responsible for about 5% of global CO₂ emissions.⁴³⁰

The WTO and other agencies have recognised the perilous link between tourism and climate change for decades.⁴³¹ On one hand, tourism depends on climate stability: tourists want to enjoy lovely local weather, and they want to travel to see sites in their natural state—but from glaciers to coral reefs, to wildlife preserves and forests, these are under threat from climate change. On the other hand, the actions of tourists and the tourism sector, such as the transport of tourists, construction, and energy-intensive amenities such as air-conditioning and heating of hotels, and more, are major contributors to climate change.

Climate change will severely affect water security, leaving some tourist destinations struggling with drought, while desertification and deforestation not only affect tourists’ interest in visiting a place such as Zambia but also contribute to the very problem of climate change.

The WTO asserts, “there is now a wide recognition of the urgent need for the tourism industry, national governments and international organisations to develop and implement strategies to face the changing climate conditions and to take preventive

430 World Tourism Organization. *FAQ: Climate change and tourism*. <http://sdt.unwto.org/content/faq-climate-change-and-tourism>

431 World Tourism Organization. *Climate change and tourism*. <http://sdt.unwto.org/en/content/climate-change-tourism>

actions for future effects, as well as to mitigate tourism's environmental impacts contributing to climate change. Furthermore, such strategies should take also into account the needs of developing countries in terms of poverty alleviation and other MDGs.”

In August 2010, the WTO put forward a statement⁴³² on the need for all countries, organisations and stakeholder to urgently pursue “carbon neutral growth” and finding ways to mitigate emissions from air travel. Countries such as Zambia continue to grapple with the need for tourist income and the development that tourism can usher in, with climate change mitigation and adaptation at the very same time. While air travel will likely always be necessary, recommendations⁴³³ include offsetting those emissions with renewable energies and adaptation measures across other aspects of the industry.

Taking proactive steps to protect biodiversity and wildlife, including Zambia's forests—and including schemes such as REDD+ (as discussed elsewhere in this ccGAP)—may have multiplier effects for the tourism sector.

16.5. Policy and programme interventions

The National Tourism Policy was (in 2014) being reviewed and revised, with one of the significant reasons being a concerted desire to promote women's economic empowerment

and direct benefits from the tourism sector. Policy interventions are expected to include government facilitation of women's increased access to credit, and gender equality guarantees in labour conditions, among other things.⁴³⁴

Women's formal employment in hotels and other hospitality venues comprises a key aspect of women's socioeconomic empowerment in Zambia. The Government, specifically the Ministry of Tourism and Arts together with the MoG (then MGCD), established various training programmes at all levels, and other programmes are in place to promote, for example, community entrepreneurship. The Tourism Credit Development Facility and the Citizens Economic Empowerment Commission are two such programmes.⁴³⁵

Women's engagement in the sector also reaches to “the ground”. As one of the more active international development organisations in the country, UNDP supports programmes to empower women economically, including especially via the tourism industry. Trainings organised by MGCD, UNDP and the British Department for International Development (DFID), for example, taught local women to create quality crafts; these artisanal handicrafts produced by the women now form part of a brand, “Take Zambia home with you,” exhibited at the 20th General Assembly of the United Nations World Tourism Organization (UNWTO), co-hosted by Zambia and Zimbabwe in August 2013.⁴³⁶

432 World Tourism Organization. *Statement regarding mitigation of greenhouse gas emissions from air passenger transport*. <http://sdt.unwto.org/sites/all/files/docpdf/unwtohgaviationpolicy2010.pdf>

433 <http://sdt.unwto.org/content/faq-climate-change-and-tourism>

434 Imbuwa, Sianga. (2014). *Responsible tourism: Participation of women in the tourism mainstream*. Ministry of Tourism and Arts. Retrieved from <http://www.thecapston.com/pages/docs/Presentation%20Sianga.pdf>

435 *ibid.*

436 UNDP. *Turning the tide of rural poverty in Zambia through women*. <http://www.africa.undp.org/content/rba/en/home/ourwork/sustainable-development/successstories/turning-the-tide-of-rural-poverty-in-zambia-through-women.html>

Then-Gender and Child Development Minister Inonge Wina stated that her Ministry was keen to work with women, especially those from the rural areas, because they had been sidelined for a long time even though most artists, artisans and tourism attractions were found in the rural areas. “This training not only provides an overview of the existing potential among women involved in handcrafts production in Zambia, but also an entry point for women’s self-employment opportunity,” she added.⁴³⁷

Through the research conducted to prepare this ccGAP, it was evident that some entrepreneurs of the tourism sector are trying to put forward an environmentally friendly, or “eco-tourist,” face of the country to appeal to a wider range of travellers, including especially those concerned about climate change. The extent of this focus or investment is not clear—but it should be heartily considered, as ccGAP workshop participants discussed.

ACTION PLAN: TOURISM

OUTCOME: Zambia’s tourism industry is gender-responsive and climate-smart, promoting and advancing the resilience, livelihoods, and sustainable development of local communities and ecosystems

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
1. Review 2013-2016 National Tourism Policy (NTP) from a gender and climate change perspective and develop recommendations for its successor	1.1 Constitute a technical working group, including especially gender and climate experts, to review and develop recommendations	Draft National Tourism Policy incorporates gender and climate change considerations	Ministry of Tourism, MLNREP, MoG, Ministry of Communications, academia, CSOs, local community representatives	
	1.2 Conduct provincial and national consultative and validation meetings			
	1.3 Disseminate and advocate recommendations for integration into next NTP			

⁴³⁷ Imbuwa, Sianga. (2014). Responsible tourism: Participation of women in the tourism mainstream. Ministry of Tourism and Arts. Retrieved from <http://www.thecapston.com/pages/docs/Presentation%20Sianga.pdf>

ACTION PLAN: TOURISM (CONT.)

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
2. Promote Zambia as an ecotourism destination, particularly with respect to gender and climate change concerns, and targeted toward a women travelers market	2.1 Establish research working group to identify best practices across ecotourism market, including an exchange visit to another ecotourism destination (e.g. Costa Rica)	80% of National and international tourist campaign incorporate gender values	Ministry of Tourism, MLNREP, MoG, Ministry of Communication, academia, CSOs, local communities (and the same in other ecotourism destination countries), private sector	300,000
	2.2 Conduct research into female ecotourist consumer base			
	2.3 Organise public-private consultation to hone comparative advantage of Zambian tourist sector in context of environment sustainability and gender equality			

ACTION PLAN: TOURISM (CONT.)

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
3. Develop communications and marketing strategy that promotes gender-responsive eco-tourism in Zambia	3.1 Identify a team of technical experts to elaborate communication and marketing strategy	Comparative percentage of female and male headed households benefiting from ecotourism experiences	Ministry of Tourism, MLNREP, MoG, Ministry of Communications, Ministry of Chiefs and Traditional Affairs, museums, academia, CSOs, local communities, private sector (tourism companies), Ministry of Local Government	150,000
	3.2 Identify local communities and households to participate in pilot ecotourism experiences			
	3.3 Hold provincial and national consultative meetings to provide input to and validate strategy, including gender-balanced participation and representatives from local communities			
	3.4 Present the communications strategy to tourism industry			

ACTION PLAN: TOURISM (CONT.)

OBJECTIVES	ACTIONS	INDICATORS	IMPLEMENTING PARTNERS	BUDGET (USD)
4. Improve gender-responsive and climate-responsive standards of the tourism sector	4.1 Review and revise the Environmental Impact Assessment (EIA) for tourism infrastructure from a gender and climate perspective	Revised gender-responsive EIA	MoG, MLNREP, Ministry of Tourism, ZEMA, Ministry of Communications, private sector, media, CSOs	200,000
	4.2 Develop sensitisation materials for tourism industry on green technologies (e.g. for construction, water conservation, energy efficiency, waste reduction) and conduct sensitisations			
5. Building on MoG's experience promoting women's economic empowerment in tourism, further promote women's economic empowerment in tourism	5.1 Identify women artisans using recycled, reusable, and sustainable products/ materials and establish cooperative/ network	No. of tourism companies (e.g. hotels, lodges,) selling women's crafts	MoG, UNDP, IUCN, Ministry of Tourism, Ministry of Communications, Ministry of Local Government, local communities, women's orgs and networks, private sector	100,000
	5.2 Connect women's artisan cooperatives with tourism markets			



As indicated previously, the Action Plan was created with the existing policy and institutional framework as its foundation. In light of that, the table that follows is a simple mapping of alignment between ccGAP objectives and the objectives of the National Policy on Climate Change (NPCC). As the MoG is responsible for gender mainstreaming across policies and programmes, and has prioritised climate change in its National Gender Policy, it is arguably aligned throughout.

An integrated approach to climate change adaptation and mitigation is essential and moreover recognises a number of cross-cutting

issues, such as institutional synergy. To that end, the alignment tables that follow are not exhaustive, as sections overlap and very much interlink with each other.

It is clear that, first and foremost, enhancing the gender responsiveness of climate interventions is very much in line with Zambia’s priorities and that, moreover, integrating a gender perspective, including through policies, programmes and budgets, through all sectors affecting and affected by climate change will have a significant outcome for the people of Zambia and will further enhance the Government’s effort to respond to this urgent situation.

17. PRIORITY SECTOR I: SUSTAINABLE AGRICULTURE AND FOOD SECURITY

ccGAP OBJECTIVES	DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES
1. Increase availability of and access to land for women farmers	<p><i>7.2.1</i></p> <p><i>a) Develop and promote sustainable agricultural practices such as conservation agriculture.</i></p> <p><i>b) Promote sustainable silviculture, e.g. ensuring that commercial timber is mostly produced from renewable planted woodlots.</i></p> <p><i>d) Promote good governance in natural resources management at the local level.</i></p>

ccGAP OBJECTIVES

DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES

2. Promote gender-responsive, climate-smart agricultural technologies, particularly for women farmers

7.3.4

c) Undertake research into the differential gender impacts of climate change.

7.1.2

c) Develop community-managed information platforms that can be used for timely dissemination of projected short-, medium- and long-term climate information to farmers and other users in the community.

f) Address soil and land degradation by promoting improved soil and land use, planning and management practices/ techniques/ technologies.

k) Enhance investment in water harvesting and storage infrastructure for agricultural purposes.

l) Facilitate the training and use of appropriate agricultural mechanisation technology among rural women and men.

7.1.3

g) Promote integrated crop-livestock systems.

7.2.1

c) Encourage the use of alternative energy technologies including those that use renewable biomass and biomass waste as fuel.

7.3.1 (technology transfer)

b) Disseminate climate-friendly resilient technologies in different regions by actively involving media and ICT devices.

ccGAP OBJECTIVES

DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES

3. Improve capacity of extensions services with respect to gender and climate change

7.1.2

b) Increase support to the country's Early Warning System to facilitate timely dissemination of weather information so as to enhance preparedness.

c) Develop community-managed information platforms that can be used for timely dissemination of projected short-, medium- and long-term climate information to farmers and other users in the community.

d) Enhance extension services on farming systems that encourage crop diversification including the cultivation and consumption of indigenous and more drought-tolerant food crops like cassava, millet, sorghum and sweet potatoes.

7.1.3

f) Enhance support to extension services, e.g. for the dissemination of livestock species able to withstand adverse weather conditions

7.3.1 (technology transfer)

b) Disseminate climate-friendly resilient technologies in different regions by actively involving media and ICT devices.

4. Building on the existing women's economic empowerment fund, increase access to women farmers to be climate-resilient

7.1.2

i) Enhance financial and technical support to the agricultural sector research and development (R&D).

7.3.5

a) Provide financial and other incentives for scaling up the development and transfer of technology.

d) Build strategic capacities to be able to benefit from technology transfer through the following channels: (iv) funding facilities

18. PRIORITY SECTOR II: HEALTH

ccGAP OBJECTIVES	DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES
<p>1. Build knowledge base on health, gender and climate change linkages, particularly from a Zambia-specific perspective, and including traditional medicinal practices</p>	<p>7.1.9</p> <p><i>a) Promote sustainable (environmental, social, and nutritional) public health interventions.</i></p> <p><i>b) Promote sustainable medical facilities and practices.</i></p> <p><i>i) Conduct research on climate variability/ change impacts on disease incidences.</i></p> <p>7.3.2</p> <p><i>d) Assess the risks of climate change (including short and long-term public health effects of, e.g. extreme weather events, temperature rise) to populations using climate-disease prediction models, and identify the most effective interventions and promote research on socioeconomic implications of climate change.</i></p> <p>7.3.4</p> <p><i>c) Undertake research into the differential gender impacts of climate change.</i></p>
<p>2. Strengthen the mainstreaming of gender and climate change links/ concerns into national health policies, strategies and plans, including for non-government partners</p>	<p>7.1.9</p> <p><i>d) Update and improve compliance (enforcement) of existing laws on public health.</i></p> <p><i>g) Develop and implement climate change action plans for urban and rural areas.</i></p> <p><i>j) Mainstream climate change adaptation into the National Health Policy and the Environmental Health Policy.</i></p> <p><i>l) Scale up programmes such as the “Roll Back Malaria” in response to the expected increases in incidences of malaria outbreaks.</i></p>

ccGAP OBJECTIVES

3. Build the capacity of women and men health workers to be able to prevent and cope with climate change-related health concerns

DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES

7.1.9

a) Promote sustainable (environmental, social, and nutritional) public health interventions.

b) Promote sustainable medical facilities and practices.

k) Heighten surveillance of new outbreaks including the deployment of technologies such as mobile telephones, with subsequent rapid responses to control the epidemics

m) Set up vaccination and immunisation programmes against diseases whose occurrences will be exacerbated by climate change and climate variability.

7.1.10

h) Develop empowerment programmes that enhance climate resilience.

4. Improve public access to health services, particularly in the context of climate-related disasters

7.1.9

a) Promote sustainable (environmental, social, and nutritional) public health interventions.

b) Promote sustainable medical facilities and practices.

c) Ensure adequate water supply during droughts so as to reduce water-borne diseases such as sore eyes, scabies and trachoma.

f) Improve access to clean water and sanitary facilities to limit outbreaks of water-borne diseases, alongside strong public awareness programmes to promote better hygiene in flood and drought prone areas.

k) Heighten surveillance of new outbreaks including the deployment of technologies such as mobile telephones, with subsequent rapid responses to control the epidemics

l) Scale up programmes such as the “Roll Back Malaria” in response to the expected increases in incidences of malaria outbreaks.

m) Set up vaccination and immunisation programmes against diseases whose occurrences will be exacerbated by climate change and climate variability.

7.1.10

d) Undertake proper planning of urban settlements including ensuring that they have proper housing structures, and adequate waste disposal facilities and piped water infrastructure

i) Ensure the participation of women and men in identifying and implementing climate change-proofing programmes and activities.

7.3.1 (technology transfer)

b) Disseminate climate-friendly resilient technologies in different regions by actively involving media and ICT devices.

7.3.2

d) Assess the risks of climate change (including short and long-term public health effects of, e.g. extreme weather events, temperature rise) to populations using climate-disease prediction models, and identify the most effective interventions and promote research on socioeconomic implications of climate change

19. PRIORITY SECTOR III: FORESTS, INCLUDING PROTECTED AREAS, REDD+, BIODIVERSITY AND WILDLIFE

ccGAP OBJECTIVES	DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES
1. Build and strengthen cross-sectoral institutional understanding and capacity on the linkages of gender, climate change, and forestry	<p>7.3.4</p> <p><i>b) Develop, strengthen and harmonise national education, research institutions, and programmes on issues regarding the impacts of, adaptation to, and mitigation against climate change.</i></p> <p><i>c) Undertake research into the differential gender impacts of climate change.</i></p>
2. Enhance policy alignment across forest, climate and gender issues, Ministries and agencies	<p>7.1.5</p> <p><i>g) Put in place institutional and policy frameworks that promote involvement of forest-dependent rural communities in forest management and benefit sharing.</i></p> <p>7.2.1</p> <p><i>d) Promote good governance in natural resources management at the local level.</i></p> <p>7.3.4</p> <p><i>b) Develop, strengthen and harmonise national education, research institutions, and programmes on issues regarding the impacts of, adaptation to, and mitigation against climate change.</i></p>
3. Ensure gender equity and inclusiveness for both women and men in community forest management groups (CFMG)	<p>7.1.5</p> <p><i>g) Put in place institutional and policy frameworks that promote involvement of forest-dependent rural communities in forest management and benefit sharing.</i></p> <p>7.2.1</p> <p><i>d) Promote good governance in natural resource management at the local level.</i></p> <p>7.3.1</p> <p><i>b) Support city and other local government institutions to mainstream climate change adaptation into their programmes.</i></p>

ccGAP OBJECTIVES

4. Promote understanding of gender and REDD+, including opportunities, potential co-benefits, and challenges

DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES

7.2.1

b) Promote sustainable silviculture, e.g., ensuring that commercial timber is mostly produced from renewable planted woodlots.

7.3.1 (institutions)

c) Develop communication tools, training and planning workshops and strengthen the Designated National Authority (DNA).

7.3.1 (financing)

a) Create awareness in climate change finance negotiation.

b) Develop enhancing capacity in accessing CC finance.

7.3.1 (mitigation)

b) Support the identification of policy options that enable the rural poor to engage in climate change mitigation by building the foundation for pro-poor payment for ecosystem service markets.

7.3.1 (REDD+)

a) Develop capacity to improve access to opportunities offered by the UN-REDD Programme and Forest Carbon Partnership Facility, as well as the REDD+ Mechanism under the Copenhagen Accord.

b) Carry out research that would enable the country to benefit from a future REDD+ mechanism by determining the carbon sequestration capacity of various indigenous species by age, ecology, and spacing while taking into account the effects of climate variables.

ccGAP OBJECTIVES

DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES

5. Develop gender-sensitive benefit-sharing schemes

7.1.5

g) Put in place institutional and policy frameworks that promote involvement of forest-dependent rural communities in forest management and benefit sharing.

7.3.1 (financing)

c) Develop a National Climate Change financing framework/mechanism.

7.3.5

a) Provide financial and other incentives for scaling up the development and transfer of technology.

d) Build strategic capacities to be able to benefit from technology transfer through: iii) South-South technology transfer flows, essential for the transfer of “adaptation technologies, e.g. agricultural technologies. North-South technology transfer through Foreign Direct Investment (FDI).

6. Enhance rural forest communities’ women’s livelihood opportunities in forest management, particularly non-timber forest products (NTFP)

7.3.3

d) Create climate change training material and programmes for specific target groups, i.e. women, men, children, youth, people with disabilities, religious groups.

20. PRIORITY SECTOR IV: WATER SECURITY, INCLUDING DRR, PREPAREDNESS AND RESILIENCE

WATER SECURITY

ccGAP OBJECTIVES	DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES
1. Improve existing and new water infrastructure in urban, peri-urban and rural communities addressing the needs of women	<p data-bbox="615 548 662 573">7.1.1</p> <p data-bbox="615 590 1422 737"><i>a) Enhance investments in water capture and storage/ abstraction infrastructure such as dams, strategic boreholes, and tanks, including de-silting of existing dams, to ensure availability of water during dry seasons.</i></p> <p data-bbox="615 789 1377 856"><i>b) Construct and improve drainage systems as well as revising construction designs of water-related infrastructure.</i></p> <p data-bbox="615 909 1393 976"><i>c) Protect flood-prone areas with the construction of appropriate infrastructure.</i></p> <p data-bbox="615 1029 1377 1096"><i>e) Construct inter-basin water transfers (waterways) to channel water from areas with excess water to those with deficit.</i></p> <p data-bbox="615 1148 662 1173">7.1.9</p> <p data-bbox="615 1190 1377 1337"><i>f) Improve access to clean water and sanitary facilities to limit outbreaks of water-borne diseases, alongside strong public awareness programmes to promote better hygiene in flood and drought prone areas.</i></p> <p data-bbox="615 1390 1409 1415"><i>g) Develop climate-resilient national water and sanitation policies.</i></p> <p data-bbox="615 1467 678 1493">7.1.11</p> <p data-bbox="615 1509 1349 1612"><i>b) Introduce changes in the design of infrastructure e.g. enhancement of the designs of roads, bridges, and drainage systems to suit different climatic conditions.</i></p>

ccGAP OBJECTIVES

2. Ensure active participation of women in the planning phases, design and construction of climate change-compliant water infrastructure

DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES

7.1.1

a) Enhance investments in water capture and storage/ abstraction infrastructure such as dams, strategic boreholes, and tanks, including de-silting of existing dams, to ensure availability of water during dry seasons

c) Protect flood-prone areas with the construction of appropriate infrastructure.

e) Construct inter-basin water transfers (waterways) to channel water from areas with excess water to those with deficit.

f) Enforce and/or enact laws and regulations required for efficient water resource management.

h) Protection and conservation of water catchment areas, riverbanks, wetlands (“dambos”), and water bodies from degradation and contamination through the active participation of both women and men.

7.1.9

f) Improve access to clean water and sanitary facilities to limit outbreaks of water-borne diseases, alongside strong public awareness programmes to promote better hygiene in flood and drought prone areas.

g) Develop climate-resilient national water and sanitation policies.

7.1.10

d) Undertake proper planning of urban settlements including ensuring that they have proper housing structures, and adequate waste disposal facilities and piped water infrastructure.

i) Ensure the participation of women and men in identifying and implementing climate change-proofing programmes and activities

ccGAP OBJECTIVES

DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES

3. Expand women's participation, particularly in rural areas, with hydro-meteorological stations and weather data collection

7.1.1

d) Invest in appropriate weather monitoring and measuring equipment and establishment of a database.

i) Develop and monitor artificial recharging of groundwater for threatened aquifers

j) Assess and monitor surface and groundwater resource using an integrated information system and plan

4. Increase awareness of linkages between water, climate change and gender to break stereotypes related to water use due to gender and cultural beliefs

7.1.1

h) Heighten awareness campaigns to underscore the importance of sustainable use of water resources.

k) Enhance institutional capacity for sustainable water resource management.

7.1.9

f) Improve access to clean water and sanitary facilities to limit outbreaks of water-borne diseases, alongside strong public awareness programmes to promote better hygiene in flood and drought prone areas.

7.3.2

e) Undertake research on climate change-related water challenges to cover hydrological systems, drinking water, wastewater and storm-water issues, and assess of the vulnerability of watersheds, wetlands, groundwater and other water resources due to hydrological cycle change.

7.3.3

g) Developing and disseminating climate change literature in local languages for the benefit of marginalised populations and the general public.

7.3.4

b) Develop, strengthen and harmonise national education, research institutions, and programmes on issues regarding the impacts of, adaptation to, and mitigation against climate change.

ccGAP OBJECTIVES

DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES

5. Develop and make available a disaggregated database on vulnerability regarding water-related disasters, (e.g. droughts, disease, landslides, floods)

c) Undertake research into the differential gender impacts of climate change.

7.1.1

c) Protect flood-prone areas with the construction of appropriate infrastructure.

7.1.9

c) Ensure adequate water supply during droughts so as to reduce water-borne diseases such as sore eyes, scabies and trachoma.

DRR, PREPAREDNESS AND RESILIENCE

ccGAP OBJECTIVES

DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES

1. Build capacity of Meteorological Department and Disaster Management Unit on gender to enhance strategies, plans and data collections

7.3.1 (adaptation)

c) Strengthen planning and capacity development initiatives to reduce risk, prepare and recover from disasters including strengthening the Disaster Mitigation and Management Unit (DMMU).

7.3.4

c) Undertake research into the differential gender impacts of climate change.

2. Enhance meteorological information collection and dissemination, especially empowering women and women's organisations

7.1.1

d) Invest in appropriate weather monitoring and measuring equipment and establishment of a database.

7.1.10

h) Develop empowerment programmes that enhance climate resilience.

i) Ensure the participation of women and men in identifying and implementing climate change-proofing programmes and activities.

7.3.2

f) Enhance capacity in climate change modelling and prediction.

ccGAP OBJECTIVES

3. Increase information to and awareness of communities on gender, climate change, disasters, and disaster risk reduction and resilience (DRRR)

DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES

7.3.3

g) Developing and disseminating climate change literature in local languages for the benefit of marginalised populations and the general public.

7.1.11

b) Introduce changes in the design of infrastructure, e.g. enhancement of the designs of roads, bridges, and drainage systems to suit different climatic conditions.

7.1.10

a) Promote disaster risk reduction.

b) Relocate humans from disaster prone areas, e.g. flood-prone areas to alternative safer areas.

c) Develop climate change awareness programmes involving all stakeholders.

g) Encourage the formation of “satellite committees” that can respond to emergencies, and involving them in key decision-making.

4. Increase media awareness and attention to gender, climate change, disasters and DRRR

7.1.10

a) Promote disaster risk reduction.

c) Develop climate change awareness programmes involving all stakeholders.

i) Ensure the participation of women and men in identifying and implementing climate change-proofing programmes and activities.

7.3.3

b) Use print and electronic media to pass climate change information in various articles and programmes in the media.

g) Developing and disseminating climate change literature in local languages for the benefit of marginalised populations and the general public.

21. PRIORITY SECTOR V: INFRASTRUCTURE

ccGAP OBJECTIVES	DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES
1. Promote “green construction” principles and production, and particularly those that are gender-responsive and inclusive	<p>7.1.11</p> <p>a) <i>Revise the building codes to factor in climate change.</i></p> <p>b) <i>Introduce changes in the design of infrastructure, e.g. enhancement of the designs of roads, bridges and drainage systems to suit different climate conditions.</i></p> <p>7.3.1 (technology transfer)</p> <p>a) <i>Promote implementation of new standards aimed at the reduction of GHG emissions.</i></p> <p>b) <i>Disseminate climate-friendly resilient technologies in different regions by actively involving media and ICT devices.</i></p> <p>7.3.5</p> <p>a) <i>Provide financial and other incentives for scaling up the development and transfer of technology.</i></p> <p>d) <i>Build strategic capacities to be able to benefit from technology transfer through: iii) South-South technology transfer flows, essential for the transfer of “adaptation technologies, e.g. agricultural technologies. North-South technology transfer through Foreign Direct Investment (FDI).</i></p>
2. Prepare students for gender-responsive, climate-smart development by enhancing primary and secondary education curricula	<p>7.3.4</p> <p>a) <i>Review curricula to integrate climate change into education systems at all levels</i></p> <p>b) <i>Develop, strengthen and harmonise national education, research institutions, and programmes on issues regarding the impacts of, adaptation to, and mitigation against climate change.</i></p> <p>c) <i>Undertake research into the differential gender impacts of climate change.</i></p> <p>7.3.1 (adaptation)</p> <p>a) <i>Provide advisory services on how to mainstream climate change considerations into development decision</i></p>

ccGAP OBJECTIVES

DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES

7.3.3

c) Promote edutainment (education-based entertainment) – educating the citizens on climate change while entertaining them at the same time through, e.g. theatrical performances.

d) Create climate change training material and programmes for specific target groups, i.e. women, men, children, youth, people with disabilities, religious groups.

e) Undertake promotional activities and sponsorship of events with climate change themes, e.g. a reward scheme for pupils or individuals who plant and maintain trees.

f) Involve local administration and community leaders so as to promote concerted action against climate change through education and training of development workers, local authorities, community leaders on climate change.

g) Developing and disseminating climate change literature in local languages for the benefit of marginalised populations and the general public.

3. Increase women's participation in every stage of infrastructure development, i.e. planning, design, implementation, monitoring and evaluation

7.1.10

d) Undertake proper planning of urban settlements including ensuring that they have proper housing structures, and adequate waste disposal facilities and piped water infrastructure.

i) Ensure the participation of women and men in identifying and implementing climate change-proofing programmes and activities

7.1.1

a) Enhance investments in water capture and storage/abstraction infrastructure such as dams, strategic boreholes, and tanks, including de-silting of existing dams, to ensure availability of water during dry seasons.

b) Construct and improve drainage systems as well as revising construction designs of water-related infrastructure.

c) Protect flood-prone areas with the construction of appropriate infrastructure.

e) Construct inter-basin water transfers (waterways) to channel water from areas with excess water to those with deficit.

7.1.2

k) Enhance investment in water harvesting and storage infrastructure for agricultural purposes.

m) Improve the transport, communication and road infrastructure to enable quick and efficient access for farming inputs and markets.

7.1.6

a) Promote efficient utilisation of upstream water in mini hydro-schemes so as to improve or ensure availability of water downstream for hydro-power production.

7.1.9

f) Improve access to clean water and sanitary facilities to limit outbreaks of water-borne diseases, alongside strong public awareness programmes to promote better hygiene in flood and drought prone areas.

7.1.11

b) Introduce changes in the design of infrastructure, e.g. enhancement of the designs of roads, bridges, and drainage systems to suit different climatic conditions.

c) Create a strategic fund (either a separate fund or as a component of the national road fund agency) for responding to damages caused to roads and other infrastructure by extreme weather events (floods).

7.2.2

b) Understand proper urban transport planning to facilitate efficient and low GHG modes of transport.

ccGAP OBJECTIVES

DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES

d) Create transport demand management measures that encourage or favour public transport.

7.3.2

c) Enhance local capacity in the manufacture, installation, maintenance and operation of basic renewable technologies such as bio-digesters, solar power systems and small hydro-turbines, and other appropriate R&D.

4. Increase women's participation in tendering committee and increase women being considered in the awarding of contracts in the infrastructure sector

7.2.1

To promote sustainable land-use management practices.

d) Promote good governance in natural resources management at the local level.

5. Review and revise EIA template act to be gender-responsive and climate resilient, including infrastructure related to water, waste management, energy, etc.

7.1.10

a) Promote disaster risk reduction

6. Promote women's understanding and leadership on importance and benefits of recycling and waste management

7.1.9

Introduce waste management interventions by providing approved and appropriate means of healthcare waste management.

22. PRIORITY SECTOR VI: ENERGY AND ENERGY EFFICIENCY

ccGAP OBJECTIVES	DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES
1. Empower women to advance production and use of sustainable and alternative sources of energy	<p data-bbox="613 432 667 457">7.2.1</p> <p data-bbox="613 474 1406 537"><i>c) Encourage the use of alternative energy technologies including those that use renewable biomass and biomass waste as fuel.</i></p> <p data-bbox="613 590 667 615">7.2.3</p> <p data-bbox="613 632 980 657"><i>b) Promote rural electrification.</i></p> <p data-bbox="613 709 1406 856"><i>h) Enable easier access to credit facilities to help more people, especially vulnerable groups such as female-headed households, buy solar home systems, in combination with the waiver of import duties and obligatory annual license fees.</i></p> <p data-bbox="613 909 1419 1056"><i>k) Set up a National Clean Energy Fund, as proposed in the Renewable Energy Strategy, which can provide concessional loans to individuals and organisations that would like to invest in green energy sources.</i></p> <p data-bbox="613 1108 667 1134">7.1.5</p> <p data-bbox="613 1150 1393 1213"><i>b) Promote agro-forestry as a way of meeting both food and fuel-wood needs.</i></p> <p data-bbox="613 1266 1349 1371"><i>f) Promote research in alternative energy sources, energy conservation initiatives, and efficient charcoal production and utilisation technologies.</i></p> <p data-bbox="613 1423 1105 1449"><i>c) Promote energy system diversification.</i></p> <p data-bbox="613 1501 1369 1564"><i>i. Encouraging the use of alternative renewable energy such as solar, biomass, wind, biofuels and their technologies; and</i></p> <p data-bbox="613 1617 1393 1764"><i>ii. Promoting efficient firewood/charcoal stoves, solar and LPG cookers, with the Government addressing the high costs of acquiring these technologies through subsidies or tax waivers to poor households.</i></p> <p data-bbox="613 1816 922 1841">7.3.1 (technology transfer)</p> <p data-bbox="613 1858 1312 1921"><i>a) Promote implementation of new standards aimed at the reduction of GHG emissions.</i></p>

ccGAP OBJECTIVES

DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES

b) Disseminate climate-friendly resilient technologies in different regions by actively involving media and ICT devices.

7.1.10

f) Diversify economic activities to improve the resilience of rural communities dependent on climate-sensitive sectors such as agriculture and livestock rearing.

h) Develop empowerment programmes that enhance climate resilience.

7.3.2

c) Enhance local capacity in the manufacture, installation, maintenance and operation of basic renewable technologies such as bio-digesters, solar power systems and small hydro-turbines, and other appropriate R&D.

2. Enhance cross-ministerial knowledge and understanding of gender and climate change dimensions

7.3.3

g) Developing and disseminating climate change literature in local languages for the benefit of marginalised populations and the general public.

7.3.1 (institutions)

a) Support regional and sub-regional preparatory workshops for climate change negotiators.

c) Develop communication tools, training and planning workshops, and strengthen the Designated National Authority (DNA).

7.3.1 (adaptation)

b) Support city and other local government institutions to mainstream climate change adaptation into their programmes.

ccGAP OBJECTIVES

3. Ensure gender-responsive commitments in energy-related budgeting are realised

DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES

7.1.6

c) ii. Promoting efficient firewood/ charcoal stoves, solar and LPG cookers, with the Government addressing the high costs of acquiring these technologies through subsidies or tax waivers to poor households.

7.2.3

c) Enhance investment in renewable energy sources.

h) Enable easier access to credit facilities to help more people, especially vulnerable groups such as female-headed households, buy solar home systems, in combination with the waiver of import duties and obligatory annual license fees.

k) Set up a National Clean Energy Fund, as proposed in the Renewable Energy Strategy, which can provide concessional loans to individuals and organisations that would like to invest in green energy sources.

7.3.1 (finance)

a) Create awareness in climate change finance negotiation.

b) Develop enhancing capacity in accessing CC finance.

4. Broaden popular understanding on gender, climate change, and sustainable energy linkages

7.1.5

f) Promote research in alternative energy sources, energy conservation initiatives, and efficient charcoal production and utilisation technologies.

7.2.3

a) Develop renewable energy resource maps and widely accessible database.

f) Develop guidelines for renewable energy.

7.1.6

c) Promote energy system diversification.

i. Encouraging the use of alternative renewable energy such as solar, biomass, wind, biofuels and their technologies; and

ii. Promoting efficient firewood/ charcoal stoves, solar and LPG cookers, with the Government addressing the high costs of acquiring these technologies through subsidies or tax waivers to poor households.

7.1.7

d) Develop strategies to deal with the impacts of climate change on other operators in the mining value chain (for example, energy and transport).

7.1.10

c) Develop climate change awareness programmes involving all stakeholders.

i) Ensure the participation of women and men in identifying and implementing climate change-proofing programmes and activities.

7.2.2

e) Create a programme to phase out old and inefficient (high fuel-consuming) motor vehicles, while encouraging importation of efficient vehicles through tax incentives and other financial tools.

7.2.4

b) Promote the use of renewable energy, including renewable biomass, e.g. charcoal and firewood produced from sustainably managed forests.

c) Promote energy efficiency, i.e. use of efficient technologies as well as process redesign to improve resource use efficiency.

7.3.3

a) Implement the National Climate Advocacy, Communication and Awareness programme.

b) Use print and electronic media to pass climate change information in various articles and programmes in the media.

ccGAP OBJECTIVES

DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES

d) Create climate change training material and programmes for specific target groups, i.e. women, men, children, youth, people with disabilities, religious groups.

f) Involve local administration and community leaders so as to promote concerted action against climate change through education and training of development workers, local authorities, community leaders on climate change.

g) Developing and disseminating climate change literature in local languages for the benefit of marginalised populations and the general public.

7.3.4

c) Undertake research into the differentiated gender impacts of climate change.

5. Increase access to climate mitigation financing for gender-responsive programming

7.1.6

c) ii. Promoting efficient firewood/charcoal stoves, solar and LPG cookers, with the Government addressing the high costs of acquiring these technologies through subsidies or tax waivers to poor households.

7.2.3

c) Enhance investment in renewable energy sources.

h) Enable easier access to credit facilities to help more people, especially vulnerable groups such as female-headed households, buy solar home systems, in combination with the waiver of import duties and obligatory annual license fees.

i) Use revenue flow from the Clean Development Mechanism (CDM) or its future successor—to leverage investments in renewable energy technologies (RET).

j) Take advantage of bilateral and multilateral funding opportunities available to developing countries to implement RET projects, e.g. the European Commission's Global Energy Efficiency and Renewable Energy Fund (GEEREF), the Clean Technology Fund, and the like.

ccGAP OBJECTIVES

DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES

k) Set up a National Clean Energy Fund, as proposed in the Renewable Energy Strategy, which can provide concessional loans to individuals and organisations that would like to invest in green energy sources.

l) Develop a National Appropriate Mitigation Action (NAMA) framework, that can be funded through the NAMA mechanism likely to be entrenched in a future UNFCCC agreement.

7.3.1 (finance)

a) Create awareness in climate change finance negotiation.

b) Develop enhancing capacity in accessing CC finance.

c) Develop a National Climate Change Financing framework/ mechanism.

7.3.1 (mitigation)

b) Support the identification of policy options that enable the rural poor to engage in climate change mitigation by building the foundation for pro-poor payment for ecosystem service markets.

23. PRIORITY SECTOR VII: TOURISM

ccGAP OBJECTIVES	DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES
1. To collaborate with the Ministry of Tourism and Arts and makes use of the National Tourism Policy (NTP) in mainstreaming gender and climate change perspective	<p>7.1.8 <i>a) Develop the domestic tourism market to cushion the tourism industry against spillover effects of possible mitigation measures in the international aviation industry.</i></p> <p>7.3.4 <i>c) Undertake research into the differential gender impacts of climate change.</i></p>
2. Promote Zambia as an ecotourism destination, particularly with respect to gender and climate change concerns, and targeted toward a women travellers market	<p>7.3.5 <i>d) Build strategic capacities to be able to benefit from technology transfer through: South-South technology transfer flows, essential for the transfer of “adaptation technologies, e.g. agricultural technologies; North-South technology transfer through Foreign Direct Investment (FDI).</i></p> <p>7.1.1 <i>h) Protection and conservation of water catchment areas, riverbanks, wetlands (“dambos”), and water bodies from degradation and contamination through the active participation of both women and men.</i></p> <p>7.1.8 <i>b) Develop a National Wildlife Adaptation Strategy</i></p> <p><i>c) Monitor, manage and remediate degraded rangelands.</i></p> <p><i>d) Create community wildlife ranches and reserves as an additional conservation effort.</i></p> <p><i>e) Improve the carrying capacity of rangelands, e.g. through construction of watering-points and dams in parks, and animal translocation.</i></p> <p><i>f) Enforce existing laws and regulations.</i></p> <p><i>g) Promote research in wildlife management.</i></p>

ccGAP OBJECTIVES

DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES

	<p>7.1.9</p> <p><i>m) Set up vaccination and immunisation programmes against diseases whose occurrences will be exacerbated by climate change and climate variability.</i></p>
<p>3. Develop communications and marketing strategy that promotes gender-responsive eco-tourism in Zambia</p>	<p>7.1.8</p> <p><i>d) Create community wildlife ranches and reserves as an additional conservation effort.</i></p> <p>7.3.3</p> <p><i>a) Implement the National Climate Change Advocacy, Communication and Awareness programme.</i></p> <p><i>e) Undertake promotional activities and sponsorship of events with climate change themes.</i></p> <p><i>g) Developing and disseminating climate change literature in local languages for the benefit of marginalised populations and the general public.</i></p>
<p>4. Improve gender-responsive and climate-responsive standards of the tourism sector</p>	<p>7.1.6</p> <p><i>a) Promote efficient utilisation of upstream water in mini hydro-schemes so as to improve or ensure availability of water downstream for hydro-power production.</i></p> <p><i>c) Promote energy system diversification.</i></p> <p><i>i. Encouraging the use of alternative renewable energy such as solar, biomass, wind, biofuels and their technologies; and</i></p> <p><i>ii. Promoting efficient firewood/charcoal stoves, solar and LPG cookers, with the Government addressing the high costs of acquiring these technologies through subsidies or tax waivers to poor households.</i></p> <p>7.1.9</p> <p><i>g) Develop and implement climate change action plans for urban and rural areas.</i></p>

7.1.10

d) Undertake proper planning of urban settlements including ensuring that they have proper housing structures, and adequate waste disposal facilities and piped water infrastructure.

f) Diversify economic activities to improve the resilience of rural communities dependent on climate-sensitive sectors such as agriculture and livestock rearing.

7.1.11

a) Revise the building codes to factor in climate change.

b) Introduce changes in the design of infrastructure, e.g. enhancement of the designs of roads, bridges and drainage systems to suit different climate conditions.

7.2.1

c) Encourage the use of alternative energy technologies including those that use renewable biomass and biomass waste as fuel.

d) Promote good governance in natural resources management at the local level.

7.3.2

c) Enhance local capacity in the manufacture, installation, maintenance and operation of basic renewable technologies such as bio-digesters, solar power systems and small hydro-turbines, and other appropriate R&D.

ccGAP OBJECTIVES

DIRECT AND INDIRECT LINKS WITH NPCC OBJECTIVES AND STRATEGIES

5. Building on MoG's experience promoting women's economic empowerment in tourism, further promote women's economic empowerment in tourism

7.3.5

a) Provide financial and other incentives for scaling up the development and transfer of technology.

d) Build strategic capacities to be able to benefit from technology transfer through the following channels: (iv) funding facilities

7.1.10

h) Develop empowerment programmes that enhance climate resilience.

i) Ensure the participation of women and men in identifying and implementing climate change-proofing programmes and activities.

NAME	ORGANISATION	PROVINCE
YUNIKE ZULU-MUTALE	MINISTRY OF GENDER	LUSAKA
MUMBA MWANSA	TUKWANKANE WOMEN CLUB	NORTH- WESTERN
BWEMBYA JOYCE	SUMBUNTUNGU WOMEN CLUB	NORTHERN
CHONGO BRENDA	MWINDE WOMEN CLUB CENTRAL	NORTHERN
LAURA .N. MMWANSABAMA	NDINAWE LEZA WOMEN'S CLUB	NORTHERN-KASAMA
LOVENESS MUSHINGE	LUKUMO WOMEN'S CLUB	NORTH WESTERN - MUFUMBWE
MWAMBA BEATRICE	NDINAWE LEZA WOMEN'S CLUB	NORTHERN-KASAMA
AGNESS CHILEYA	JCTR	COPPERBELT
JUDITH KATEULE	JUDITH CHIKONDE FOUNDATION (JCF)	COPPERBELT
SIMWINGA HAMMARSKJOELD	FOUNDATION FOR WILDLIFE & HABITAT CONSERVATION	MUCHINGA-MPIKA
KANJA ILUNGA	ZAMBIA FEDERATION OF ASSOCIATIONS OF WOMEN IN BUSINESS	LUSAKA
MUTINTA KALEMBWE	P.P.U. LUSAKA	LUSAKA
RACHEAL TETAMASHIMBA	MINISTRY OF ENERGY WATER & DEVELOPMENT	LUSAKA
CHOMBA .P. CHIBENDE	MINISTRY OF COMMUNITY DEVELOPMENT & SOCIAL WELFARE	LUSAKA

NAME	ORGANISATION	PROVINCE
MARGRET SHINDANO	KILELABALANDA	LUAPULA
DR. WEZI CHEKWE	NEAC	LUSAKA
EVANS BWALYA	ZAMBIA MACADAMIA ASSOCIATION	LUSAKA
VICTOR.M. BUPE	ZAMBIA METEROLOGICAL DEPARTMENT	LUSAKA
GRACE TEPULA	ZAMBIA ALLIANCE FOR WOMEN	COPPERBELT
BERNARDETTE MALAMBA	ZAMBIA ALLIANCE FOR WOMEN	COPPERBELT
MAILES ZULU MUKE	SAVE ENVIRONMENT & PEOPLE AGENCY (SEPA)	NORTH-WESTERN
CHILUFYA KAPWEPWE	IMITI IKULA EMPANGA (IIEEDO)	MUCHINGA
MULWANDA RICHARD	PROVINCIAL ADMINISTRATION	WESTERN
TIMOTHY MWATE	PROVINCIAL ADMINISTRATION	LUAPULA
MOTION JOSHUA MILAMBO	PROVINCIAL ADMINISTRATION	KASAMA
GILLAN CHIWALE	PROVINCIAL ADMINISTRATION	EASTERN
CLARE MUMBI	PROVINCIAL ADMINISTRATION-PPU	WESTERN
JOSEPH TAMALI	CENTRAL BROADCASTING	LUSAKA
CHALI NYIRENDA	AGRIC-BUSINESS SYSTEMS INTERNATIONAL	EASTERN
ESTHER CHIMIMBA	PROVINCIAL ADMINISTRATION	COPPERBELT
CHIPOKA SIMUKANGA	PROVINCIAL ADMINISTRATION	NORTH-WESTERN
MWANSA MICHEAL	PROVINCIAL ADMINISTRATION	MUCHINGA
PEGGY.N.ZULU	PLANNING OFFICER	MTA

NAME	ORGANISATION	PROVINCE
EVERINA SICHABE	PLANNING OFFICER	MTA
ANNIE KABAYI	SSIAZ	LUSAKA
MERCY.C. ZULU	MINISTRY OF MINES	LUSAKA
BESSIE KALENGA	SSIAZ	LUSAKA
LUSAJO AMBUKEGE	DMMU	LUSAKA
DYLESS MBEWE	ZAMBIA LAND ALLIANCE (ZLA)	LUSAKA
BEATRICE.K. POLE	MEWD	LUSAKA
DAVID NGWENYAMA	WECSZ	LUSAKA
MONDE LINYANDI	ZNBC	LUSAKA
WESLEY LITAKO WAKUMNA	HIVOS FOUNDATION	LUSAKA
CATHERINE TEMBO	USAID	LUSAKA
BORNFACE KAMBATIKA	PROVINCIAL PLANNING UNIT-PPU	SOUTHERN
JOSHUA CHAVULA	ZAMBIA HERALD	LUSAKA
PHILIP WIJMANS	LUTHERAN WORLD FEDERATION - (LWF)	LUSAKA
LUCY NYIRENDA	VISION ZAMBIA	CHIBOMBO
KALONGO KAZENENE	VISION ZAMBIA	MPIKA
DR. MUBANGA GEORGE	MINISTRY OF INFORMATION	LUSAKA
TAONGA CHIPWANYA	MPIKA FM RADIO	MPIKA
MAKUMBA VENEVIVI	MINISTRY OF WORKS & SUPPLY	LUSAKA
DAVIES KASHOLE	FORESTRY DEPARTMENT	LUSAKA

NAME	ORGANISATION	PROVINCE
NDOVI POSENT	ZNBC	LUSAKA
MALALU MULUNDIKA	MINISTRY OF GENDER	LUSAKA
EVARISTO NYANOKA	DEPARTMENT OF AGRICULTURE	LUSAKA
SHAPI EMMANUEL	CBC T.V.	LUSAKA
JOSEPHINE HAJANIKA	CBC T.V.	LUSAKA
DAVID PHIRI	MINISTRY OF COMMUNITY DEVELOPMENT & SOCIAL WELFARE	NYIMBA
GRACE MBEWE	WEDAZ	LUSAKA
CEASAR KATEBE	ZAW	LUSAKA
EVELYN CHAMA	WEDAZ	LUSAKA
AARON SHILIMBWA	HIVOS	LUSAKA
PATRICK SHAWA	WECSZ - 0211251630	LUSAKA
EDAH CHIMYA	ZAW	LUSAKA
ROBERT .K. SALATI	ZARI	LUSAKA
NANCY MALWELE	NEW VISION NEWSPAPER	LUSAKA
BRUCE MAZILWE	MINISTRY OF FINANCE	CENTRAL
DEUTERONOMY KASARO	MITIGATION SPECIALIST	LUSAKA
GEORGE SINKALA	METRO FM RADIO	LUSAKA
SHULA MWAMBA	CLIMATE FOCUS NETWORK	LUSAKA
EPHRAIM MWEPYA SHITIMA	MLNREP	LUSAKA
ASHTON KELLY BUNDA	PAN AFRICA RADIO	LUSAKA

NAME	ORGANISATION	PROVINCE
CHILUFYA MABBANT	GREEN LIVING MOVEMENT	LUSAKA
DALITSO NTHANI	MINISTRY OF GENDER	LUSAKA
BRIAN KAZEMBE	MINISTRY OF CHIEFS & TRADITIONAL AFFAIRS (MOCTA)	LUSAKA
PRISCA MBEWE	MINISTRY OF GENDER	LUSAKA
LOVENESS JENDEENDA	WOMEN IN MINING	LUSAKA
JUSTIN CHUNGA	MINISTRY OF AGRIC	LUSAKA
PRECIOUS MATANTILO	YOUNG WOMEN IN ACTION	LUSAKA
GORIA MUMBA	PRIME TV	LUSAKA
MUSAMBA MUBANGA	CARITAS ZAMBIA	LUSAKA
ELIAS.R. RICHIE	MINISTRY OF GENDER	LUSAKA
JOSEPH MWALE	AMA RADIO	LUSAKA
SAMUEL MBEWE	BREEZE FM	LUSAKA
MISHECK NYIRONGO	CBC T.V.	LUSAKA
KELVIN.M. PHIRI	ZNBC	LUSAKA

