

The Linkages between Climate Change, Trade and Food Security

The Case of Zambia



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Published by



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Citation

Dube C and N'gona S, (2015), The Linkages between Climate Change,
Trade and Food Security: *The Case of Zambia*
CUTS International Lusaka, India

With the support of



First Published: February 2015

Cover photo courtesy by: www.climatechange.ifpri.info

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CONTENTS

<i>Acknowledgements</i>	<i>i</i>
<i>Acronyms</i>	<i>iii</i>
<i>Foreword</i>	<i>v</i>
<i>Preface</i>	<i>vii</i>
<i>Executive Summary</i>	<i>xi</i>
1. Introduction	1
Background	1
Objectives	5
Methodology	5
2. Policy Framework for Climate Change, Food Security and Trade in Zambia	7
Climate Change	7
Food Security	11
Trade	13
3. Assessment of Policy Linkages	15
Food Security Policies	15
Climate Change Policies and Food Security	21
Trade Policy	25
4. Stakeholder Awareness of Linkages	29
5. Conclusions and Recommendations	31
References	35

Acknowledgements

We would like to thank people who made it possible for this project to be accomplished and the report produced. Gratitude is paid to the following colleagues for their research assistance: Tommy Singongi, Chilufya Mubanga, Ann Siame and Musonda Museteka.

We are also equally grateful for the administrative support provided by Joseph Abraham. More important, we are thankful to the Civil Society Environmental Fund (CSEF) for the support provided to this research and specifically Kotutu Chimuka for the insights and guidance.

We hope this project initiates a long-term partnership between CUTS International Lusaka & CSEF in Zambia. The project team is also thankful to Mukesh Tyagi, Garima Srivastava, Suresh P Singh and other colleagues in CUTS HQ (India) for helping us prepare and publish this report.

Acronyms

CAADP	Comprehensive Africa Agriculture Development Programme
CBD	Convention on Biological Diversity
CDM	Clean Development Mechanism
COMESA	Common Market for Eastern and Southern Africa
CSEF	Civil Society Environmental Fund
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
LDCs	Least Developed Countries
MTENR	Ministry of Tourism, Environment and Natural Resources
NAP	National Agriculture Policy
NAPA	National Adaptation Programme of Action
NCCRS	National Climate Change Response Strategy
NCTIP	National Commercial Trade and Industrial Policy
NPE	National Policy on Environment
NLTV	National Long Term Vision
UNFCCC	United Nations Framework Convention on Climate Change

SADC	South African Development Community
SNDP	Sixth National Development Plan
UNCCD	United Nations Convention to Combat Desertification
NEPAD	New Partnership for Africa's Development
UNIDO	United Nations Industrial Development Organisation
UN-REDD	United Nations Reduced Emissions from Deforestation and Forest Degradation

Foreword

Zambia has over the past decades undergone catalytic transformation in the economic circles with increased economic growth mainly attributed to the mining industry boom and high agricultural yields. This has also led to the country being given the status of a middle-income nation. The status could not have been realised without the progressive policies that have resulted in increased production in the mining sector and bumper harvests over the years, which have led to national food security. The relative success could also be associated in part with regional integration and more active participation in the multilateral trading system, where the country has registered impressive export growth led by trade in maize, tobacco, cotton, tea and coffee. Favourable climatic conditions and generally arable land support cultivation of a diverse range of crops.

However, these relative achievements have not been without challenges. Several historical events, such as the drought of the early 90s stand as examples of the various challenges the country has faced. In the recent past, climate variability and change has become more frequent and intense contrasted by extremes of either too little rainfall or too much of the same leading to floods. Climate change and its resulting impacts threaten the food security of the country and, hence, have been described as the defining challenge of our time with a potential to reverse significant economic gains so far attained. Farming and agricultural practices in the country are still largely dependent on rain fed agriculture, which is vulnerable to climatic and extreme weather variability and change that invariably has led to shift in farming periods from late October-

early November to the current late November-early December. The recent emergence of the army worms has also been attributed to the drastic changes in climatic conditions over the years, which favoured the proliferation of these devouring pests.

This study conducted under CUTS International Lusaka examined the linkages between climate change, food security, and trade and how they interact in Zambia. The study would be a basis for all relevant stakeholders to develop and implement holistic responses to the challenges of climate change and the resulting threat to food security, through trade. It has proposed important recommendations for various stakeholders that are relevant for consideration in order for the country to stay on course in sustaining its status of middle-income country and build a resilient economy.

I take this opportunity to sincerely express my gratitude to CUTS International Lusaka for initiating this novel and yet timely project aiming at redressing the effects of climate change on food security as well as on trade in Zambia. I trust that the findings in this study will contribute immensely to the national, regional and international efforts to address climate change, food security and trade challenges and importantly will add to the national knowledge base on the issue.

Noah Zimba
Chairperson
Zambia Climate Change Network (ZCCN)

Preface

Climate Change has posed considerable threats to food security in Zambia specifically given that the resulting extreme weather conditions, such as drought and heavy rains have destroyed much of the crops. Food prices soar, making it impossible for most of the population to afford food. The poor or even lack of infrastructure that could have facilitated trade between the surplus and deficit areas has worsened the crisis.

It is clear from the recent revelations in this research and similar studies conducted by CUTS International in East Africa that the linkages between climate change and food security have to date, largely been explored in relation to impacts on crop productivity and hence, food production. It is important to note that trade and climate change factors might impact food security in three ways, as a direct consequence of trade policies at the national and international levels.

For example, enhancing trade liberalisation initiatives may stimulate exports, thus generating economic growth and increased incomes, and giving households greater capacity to access food. On the other hand, climate change impacts on agriculture, For example, more destructive weather-related events that affect food availability; and as a result of the inter-linkages between trade and climate change (for example, climate change affecting global food availability would affect food prices, potentially triggering the adoption of restrictive trade policies).

This broad theoretical and practical case is what motivated CUTS International Lusaka to undertake a policy gap analysis on the linkages. This initiative undertaken by CUTS International Lusaka in therefore, aimed at unpacking the following:

- state of the policy environment and how it speaks to the linkages;
- gauge the awareness level of targeted stakeholders on the linkages and what practices are or not in place in ensuring that the effects are negated; and
- quantify areas where the gap is for future interventions for policy-makers, cooperating partners, CSOs and the media

I trust that through this study, policy-makers in Zambia would be better informed so as to should ensure that there is always policy coherence, with clear spelt out linkages, among the three issues either at evolution or implementation level of these policies. I am also confident this research would generate the necessary awareness among critical stakeholders on linkages between climate change, food security, and trade thus facilitating them in undertaking their respective tasks.

I take this opportunity to thank the Civil Society Environmental Fund (CSEF) who is the supporting agency and all those who were associated with the research study.

Mike Muleba
Board Chairman
CUTS International Lusaka

Executive Summary

Climate change, food security and trade are generally all linked, bringing in the need for policies that seek to promote them to be able to communicate to each other. The linkages between the three policies need to be harnessed to ensure that the synergies are utilised in poverty alleviation efforts.

The climate change policy regime in Zambia is generally shaped by a variety of government strategy papers. There is currently no active climate change policy in Zambia. However, a draft National Policy on Climate Change, produced in April 2012 will soon fill this void. Before the finalisation of the policy, there are several pieces of strategies that could adequately address the issue of climate change if properly enforced, especially since strategies for climate change have clearly spelt objectives and action plans to deal with climate change issues. These include the National Climate Change Response Strategy (NCCRS), developed to support and facilitate a coordinated response to climate change issues in the country. The National Adaptation Programme of Action (NAPA) could also be regarded as one of the climate change policy documents as it is also a government product whose provisions play an important role in determining the course of the climate change discourse in Zambia.

The food security policies in Zambia include given that Zambia's economy is mostly agro-based, food security policies are mostly those that shape up the agriculture sector. Key among these is the National Agriculture Policy (NAP), (2004-2015), whose overall objective is to facilitate and support the development of a sustainable and competitive agricultural sector that assures food

security in Zambia. Zambia is also in the process of revising the NAP due to observed limitations in enhancing food security in the country.⁰ In November 2012, the Ministry of Agriculture and Livestock produced a Draft NAP, which is yet to be finalised. In addition to the NAP, the Irrigation Policy and the National Seed Industry Policy are also critical food security policies in Zambia.

Trade in Zambia is generally shaped by a specific policy – National Commercial Trade and Industrial Policy (NCTIP), developed in 2007, which is the main policy document governing trade in Zambia. Besides, the policy also recognises that trade could serve as a vital tool for addressing poverty reduction.

A look at the manner in which these policies connect to the linkages between climate change, food security and trade reveals different results. The NAP only covers climate change issues indirectly, as the focus is mostly on environmental protection rather than climate change compliance. The policy has no specific mention of ‘climate change’ and neither do the objectives clearly reflect that the production systems and conditions, promoted by the policy would be aware of climate change. The new Draft National Agriculture Policy that was produced in 2012, however, has tried to amend these shortcomings. It specifically identifies the need to be in line with climate change issues as one of the main reasons for a new policy when the extant policy was expected to run until 2015. The Draft NAP acknowledges that the implementation of the NAP revealed some challenges and gaps including emerging issues, such as climate change and the country’s commitment to the Comprehensive Africa Agriculture Development Programme (CAADP).

The food security policies generally acknowledge the importance of trade, given the need for surplus food to be exported out of the country while during deficits food is imported into the country. The NAP provides for the facilitation of trade in agricultural commodities within and outside the country. The Draft NAP has actually done a better job in highlighting to the

linkages with trade compared to the existing policy by providing strategies for increasing agriculture exports.

The National Climate Change Response Strategy (NCCRS) together with the NAP highlight the linkages with food security. They identify the various avenues through which climate change could have adverse impacts on agriculture, wildlife and water resources, which all have a bearing on food security. They also seek to serve as a roadmap for adaptation strategies to adverse impacts of climate change while at the same time, ensuring that food security related objectives already identified are also met. The Draft Climate Change policy also adequately connects to the linkages with food security by acknowledging that the agriculture sector is very sensitive to climate change and is already showing high vulnerability to climate variability.

The trade policy, however, has some limitations in relating to these linkages. The National Commercial Trade and Industrial Policy (NCTIP) covers climate change issues only indirectly as it largely has provisions on environmental protection, which are not necessarily equivalent to climate change mitigation and adaptation strategies. The trade policy, however, does a better job when it comes to linkages with food security. It acknowledges the need to take advantage of the geographic proximity of regional markets, which makes them attractive export destinations for products from small and medium enterprises, as well as smallholder farmers.

Based on interviews with some few stakeholders, it is clear that there is a very limited level of appreciation of climate change, trade and food security linkages. Some prominent gaps include lack of coordination by all stakeholders in the quest to deal with climate change issue. The need to intensify financing of intervention programmes in order to deal with climate change issues was also raised. It is generally felt that in Zambia there is inadequate planning with regard to financing of climate change, which explains why it has remained a challenge to the society. Awareness campaigns must be intensified on the effects of climate change, so that it becomes inclusive of people from the grassroots.

1

Introduction

Background

Climate change is one of the most topical issues that are subject to discussion at various international fora in the current scenario. It could be defined as the change in the state of climate over time, whether due to the natural means or as a result of human activity (Mudenda, 2010). Climate change is reflected in excessive temperatures compared to the previous years for the same period, excessive rainfall and floods as well as persistent droughts. This affects water availability, agriculture patterns, forests and wildlife, which would also have an impact in terms of people's livelihoods.

Food security can be viewed from three dimensions, where food security oriented policies have to target; food availability, food access, and food use and utilisation (Kodamaya, 2011). Food security can also not be isolated from social protection objectives, since a broader view of social protection implies putting up strategies that respond to the deprivation that the poor face. Thus a more complete view of social protection intervention to support food security includes production (target inputs), employment (food for work), and trade (food-price interventions, such as consumer subsidies) (Kodamaya, 2011).

Since trade can have both negative and positive impact on food security strategy, it could not be isolated from food security policies. Trade in this context would refer to both domestic trade and international trade, involving transfer of resources from surplus areas to deficit areas by economic agents through payment

of an agreed return for the product. This also includes trade in services and technological transfers, which would also have an impact on climate change and food security. On the negative side, policies can suppress local resilient production system for short-term trade intervention. It also has the potential to introduce social shock in the food chain by impairing food sovereignty and nutrition for commercial substitute.

The linkages between climate change and food security are not difficult to understand. Climate change poses the biggest threat to food security in the world as due to extreme weather conditions, such as drought and floods having destroyed much of the crops. Food production in most developing countries like Zambia is generally nature dependent, such that rainfall and temperature patterns play a significant role in determining the status of food security. Climate variability creates seasons that are more erratic, which makes it difficult for small holder farmers to plan farming activities properly. Thus most small holder farming communities would face reduced range of livelihood sources, warranting running down of savings, which further compromises their purchasing power and borrowing abilities resulting in poor nutrition conditions. Climate change thus creates food shortages, which result in soaring food prices at a time when a significant proportion of the world population is poor.

The linkages between climate change and trade are, however, not simple. The nexus could take place through the impact of trade on economic growth, which could either be positive or negative. In addition, increased international trade results in economic growth, which in turn increases domestic production activities. This further leads to more pollution and release of more greenhouse gas carbon emissions, thereby resulting in climate change. On the other hand, international trade could enable countries to acquire products and technology that is necessary to support mitigation measures against climate change. Trade in products that have low carbon content and in case of environmental goods and services could enable the countries to

access climate-friendly technology (Ddamulira, Nalunga and Isabirye, 2013). Additional threats include introduction of gene pools with genetically modified materials, under the guise of technological improvements, which disfranchises small holder farmers' right to see and further compels them to use seed materials that are often less resilient to climate change and require higher production inputs and costs.

On the other hand, the linkages between food security and trade are, however, direct. Although most traditional crops are grown for consumption, trade in primary agriculture products, which have a huge bearing on food security has also intensified over the years. Thus international trade becomes important as it could easily assist in filling gaps when food security is threatened. International trade is also important in ensuring that farmers and other food producers get access to international markets, which also increases income and, hence, reduces poverty. At the same time, trade in products that are critical for food security also needs to be managed as a trade-off would have to be made to ensure that the economy is food-secure before the products are traded on a large scale in the international market.

Since climate change, food security and trade are all linked, there is always need for policies that seek to attain complementary objectives to be able to speak to each other. A policy regime that adequately speaks to these linkages is likely to succeed in mapping out policy responses that adequately address food security, trade and climate change issues. The linkages between the three policies need to be harnessed by policy to ensure that synergies are enjoyed in poverty alleviation efforts.

Policy measures focussing on mitigation and adaptation measures would have a positive effect on food production and productivity, as they would ensure that farmers and stakeholders concentrate on production that is more suitable for the prevailing climate rather than continuing to rely on traditional way of production. Trade policies influence the manner in which trade is conducted, which has an impact on food security. For example,

enhancing trade liberalisation initiatives might stimulate exports, thus generating economic growth and increased incomes, and giving households greater capacity to access food. On the other hand, trade liberalisation could also curtail production as foreign goods displace locally manufactured goods, which could increase unemployment and have a negative impact on food security. In the same vein, if properly structured, food security policies would also be able to provide strategies on dealing with the adverse impact of climate change. The same is equally true for climate change, they give strategies that could enhance food security and trade taking into account the climate change variables.

It is within this context that these linkages are being assessed from the Zambian perspective. Zambia has not been spared from climate change and the associated effects, given that the country has already recorded increases in temperature and variability in rainfall patterns over the past few decades. Temperatures are estimated to have been increasing at about 0.6°C every ten years and are projected to increase further between 2010-2070 by 2°C while rainfall is projected to decrease by between 8 and 10 percent (Bwala, 2010). The Government thus has been putting in place policy measures and programmes that are designed as adaptation and mitigation measures to curb the effects of climate change.

Food security concerns also continue to be real in Zambia, with the 1999-2002 Zambian dietary energy supply estimated at 1,900 Kilocalories (Kcal) per person per day, which is below the recommended per capita level of daily caloric availability of 2,100 Kcal (Kodamaya, 2011). A significant proportion of the Zambia's population are poor farmers who live in the rural areas and largely depend on food production for their subsistence and sustenance of their livelihood. Among these are those who are generally not secure in terms of food security as they do not produce enough for themselves and cannot afford to buy the food. In addition, about 10 percent of the population are destitute, with a per capita food consumption of under 1,400 Kcal per day (Kodamaya, 2011).

The Government has thus realign and reinforces several policies that have a bearing on food security, key among them being the agriculture oriented policies.

Based on the International Monetary Fund's Restrictiveness Scale, Zambia's trade regime is among the most open economies in Africa. Though there has been a positive trend in Zambia's exports in the region and internationally, the country is still ill-equipped to take full advantage of existing market access opportunities. Marginalised groups at the grassroots such as small-scale farmers, informal traders as well as small and medium enterprises have mostly not benefited much from the implementation of international trade policies. There have been calls for the government to respond to this through a more inclusive trade policy regime that is more relevant to support food security and climate change adaptation.

This study is an attempt to comprehend how the policy regime in Zambia governing climate change, food security and trade addresses the linkages between these sectors.

Objectives

The objective of the paper is to give a brief outline about the state of the policy environment with respect to climate change, food security and trade and then explore whether the linkages are provided for in the policies. This would culminate in the identification of gaps that would warrant some policy responses and adjustments. Further, the report tries to assess the awareness levels among different stakeholders on the linkages and their importance thereof.

Methodology

The paper is mainly based on literature review, which involved identifying how the linkages on climate change, food security and trade need to be harnessed. Based on this, the policies that Zambia

has put in place that uptake climate change, food security and trade in its scope are explored to assess whether they appreciate these linkages. Further, the study targeted interviews with key stakeholders to assess their awareness and significance of the linkages.

2

Policy Framework for Climate Change, Food Security and Trade in Zambia

Climate Change

There is currently no properly structured policy in Zambia that specifically intends to address climate change. However, the Draft National Policy on Climate Change, produced in April 2012 is at an advanced stage of completion to fill this void. Zambia's Draft Climate Change Policy resulted out of national stakeholder demands to have a standalone policy. Before the finalisation of the policy, there are several sections of policies and strategies that could adequately address the issue if properly enforced, especially since strategies for climate change have clearly spelt the objectives and action plans to deal with climate change issues.

For example, Zambia is a signatory to the United Nations Framework Convention on Climate Change (UNFCCC), which has seen the country being engaged in the UNFCCC process through the Ministry of Tourism, Environment and Natural Resources (MTENR). As part of the process, the Ministry with other stakeholders generates the country positions for international and regional climate regime discussions that also take on board the regional and the continental positions.

Furthermore, Zambia also happens to be one of the few countries selected to pilot the United Nations Reduced Emissions from Deforestation and Forest Degradation (UN-REDD+) Programme. The UN-REDD+ programme aims at reducing deforestation and forest degradation in developing countries, and also to encourage them to effectively participate in crafting the post 2012 climate change regime. The UN-REDD+ thus could be regarded as a policy strategy, since it also influences the manner in which action points and strategies mitigation actions on climate change would be developed at the country-level.

Zambia also ratified the Kyoto Protocol of the UNFCCC in October 2006, through which it participates through the implementation of the Clean Development Mechanism (CDM). CDM projects are intended to contribute to the global reduction in greenhouse gas emissions and promote sustainable development in Zambia. Other international conventions, agreements and treaties related to climate change that Zambia is party to which have influenced the manner in which the country develops national strategies include: Rio 1992, the 17th Conference of the Parties to the UNFCCC; the United Nations Convention to Combat Desertification (UNCCD); the Convention on Biological Diversity (CBD); Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal; Vienna Convention on the Protection of Ozone Layer and Montréal Protocol on Substances that Deplete the Ozone layer, among others. These have all played a part in the manner in which Zambia has developed strategies to deal with climate change.

Zambia's climate change strategies are also shaped by developments at the regional level, especially developments and debate at the South African Development Community (SADC), Common Market for Eastern and Southern Africa (COMESA) and New Partnership for Africa's Development (NEPAD). Under Article 5 of the SADC Treaty, members are expected to achieve sustainable utilisation of natural resource and effective protection of the environment. The SADC Protocol on forestry demands that

member states assist and support each other to address issues of common concerns, including climate change in a manner that makes the best use of the technical, financial and other resources in the region. The SADC institutional capacity building project also covers climate change issues. The Comprehensive Africa Agriculture Development Programme under COMESA and NEPAD incorporates climate change considerations. The Programme on Climate Change Adaptation and Mitigation in the COMESA-EAC-SADC region, a five-year initiative that began in 2010 aiming for a Unified Position on Climate Change into the post-2012 UNFCCC, is also critical. While these have influenced Zambia's climate change response strategies, local factors have also been taken into cognizance while drafting Zambia strategies on climate change.

One of Zambia's comprehensive documents on climate change issues is the National Climate Change Response Strategy (NCCRS), developed to support and facilitate a coordinated response to climate change issues in the country. Although the country has not yet finalised the policy on climate change, the strategy actually serves as the policy as it has outlined the roadmap that has been followed in dealing with climate change issues. Its key objectives include the following:

- Land (Agriculture and Forestry): To develop sustainable land use systems to enhance agricultural production and ensure food security under the changing climate
- Water: To ensure sustainable management and resiliency of water resources under the changing climate
- Health and Social Infrastructure: To protect people and health from climate change and climate variability
- Physical Infrastructure: To provide climate proof infrastructure
- Transport: To develop a less carbon-intensive and climate change-resilient transport system
- Energy: To develop a less carbon-intensive and climate change-resilient energy infrastructure and grow using low carbon path

- Mining: To develop a less carbon-intensive and climate change-resilient mining industry
- Governance: To develop an appropriate climate change governance (policy, legal and institutional) framework and
- Mainstreaming: To mainstream climate change in all the key sectors of the economy

The National Adaptation Programme of Action (NAPA) can also be regarded as one of the climate change policy documents as it is also a government product whose provisions play a role in determining the course of the climate change discourse in Zambia. The NAPA instrument arose out of a decision of COP process to accelerate adaptation action in Least Developed Countries (LDC's) and it does elaborate national priority areas for adaptation investments.

The NAPA was developed in order to:

- Contribute to the security of the helpless Zambians
- Ensure that the livelihoods of the most vulnerable households are secured against the adverse effects of climate change and their basic needs are assured
- Protect vulnerable groups from the worst impacts of risks and shocks as a result of climate change and
- Create public awareness of the adverse effects of climate change (MTENR, 2007)

Other national policies that have been put in place include the National Policy on Environment, 2007, although it covers climate change indirectly. The policy identifies strategies for climate change, placing emphasis on the need to control atmospheric pollution and to ensure that there is support to enhance the country's weather forecasting ability.

Food Security

Given that Zambia's economy is mostly agro-based, food security policies are mostly those that shape up the agriculture sector. Key among these is the National Agriculture policy (NAP), (2004 -2015), whose overall objective is to facilitate and support the development of a sustainable and competitive agricultural sector that assures food security in Zambia. In pursuit of this objective, the following constitute its specific objectives:

- To ensure national and household food security through an all-year round production and post-harvest management of adequate supplies of basic foodstuffs at competitive costs
- To contribute to sustainable industrial development by providing locally produced agro-based raw materials
- To increase agricultural exports thereby enhancing the sector's contribution to the National Balance of Payments
- To generate income and employment through increased agriculture production and productivity and
- To ensure that the existing agricultural resource base is maintained and improved upon.

Zambia is also in the process of revising the NAP due to observed limitations in enhancing food security in the country. In November 2012, the Ministry of Agriculture and Livestock produced a Draft NAP, which is yet to be finalised. Its overall objective is to facilitate and support the development of a dynamic, diversified, robust, resilient and competitive agricultural sector that assures food and nutritional security at household and national-levels and maximises the sector's contribution to GDP. Its specific objectives include the following:

- (i) To sustain increased agricultural production, productivity and value addition of major crops, livestock, forest and fisheries by comparative advantage in different agro-ecological regions in the country
- (ii) To create and enhance the sustainable use and maintenance of the existing agricultural resource base to be able to

efficiently support vibrant and resilient agricultural production systems

- (iii) To create an enabling environment, which would catalyse investment in the irrigation sector thereby, increasing production of irrigated crops
- (iv) To create an enabling environment that would facilitate efficient supply of agricultural inputs, increase private sector participation and improve the functioning of markets
- (v) To improve access to production resources and services for all categories of farmers, especially physically challenged persons, women and the youth.

In addition to the NAP, the Irrigation Policy is also a critical policy for food security. The overall objective of the Zambia irrigation policy is to have a well regulated and profitable irrigation sector that is attractive to both private investors and Zambia's development partners. This objective would be achieved through the following strategies:

- Promoting irrigation organisations and developing an adaptable legal framework to recognise, protect and regulate such organisations and their members in a gender sensitive fashion
- Specific provision in the water rights legislation that ensures equitable access by user groups as opposed to individuals
- Identifying feasible modalities for transferring state schemes to emerging farmer groups and thereafter opening up state farms for emerging farmer use
- Preparing information packs on production and processing of irrigated crops
- Improving access to post-harvest and agro-processing advice and facilities and
- Establishing and enforcing a regulatory framework that protects emerging farmers from exploitation by middlemen.

The National Seed Industry Policy is also a critical food security policy, as it is intended to ensure that the availability of seed is assured for the attainment of food security in Zambia. The overall policy objective is to ensure that quality seed of various crops is made available to farmers in an efficient and convenient manner to increase crop productivity and agricultural production. This would be achieved through ensuring the development of an effective, efficient and sustainable system of producing and supplying high quality seeds of crops to satisfy the national seed requirements. Given climate change variability, the policy provides for crop research, focussing more on strategic and long term research on seed varieties.

In addition, all food security strategies are shaped by long-term strategic plans, such as the National Long Term Vision 2030 (NLTV) and the Sixth National Development Plan (SNDP). These have also set targets that focus on food security.

Trade

Since most policies are intended to boost production, they can all be regarded as trade facilitating. However, the country has a specific policy, National Commercial Trade and Industrial Policy (NCTIP), developed in 2007 which is the main policy document governing trade in Zambia. The objectives of the NCTIP include the following:

- To stimulate and encourage value-addition activities on primary exports as a means of increasing national export earnings and creating employment opportunities
- To transform the Zambian economy into a diversified and competitive economy, which is well integrated into the international trading environment
- To stimulate investment flows into export-oriented areas in which Zambia has comparative advantages as a strategy for inducing innovation and technology transfer in the national economy

- To support the effective development and utilisation of domestic productive capacities as a means to increasing output and expanding employment opportunities
- To facilitate the acquisition of modern technology to support value-adding, industrial processes by domestic firms
- To facilitate public and private investments in testing infrastructure to support improvements in the quality and standards of Zambian products
- To assist domestic firms to increase their levels of efficiency and competitiveness, and therefore withstand increasing competition in domestic and international markets and
- To formalise, monitor and regulate domestic trade activities with a view to promoting and stimulating a vibrant domestic trading sector; particularly by ensuring fair competition in the domestic market, and also protecting the welfare of consumers.

The policy also recognises that trade could serve as a vital tool for addressing poverty reduction. In Zambia, international trade, particularly in regional markets, can contribute to raising average incomes and consumption levels of poor households, which are often engaged in agricultural production.

3

Assessment of Policy Linkages

Having discussed the policy framework as well as the linkages between trade, climate change and food security, it becomes critical to identify the extent to which these linkages are recognised by the policy frameworks.

Food Security Policies

Linkages with climate change

Since the National Long Term Vision 2030 (NLTV) largely influences food security strategies, it becomes the first port of call in assessing its linkages with climate change. Although the NLTV clearly outlines developmental goals to ensure that Zambia becomes a prosperous middle-income country by the year 2030, it fails to identify that most of the goals can be threatened by climate change, which would have also called for some long-term strategies on how to deal with it.

The NLTV is, however, conscious of some environmental and development concerns, which could have impact on climate change and has thus made provisions for addressing them. These include section 2.2 (n) under the Vision statement, where development of policies consistent with sustainable environment and natural resource management principles is mentioned. In addition, under section 3.1.4, the NLTV provides that Zambia would encourage skills training, technology diffusion and use, in an environmentally-friendly manner as a way of creating an investment climate

consistent with the socio-economic development objectives. Among some of the goals that are set to attain these objectives include ensuring that 90 percent polluting industrial facilities comply with environmental legislation. The strategies identified are insufficient to address the growing needs of climate change adaptation and mitigation that would guard against the erosion of the development and economic objectives.

The Sixth National Development Plan (SNDP), however, goes a long way in ensuring that there are linkages with climate change policy objectives. Under section 3.7, which has provisions on environment issues, the Plan specifically identifies the need for policy measures to be aligned with policies and legislation dealing with environment and climate change issues, such as the National Policy on Environment and the Environmental Protection and Pollution Control Act. Thus the Plan provides for the review of the National Policy on Environment (NPE) and Environmental Protection and Pollution Control Act to address emerging issues on climate change while legal reforms would be undertaken to domesticate some international environmental conventions and protocols.

All sector policies that have a bearing on the environment would be strengthened to promote environmental sustainability, including policies in agriculture, forestry, wildlife, water, energy, mining, land, health, construction as well as science and technology. Programmes on Environment and Climate Change mainstreaming would also be undertaken under the Plan period. These include programmes that facilitate the development and implementation of sector and provincial specific environmental integration and climate change adaptation and mitigation guidelines.

Since the National Agriculture Policy (NAP) is the main policy document that has a bearing on food security, the extent to which it speaks to linkages with climate change becomes more important of climate change objectives are to be met. The NAP has some strategies, which could serve as climate change mitigation measures, especially since it identifies the need for the promotion

of sustainable and environmentally sound agricultural practices. This would include promotion of environmental-friendly farming systems, such as conservation farming and afforestation, which could serve as mitigation measures. In addition, environmental degradation, arising from animal production activities, such as overgrazing; underground water pollution as a result of effluents from abattoirs and processing plants; air pollution due gas emissions from production units (dairy, poultry, piggery etc.) are also identified as concerns, thus NAP could be regarded as climate change conscious.

However, the NAP only covers climate change issues indirectly, as the focus is mostly on environmental protection rather than climate change compliance. The policy has no specific mention of 'climate change', neither do the objectives clearly reflect that the production systems and conditions which would be promoted by the policy would be climate change conscious. It is on this basis that a new Draft National Agriculture Policy was produced in 2012 and is presently at an advanced stage of finalisation. The 2012 Draft NAP specifically identifies the need to be in line with climate change issues as one of the main reasons for a new policy when the extant policy was expected to run until 2015. The Draft NAP acknowledges that the implementation of the NAP revealed some challenges and gaps including emerging issues, such as climate change and the country's commitment to the CAADP.

Among the guiding principles of the Draft NAP is the need to internalise responses to climate change. Among the programme components to be used to enhance the performance of the agriculture sub-sectors, under the Draft NAP would be climate change mitigation to enhance agriculture technology and input supply. As a result, the policy measures that are provided for under the Draft NAP is the promotion of awareness and mainstreaming on climate change mitigation, resilience and adaptation measures in agriculture policies and programmes. The Draft NAP thus has done better in speaking to the linkages between

climate change and food security, which underlines the importance of ensuring that the draft policy is quickly adopted and implemented.

The National Seed Industry Policy is also expected to be a useful tool for climate change adaptation, given the need to continuously explore seed varieties that are in line with the prevailing climate. Although the policy notes that events, such as floods and drought could take place, it only provides for emergency arrangements for seed requirements in the affected areas. In other words, the policy does not provide for climate change solutions to these occurrences, such that it is divorced from climate change policies. In addition, although research into new varieties is provided for under the policy, this is not provided for as something that would become necessary as a result of climate change, implying that the solutions proffered are also separated from climate change policy objectives. Thus there are limited evidences on the policy to suggest that it was developed to meet climate change eventualities, which could disrupt seed availability. It is thus necessary to ensure that the policy speak to the linkages between food security and climate change.

The same is equally true for the Irrigation Policy. Although the context of the policy is correctly identified as the dangers of overwhelming dependence on rain-fed farming when the country has suffered severe droughts and diminished crop yields, this is not adequately attributed to climate change. The irrigation policy would be expected to adequately provide for anticipated increase in demand for irrigation services due to climate change, which increase the intensity and frequency of hazards and risks. There is need to ensure that the irrigation policy is positioned as a response to climate change by ensuring that the provisions are aligned to the NCCR and the NAPA. This would play a positive role in ensuring that the policies relate to the linkages between climate change and food security.

It is important to note, however, that while policies might fail to adequately speak to the linkages with climate change, some

legislation, which would be enacted might be able to deal with the issue. For example, water constitutes an important tool for food security, given that many households and small scale farmers depend on water in dams and rivers for livelihoods. Under section 6(q) of the Water Resources Management Act, 2011, which focusses on principles governing water resources management, the management, development and utilisation of water resources taking into account climate change adaptation. Under section 8 2(b) of the Act, the Water Resources Management Authority is mandated to conserve, preserve and protect wetlands, quarries, marshlands and headwaters and take into account climate change and the challenges posed by climate change by:

- measuring, minimising and managing the impacts of climate change on water resources using effective adaptation approaches
- being proactive in adapting watershed protection, wetlands and infrastructure programmes
- developing tools, standards, guidelines and best practices to understand and measure the nature and magnitude of chemical, biological and physical effects of climate change on water resources
- applying environmental science, technology and information to guide and support proactive climate change planning and management and
- investing in climate change education on water issues and supporting the sharing of information about Government and local responses to water impacts of climate change.

Under section 81 of the Act, if there is a shortage of water for any purpose due to climate change, the Water Resources Management Authority Board might amend permits, which would have been given to users so as to reduce the quantity of water allocated or alter the use of the water specified by the permit. Thus it is also important to ensure that where policies have failed to provide for the linkages between food security and climate

change, this would be done through legislation. But since legislations are difficult to amend as they require parliamentary procedures, appropriate policy changes should always be more preferable.

Linkages with trade

As expected, the food security policies acknowledge the importance of trade, given the need for surplus food to be exported out of the country while during deficits food is imported into the country. The NAP provides for the facilitation of trade in agricultural commodities within and outside the country. It acknowledges the need to take advantage of developments within the region and abroad to put in place measures that promote fair and beneficial agricultural trade. Developments that are identified, under the policy include the New Partnership for African Development (NEPAD) through the Comprehensive Africa Agriculture Development Programme (CAADP); the Common Market for Eastern and Southern Africa (COMESA); the Southern Africa Development Community (SADC); the African, Caribbean and Pacific/European Union (ACP/UE) Cotonou Agreement and the World Trade Organisation (WTO).

The Draft NAP has actually done a better job in speaking to the linkages with trade compared to the existing policy. Section 7.8 of the Draft policy provides strategies for increasing agriculture exports, which include the following trade oriented measures:

- Promoting sustainable production to meet preferential market requirements with emphasis on quality needs of the market
- Enhancing the capacity of small scale farmers to understand operations of contractual farming of exportable commodities, such as cotton, tobacco, cashew, beef, hides and skins
- Promoting the development of cross-border trade-facilities appropriate structures and infrastructure in designated border area

- Strengthening capacity of agriculture stakeholders to advocate for increased access to preferential markets
- Broadening the diversification of agricultural products as a way of providing profitable alternatives to farmers engaged in production
- Strengthening continuous monitoring of the activities of trading partners to prevent unfair practices, for example, use of non-tariff barriers
- Strengthening the establishment of the Livestock Disease Free Zones
- Ensuring adequate sanitary and phyto sanitary standards for quality agricultural products and
- Discouraging the export of primary agriculture products and protecting local value adding industries

The irrigation policy also notes that since the effective demand in the local market is relatively small and is unlikely able to absorb the increased agricultural production arising from new irrigation development, export markets need to be developed if the country is to realise its comparative advantage in export produce. This would also involve utilising the market access to regional and international markets through various trade agreements. There is need to enhance production to be able to meet export quotas in key crops, such as coffee and other horticultural produce.

Thus the linkages between food security and trade are generally provided for under the food security policies in Zambia, implying that they could be important tools towards attainment of increased trade.

Climate Change Policies and Food Security

Linkages with food security

It is also critical for climate change policies to be conscious of the need to protect food security in their implementation frameworks. A climate change policy can make provisions that

become a burden to food security and thus reduce the capacity and potential for stakeholders to engage in agriculture. This first step is for a climate change policy to be able to identify the linkages between climate change and food security before developing strategies to deal with climate change. The National Climate Change Response Strategy (NCCRS) is able to contextualise these challenges well, under Section 4, by identifying the various avenues through which climate change can have adverse impacts on agriculture, wildlife and water resources, which all have a bearing on food security.

In addition, the NCCRS was also aligned with the NLTV and the SNDP, to ensure that it also contributes to the fulfilment of the overall development goals of the country. This is very important as this would also ensure that all policies on food security and trade that are aligned with the long term national goals would also speak the same language with the climate change policies. Under this background, the NCCRS is thus able to provide for climate change mitigation and adaptation factors without compromising food security objectives.

The policy objectives generally speak to this. For example, one of the objectives is to ensure that sustainable land use systems are developed to enhance agricultural production and ensure food security, while taking cognisance of the changing climate. Thus climate change would be factored in but at the same time without compromising the objectives of enhanced agriculture production for food security. The NCCRS also aims at ensuring that water resources are not only sustainable but resilient to the changing climate. This would thus involve mainstreaming climate change issues into the objectives of sustainable water resources, under the Water Resources Management Act. In general, the NCCRS also aims at mainstreaming climate change in all the key sectors of the economy. This implies that the strategy would not re-invent the wheel but would only ensure that while all sectors pursue their development oriented targets, they also take cognisance of

climate change objectives. Thus generally, the NCCRS speaks well to the linkages between climate change and food security.

The same analogue is equally true for the NAPA. This basically seeks to serve as a roadmap for adaptation strategies to adverse impacts of climate change while at the same time ensuring that food security related objectives that are already identified are also met. These include the national objectives of poverty reduction and the Millennium Development Goals (MDGs). The NAPA thus identifies climate change hazards, such as drought (seasonal and periodic), floods, water logging, shortened growing season and delayed on-set of the rains and then identifies possible adaptation and mitigation measures that are designed to ensure food security.

The draft Climate Change Policy also adequately speaks to the linkages with food security. It acknowledges that the agriculture sector is very sensitive to climate change and is already showing high vulnerability to climate variability. If climate change is not controlled, the draft policy acknowledges that an additional 300,000 people, most of whom are dependent on subsistence agriculture, would fall below the national poverty line by 2016, while mostly poor livestock keepers would be seriously affected by widespread water shortages. Thus strategies are identified to avoid this. As a result, the policy strategies adopted for the crop sub-sector have an objective of enhancing efficient and sustainable crop production and ensure its contribution to increased income and food security. For the livestock sector, the policy objective is to increase productivity of the sector through improved resilience to climate shocks and ensure food security and increased income. It is quite apparent that the Draft climate change policy was established with food security objectives in mind.

Thus generally climate change policies and strategies have done better in speaking to the linkages with food security compared to the other way round. This can be due to the fact that climate change policies and strategies are fairly recent, having been established when other policies were already in place, while the

food security policies were developed at a time before the climate change discussion had become too topical. In addition, the body of knowledge on climate change has been growing in the last few decades. The need is thus to ensure that food security policies speak to the linkages with climate change.

Linkages with trade

The NCCRS has made an attempt to provide for the linkages between climate change and trade. This could be attributed to the fact that the strategy was actually trade driven as it was born out of developments within the international trade debate. The NCCRS identifies the channels through which technology development and transfer could be enhanced through trade to help Zambia meet its sustainable development goals. It recognises the likely outcome of the Kyoto Protocol's CDM or its future successor, which is essential for the transfer of advanced energy technologies, such as cogeneration, geothermal, hydro and all other technologies that result in the removal or avoidance of greenhouse gas emissions.

It also acknowledges the importance of United Nations Industrial Development Organisation (UNIDO) is one of the UN bodies through which coordination of the transfer of clean technology to the developing world could be facilitated. Other technology transfer channels which the strategy recognises include the South-South transfer of technology, North-South transfer of technology through Foreign Direct Investment (FDI), and transfer through development partners' initiatives.

The draft Climate Change Policy, however, does not appear to speak to trade linkages in the manner in which it deserves. The draft policy does not acknowledge the role that international trade would play in enhancing climate change mitigation measures and neither has it made some serious attempts to mainstream international trade within the climate change implementation framework. For example, under technology transfer, the draft policy does not show that the concept of technology transfer to

fight climate change could not be separated from international trade. If the draft is passed in its current form, there would be need to ensure that it is amended to speak to the linkages between climate change and trade. However, like the NCCRS, it acknowledges the Kyoto Protocol's CDM, UNIDO and the South-South transfer of technology channels. In addition, the policies provides for measures to ensure that the management approach taken by firms is based international agreements, for which most are entered under international trade.

Trade Policy

Linkages with climate change

Given the importance with which climate change issues are now given under international trade discourse, any country's trade policy is expected to elaborate clear climate change policy measures and priorities. This is, however, not true for Zambia's NCTIP, which covers climate change issues only indirectly. Section 1.5 of the policy for example makes reference to the fact that the policy also supports the growth of environmentally-friendly industries in Zambia, in order to ensure sustainable development. In addition, the policy provides for the Government to control imports using import licenses and controls in cases where there are proven concerns, on grounds of environmental protection, among other concerns.

Under section 5.7, the policy also recognises that in the process of industrialisation and economic development, pressure is often placed on the natural surroundings and could lead to environmental degradation if not properly addressed. However, the policy notes the need to ensure that environment impact assessments should not involve burdensome processes and excessively high costs that could act as a barrier to promoting investment. As policy prescriptions, it provides for the introduction of a standard emission fee on pollutants and to

require domestic firms with heavy pollution levels to treat the adverse environmental effects of their pollutants within given timeframes, with stiff penalties being imposed for non-complying firms. Such pollutants include gas and solid waste, noise and radioactive substances.

Thus the trade policy largely has provisions on environmental protection, which are not necessarily equivalent to climate change mitigation and adaptation strategies. The policy does not provide for trade in clean technology by providing incentives or specifying how such trade would be regularised, especially the outcome of the various conventions on trade and climate change. The trade policy thus needs to be enhanced to be able to speak to the linkages with climate change.

Linkages with food security

The linkages between trade and food security are quite apparent under the trade policy. It acknowledges the need to take advantage of the geographic proximity of regional markets, which makes them attractive export destinations for products from small and medium enterprises, as well as smallholder farmers. Increased agricultural output from smallholder farmers being exported could assist in national poverty-reduction efforts. In addition, in a vibrant domestic sector it is also important to support domestic trade and improve the competitiveness of domestic firms to fight poverty. The policy thus encourages the country to utilise its trade policy to promote economic growth and diversification as a strategy towards the attainment of the existing poverty-reduction goals. Thus the linkages between trade and food security could be established from the trade policy.

Linkages between Food Security, Climate Change and Trade

	Agriculture	Climate Change	Trade
<p>Agriculture</p> <p>Climate Change</p> <p>Trade</p>	<p>National Agriculture policy (NAP), (2004 - 2015) The Policy’s overall objective is to facilitate and support the development of a sustainable and competitive agricultural sector that assures food security in Zambia.</p> <p>Irrigation Policy: The policy’s overall objective is to have a well regulated and profitable irrigation sector that is attractive to both private investors and Zambia’s development partners</p> <p>National Seed Industry Policy This is a critical food security policy, as it is intended to ensure that the availability of seed is assured for the attainment of food security in Zambia.</p>	<p>National Climate Change Response Strategy (NCCRS) This identifies the various avenues through which climate change can have adverse impacts on agriculture, wildlife and water resources, which all have a bearing on food security.</p> <p>National Adaptation Programme of Action (NAPA) This identifies climate change hazards such as drought (seasonal and periodic), floods, water logging, shortened growing season and delayed on-set of the rains and then identifies possible adaptation and mitigation measures that are designed to ensure food security.</p>	<p>-National Commercial Trade and Industrial Policy (NCTIP) This encourages the country to utilise its trade policy to promote economic growth and diversification as a strategy towards the attainment of the existing poverty-reduction goals.</p>

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	Agriculture	Climate Change	Trade
Climate Change	<p>- National Agriculture Policy (NAP): is the main policy document that has a bearing on food security has some strategies which could serve as climate change mitigation measures, especially since it identifies the need for the promotion of sustainable and environmentally sound agricultural practices.</p> <p>- National Long Term Vision 2030 (NLTV): largely influences food security strategies and has made provisions to address some environmental and development concerns which could have impact on climate change.</p>	<p>-National Climate Change Response Strategy (NCCRS): Was developed to support and facilitate a coordinated response to climate change issues in the country</p> <p>-National Adaptation Programme of Action (NAPA): is a government product whose provision play a role in determining the course of the climate change discourse in Zambia</p>	<p>-National Commercial Trade and Industrial Policy (NCTIP): makes reference to the fact that the policy also supports the growth of environmentally-friendly industries in Zambia, in order to ensure sustainable development.</p>
Trade	<p>-National Agriculture policy (NAP), (2004-2015) This provides for the facilitation of trade in agricultural commodities within and outside the country.</p> <p>-Irrigation Policy: notes that with the increased agricultural production arising from new irrigation development, export markets need to be developed if the country is to realise its comparative advantage in export produce.</p>	<p>-National Climate Change Response Strategy (NCCRS) This identifies the channels through which technology development and transfer can be enhanced through trade to help Zambia meet its sustainable development goals</p>	<p>-National Commercial Trade and Industrial Policy (NCTIP) This is the main policy document governing trade in Zambia and it also recognises that trade can serve as a vital tool for addressing poverty reduction.</p>

4

Stakeholder Awareness of Linkages

Based on interviews with some few stakeholders, it is clear that there is a very limited level of appreciation of climate change, trade and food security linkages. With the continuous changes in climate, those in the know point to the need to bring in adaptive technologies through technological transfer that would help sustain production and demand. These are issues that can be addressed by purchasing new equipment for production.

It is also clear from the stakeholders' point of view that gaps exist in the linkages of these three areas and the policies could never be perfect because climate change is an ongoing phenomenon. Some prominent gaps include lack of coordination by all stakeholders in the quest to deal with climate change issue. The need to intensify financing of intervention programmes in order to deal with climate change issues was also raised. It is generally felt that in Zambia there is inadequate planning with regards to financing of climate change, which explains why it has remained a challenge to society. Technology limitation in dealing with the new changes and challenges caused by climate change is also something that stakeholders consider a challenge in addressing the problem.

Stakeholders believe that there is need to conduct an Impact Assessment of Climate Change on food security, income generation and poverty eradication by engaging the ministry of Lands, Natural

Resources and Environment and the line Parliamentary Committee of Parliament. A clear policy on climate change also needs to be finalised in order to have a tentative guide in addressing the challenges that come with climate change.

Awareness campaigns must be intensified on the effects of climate change so that it becomes inclusive of people from the grassroots. There should generally be intensified dialogue and coordination from the general public while ensuring that the discussions are objective and not just building silos. All should take concerted efforts must be taken by everybody to ensure the issues of climate change are addressed.

5

Conclusions and Recommendations

The conclusion that could be reached from the analysis is that there are still some gaps to ensure that the policy framework in Zambia adequately reflect linkages between trade, climate change and food security. While it is important for sensitisation of critical stakeholders about the dangers of climate change and how they integrate adaptation and mitigation measures in the local actions, the important issue is also to ensure that the policy framework is adequate and informed by science and local circumstances. Although there are advanced steps in developing and finalising a standalone policy on climate change, the urgency of the issue could not be underestimated. However, the current strategies on climate change that have been developed by government could adequately deal with climate issues if properly enforced. It is acknowledged that there is growing effort to enhance strategies and ensure that they are structured in a manner that responds to resilience in trade and food security.

In addition, the linkages between food security and trade are clear and significant efforts have been made to cover this aspect under the extant policies. It is also noted that it remains critical to ensure that the identified measures are implemented, so that the targets are realised.

The study, however, has revealed some limitations with respect to the linkages between climate change, food security and trade which need to be enhanced. Thus the following recommendations would go a long way in ensuring that this happens:

- The current National Agriculture Policy has limitations as it covers climate change issues indirectly by narrowing the issues to environment protection. It is pleasing to note that the Draft NAP has corrected this and acknowledges these limitations in the current NAP. It is, therefore, important to ensure that the Draft NAP is quickly put in force to replace the existing one as a strategy towards adequately catering for the linkages between climate change and food security
- The seed policy should also provide for research into resilient seed varieties as a strategy in response to climate change. The seed policy needs to respond to climate change effects, which could disrupt seed availability by being aligned to both draft climate change policy, NCCRS and NAPA
- There is need to ensure that the irrigation policy adequately provides for anticipated increase in demand for irrigation services due to climate change by speaking to the strategies identified under the NCCRS and NAPA as well as under the draft climate change policy
- The draft climate change policy adequately speaks to food security but has limitations as far as linkages with international trade are concerned. There is a need to revise the draft to properly contextualise the discussions and debates, under international trade that have a bearing on climate change
- It is critical to ensure that the trade policy also speaks to the linkages with climate change rather than simply focusing on environmental protection. It is critical that trade in clean

technology and tools that could be useful in climate change mitigation be promoted under the trade policy. Factoring these would ensure that the trade objectives are not necessarily compromised by developments that would arise as a result of climate change and

- There is need to enhance awareness programmes on climate change among the critical stakeholders given that there is currently a dearth of knowledge on climate change mitigation and adaptation strategies, which are necessary as response tools to climate change.

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