

## Environmental and Climate Change Policy Brief Zimbabwe



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**Ulrika Åkesson,  
Gunilla Ölund Wingqvist**

**Göran Ek  
Emelie César**

## Executive Summary

This Environmental and Climate Change Policy Brief will inform Sweden's cooperation strategy process and provide analytic input to Sida's preparation of a new strategy proposal for cooperation with Zimbabwe (2016-2020). It is foreseen that the future cooperation shall focus on improved environment, limited climate impact, and strengthened resilience against environmental degradation, climate change and natural disasters, as one out of three areas.

The policy brief aims at presenting key environmental sustainability challenges and opportunities in Zimbabwe, their linkages to poverty reduction and socio-economic development. The assignment was conducted as a desk-study, based on available reports, research papers and statistics. The lack of updated environment statistics is a major challenge in Zimbabwe and should be considered when reading this policy brief.

The main environmental challenges facing Zimbabwe are: land degradation, deforestation, inadequate quantity and quality of water resources, air pollution, habitat destruction and loss of biodiversity, waste (including toxic waste), natural hazards (mainly recurring droughts), and climate change (including rainfall variability and seasonality). Two main issues that stand out are the country's challenge in *facing climate change* - General Circulation Models (GCM) indicate that most of Southern Africa, including Zimbabwe<sup>1</sup>, is likely to experience temperatures 2-4° C higher in this century compared to the 1961-1990 average – and *unregulated infrastructural development and land use* that contribute to deforestation, land degradation and habitat fragmentation.

The poverty is widespread in Zimbabwe and it is estimated that the average poverty rate exceeded 72% of the total population. In rural areas a third of the population live in extreme poverty. Manifestations of poverty in Zimbabwe include inadequate access to natural resources, including water and land, malnutrition, un-, or underemployment, unequal access to good-quality education, and lack of agricultural inputs. Climate variability and change with increased intensity and frequency of droughts and floods, negative impacts on economy, and a high prevalence of HIV/AIDS, are other factors that enhance poverty.

Zimbabwe's economy is natural resource-based and depends heavily on agriculture and mining. The potential for economic growth in Zimbabwe is closely linked with development of its natural resources including land, biodiversity and minerals.

The policy frameworks and the institutional set-up for managing environmental challenges in Zimbabwe, with a few exceptions, seem quite robust. The main problem relates to implementation and enforcement of existing legislation and policies, further hampered by a lack of good governance, including lack of transparency and accountability, and weak coordination and cross-sectoral cooperation.

Integration of environmental concerns in plans and strategies, poor capacity and coordination among law enforcement agencies, highly sectoral and compartmentalised understanding of development issues and a perceived lack of transparency and political will to enforce the laws etc., are all challenges to environmental sustainability in Zimbabwe.

Based on the findings in this brief, the Helpdesk suggest the following areas to serve as ideas for further discussions: agriculture, water, climate change adaptation, biodiversity and

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<sup>1</sup> Ujeneza Eva L., Babatunde J. Abiodun (2015):

ecosystem services, tourism, forestry, mining, human rights, environment management, disaster risk management and resilience, renewable energy as well as green economy.

Given Sida's experience from and strong commitment to rural electrification in the Power Africa programme interventions in the energy and climate change sectors could be seen as areas where a Swedish added value could benefit the development cooperation activities in Zimbabwe. But as the authors of the Policy Brief are not as close to the Zimbabwean development context as the staff at the Harare embassy and Africa department at Sida HQ we have not delved further into pointing out particular focus areas for Swedish interventions.

The environment is inseparable from the economy, poverty, health, livelihoods and food security, which is why it is important for Zimbabwe to address its environmental challenges. With the abundant natural resources in Zimbabwe, including land, biodiversity and minerals, there is a great potential for economic development and eventually poverty reduction if these resources are used in an environmentally sustainable way.

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## 1. Introduction

The Swedish Government has identified environment and climate change as one of three thematic priorities for development cooperation<sup>2</sup>. This is reinforced by the “Aid Policy Framework” (2014), which states that environmental and climate change aspects are a central point of departure for all Swedish development cooperation. An analysis of environmental and climate change aspects constitutes an important basis for a well-informed strategy process.

This Environmental and Climate Change Policy Brief will inform Sweden’s cooperation strategy process and provide analytic input to Sida’s preparation of a new strategy proposal for cooperation with Zimbabwe (2016-2020). While the formal instructions have not yet been provided by the Swedish government, it is foreseen that the future cooperation shall focus on the following areas:

- improved environment, limited climate impact, and strengthened resilience against environmental degradation, climate change and natural disasters, specifically generation of, and access to, sustainable energy, and the contribution of a green economy to productive employment and entrepreneurship;
- strengthened democracy, gender equality, and increased respect for human rights;
- improved basic health.

The purpose of the policy brief is to give the Embassy of Sweden in Zimbabwe an overview of the strategic issues to consider with regards to environment and climate change. It aims at briefly presenting key environmental sustainability challenges and opportunities in Zimbabwe, their linkages to poverty reduction and socio-economic development, in the context of the given entry points and areas of cooperation for Swedish development cooperation in Zimbabwe.

The policy brief was conducted as a desk-study in February 2016, based on available reports, research papers and statistics. The lack of updated environment statistics is a major challenge in Zimbabwe and should be considered when reading this policy brief. The ongoing preparations of Zimbabwe’s fourth state of the environment report might provide a better insight in terms of trends and status of the sector for better planning and management purposes but it remains to be seen.<sup>3</sup>

## 2. Key environmental problems, their causes and opportunities

Zimbabwe, a landlocked, tropical country in southern Africa, has abundant natural resources including land, biodiversity, and minerals. After South Africa, Zimbabwe is the most industrialised country in the SADC region, with a majority of the industries situated around the major cities. Mining and agriculture are the most significant economic sectors. The country produces over 35 different minerals in over 1,000 mines<sup>4</sup>.

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<sup>2</sup> Government communication 2013/14:131, Aid Policy Framework – the direction of Swedish Aid

<sup>3</sup> UNCT and Gov of Zim (2014)

<sup>4</sup> Spong et al. (undated)

Zimbabwe is a semi-arid country with limited water resources. Although it shares one of the world's greatest water bodies, the Zambezi River<sup>5</sup>, it does not currently supply water to the rest of the country, which is water-scarce in most parts.

Poverty is widespread and income inequality is high although stable since the mid-1990s (Zimbabwe ranks as number 22 of 144 countries in the world in terms of inequality<sup>6</sup>). Zimbabwe experienced a deteriorating economic, political and social environment since 2000, with negative impacts on poverty, food security, service delivery, etc<sup>7</sup>. Zimbabwe's economy showed real growth again in 2010.<sup>8</sup>

**The key environmental challenges** facing Zimbabwe are: land degradation, deforestation, inadequate quantity and quality of water resources, air pollution, habitat destruction and loss of biodiversity, waste (including toxic waste), natural hazards (mainly recurring droughts), and climate change (including rainfall variability and seasonality)<sup>9</sup>. The environmental challenges and their causes and drivers are summarized in Box 1.

#### **Box 1: Environmental challenges in Zimbabwe**

**Land degradation**<sup>10</sup>: Land degradation, including soil erosion and land pollution, is a serious problem in Zimbabwe with significant consequences for agricultural productivity, particularly for people living in poverty. Land degradation is *caused* by a number of factors such as: deforestation, uncontrolled veld fires, sand extraction, artisanal mining, and poor land management in general (e.g. improper wetland utilisation, over utilisation of arable and grazing land, agriculture expansion, and human-wildlife conflict).

**Deforestation**: The deforestation rate in Zimbabwe is very high, currently hovering around 1.9% (compared to the southern African average deforestation rate of 0.5%)<sup>11</sup>. Between 1990 and 2005, 21% of its forest cover<sup>12</sup> was lost and the country has no primary forests left. The main causes of the deforestation are poverty related and include: fuelwood collection and timber extraction, land clearing for cultivation, and energy for tobacco curing. Low household incomes and high costs for other types of energy are driving forces.<sup>13</sup>

**Water availability**<sup>14</sup>: Zimbabwe is a semi-arid country and water, which is a key resource, is unevenly distributed in time and space. Groundwater constitute an important source of water for both rural and urban areas, but water availability is an increasing problem. Reduced water availability is *caused* by over-extraction due to population growth, urbanisation and industrialisation, resulting in increased competition between water using sectors. Weak water governance systems compounds the situation. Zimbabwe is currently facing one of the worst droughts in a long time. In February 2016, Zimbabwe's vice president requested aid, due to severe droughts "with tens of thousands of cattle dying, boreholes drying up and dam levels falling"<sup>15</sup>.

**Water Pollution** of surface and groundwater is a concern, worsened by water stress. Water pollution is mainly caused by inadequate or non-existent treatment of municipal and industrial wastewater and is increasing due to population growth, intensive urbanisation, increased industrial activities and high exploitation of cultivable land. Key *sources* of water pollution include mining activities, industrial and manufacturing works, poorly maintained sewage treatment works in urban areas, partially treated sewage effluent, leachate from landfills, soil erosion and siltation, and fertiliser and pesticide use.<sup>16</sup>

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<sup>5</sup> The countries sharing the Zambezi river are: Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia and Zimbabwe.

<sup>6</sup> UNCT and GoZ (2014); and CIA World Factbook.

<sup>7</sup> UNCT and GoZ (2014)

<sup>8</sup> CIA World Factbook Zimbabwe

<sup>9</sup> Spong, Booth and Walmsley (undated); and CIA World Factbook

<sup>10</sup> UNCT and Gov of Zim (2014); and WWF (2015)

<sup>11</sup> World Bank (2015)

<sup>12</sup> Present forest cover of Zimbabwe is estimated at slightly below 15 million hectares, 40 % of the land area (FAO stat)

<sup>13</sup> Mharapara, I. and S. Marongwe (2010)

<sup>14</sup> FAO Zimbabwe Country Profile website; and UNEP (2013)

<sup>15</sup> The Guardian website

<sup>16</sup> Spong et al (undated)

**Air pollution** (indoor and outdoor): Urban areas are affected by outdoor air pollution from traffic and industries, while the extensive use of fuel wood is a major *cause* to indoor air pollution.

**Loss of biodiversity and ecosystem services:** Zimbabwe has a rich biodiversity, including plants, mammals, reptiles, and birds, providing important ecosystem services, livelihood opportunities and income from tourism. Despite Zimbabwe's long history of biodiversity preservation<sup>17</sup> the abundant biodiversity is being lost, *caused by*: habitat destruction from expansion of agricultural lands, timber logging, fuelwood collection, poaching, invasion of alien species, droughts, fires, and high elephant densities<sup>18</sup>. The distribution of people and productive agricultural resources is uneven, leading to problems of land degradation, where large numbers of people and livestock are concentrated on marginal lands.<sup>19</sup>

**Waste and chemicals:** Zimbabwe has local problems with heavy metals and chemicals, particularly around mining sites. Toxic chemicals, such as cyanide and mercury, are used in a significant number of mines, and metals (e.g. zinc, copper, iron, cobalt and nickel) contaminate land and water. A recent (2012) scientific assessment of the water quality in the Save and Odzi rivers concludes that the rivers are heavily contaminated from mining operations; massive siltation, chemical and heavy metal pollution has resulted in that the rivers are not suitable for human consumption.<sup>20</sup>

**Natural disasters:** Drought is the major natural disaster risk in Zimbabwe in terms of number of people affected, accounting for six out of 10 top major disasters in the country between 1991 and 2013. Flooding is the natural disaster with highest economic damage, while epidemics are most acute and result in most deaths.<sup>21</sup> There are attempts by Zimbabwe to improve handling disaster risks and integrate them further into planning, which will be explained further in section 5.

**Climate Change:** Climate change is likely to result in hotter days and fewer cold days than before. The warming trend is already established with increased annual mean surface temperature. The timing and amount of rainfall are becoming increasingly uncertain and the frequency and length of dry spells during the rainy season have increased.<sup>22</sup> Increasing temperatures of around 2.5°C by 2050 have been projected. Rainfall is predicted to decrease in all seasons.<sup>23</sup> A mapping study from 2014 highlight the following challenges associated with climate change: brain drain affecting insights into knowledge and research needs and capacity gaps, inadequate research and development facilities as well as low levels of awareness about climate change. There are also political and institutional barriers which include inadequate planning capacity and weak institutions, socio-cultural barriers (e.g. resistance to adoption of biogas cooking technologies) and financial barriers which emerge from the recent economic crisis in Zimbabwe. The financial needs are already large o handle the "business as usual" scenario and will be even greater to include the adaptation needs.

Many of the environmental challenges are interdependent and mutually reinforcing. For instance, land degradation is partly caused by deforestation, which also affects biodiversity, ecosystem services including water regulation and purification, resulting in reduced capacity to buffer against drought or floods, and so on. Climate change is expected to enhance the environmental stresses already experienced.

Commonly, the underlying causes to the environmental challenges in Zimbabwe include weak legislation, but even more importantly, weak implementation and enforcement of the existing legislation, poor institutional capacity, weak governance structures including inadequate coordination, which is underpinned by corruption<sup>24</sup>. Furthermore, many of the environmental problems are poverty induced, worsened by the political and economic difficulties during the last decade.

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<sup>17</sup> WWF (2015)

<sup>18</sup> Spong et al (undated)

<sup>19</sup> Spong et al (undated)

<sup>20</sup> MAC Mines and Communities, Zimbabwe website.

<sup>21</sup> UNCT and Government of Zimbabwe (2014)

<sup>22</sup> Chigumira (2015)

<sup>23</sup> SARUA (2014)

<sup>24</sup> Zimbabwe scores just 21/100 in Transparency International's *Corruption Perceptions Index* "Scores range from 0 (highly corrupt) to 100 (very clean)." [http://www.transparency.org/country/#ZWE\\_DataResearch](http://www.transparency.org/country/#ZWE_DataResearch)

However, there are also opportunities in tackling the environmental challenges. Poverty reduction, combined with strengthened institutional capacity, including a strong and well-enforced environmental legislation, enhanced public awareness and political willingness to tackle these problems, there is a great potential in moving in the right direction.

### 3. What are the effects of the environmental problems?

Environmental degradation and a decline in ecosystem goods and services have drastic consequences for human societies especially the poor, as they depend directly on ecosystems and their benefits. The environment is a relevant issue, inseparable from the economy, poverty, health, livelihoods, food security and climate change. The impacts of environmental problems on poverty, public health and the economy are briefly described in this section.

#### 3.1 Impacts on Poverty

For all environmental challenges there is a strong case that *vulnerable groups*, such as women and children, will suffer the most. People in rural areas under high poverty levels and dependent on natural resources are very exposed to environmental degradation and climate variability and change. *Therefore, protecting the environment is important for human development, poverty reduction and long-term economic growth.* The Millennium Ecosystem Assessment<sup>25</sup> concluded that efforts to reduce rural poverty and eradicate hunger are critically dependent on ecosystem services, particularly in Sub-Saharan Africa. Ecosystem services are of critical importance for adaptation to climate change as healthy, well-functioning ecosystems enhance natural resilience to the adverse impacts of climate change and reduce the vulnerability of people. Ecosystem-based management offers a valuable yet under-utilized approach for climate change adaptation, complementing traditional actions such as infrastructure development. In addition to protection from climate change impacts, sustaining ecosystem services also provides many other benefits to communities, for example through the maintenance and enhancement of ecosystem services crucial for livelihoods and human well-being, such as clean water and food.

In addition wise management of ecosystem services – as to promote wildlife and safari tourism - can also provide jobs and income in a country with a fragile economy and limited opportunities for formal employment. In 2013 tourism accounted for a total of 11.4% of Zimbabwe's GDP and more than 418,500 jobs<sup>26</sup> (*sic*) (direct and indirect contributions to employment and GDP).

Improving environmental quality can furthermore contribute to improved gender equality, as women in developing countries are found to be more dependent on common property resources and more vulnerable to the negative externalities of natural resource degradation<sup>27</sup>.

The poverty is widespread in Zimbabwe and it is estimated that the average *poverty rate* exceeded 72% of the total population in 2012, with highest poverty rates in rural areas (76% compared to 38% in urban areas). Over 22% of the population live in extreme poverty (30% rural,

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<sup>25</sup> Millennium Ecosystem Assessment website

<sup>26</sup> World Travel & Tourism Council (2016):

<sup>27</sup> Hallegatte et al., (2011)



6% in urban areas). Furthermore, rural poverty is more prevalent in communal<sup>28</sup> areas (79.4%) followed by resettlement<sup>29</sup> areas (76.4%).

Around 30% of Zimbabwe's population live in urban areas, and a vast majority of the rural people are engaged in agriculture (over 66% of total population)<sup>30</sup>. A household, where communal or resettlement agriculture is the main income-generating activity, is more likely to be poor or extremely poor compared to households headed by permanent or even casual employees.<sup>31</sup>

**Manifestations of poverty** in Zimbabwe include inadequate access to natural resources, including water and land, malnutrition, unemployment or underemployment, unequal access to good-quality education, and lack of agricultural inputs (in rural areas). Climate variability and change with increased frequencies of droughts and floods, negative impacts of a declining economy, and a high prevalence of HIV and AIDS, are other factors that enhance poverty.<sup>32</sup>

**Unemployment** or under-employed is an increasing problem in Zimbabwe, where 80% of the population are not formally employed, with a significant proportion employed in the informal sector.<sup>33</sup> In 2011, the unemployment rate of women was more than twice that of men<sup>34</sup>.

There is a high dependence on **fuelwood** for almost all residents of communal lands, since alternative fuels are either not affordable or not readily available, with large scale implications on the environment<sup>35</sup>.

**Food insecurity** remains high due to the combined effect of recurrent droughts, occasional floods and high unemployment. A 2014 rural livelihoods assessment report stated that a third of Zimbabwe's children are stunted due to malnutrition.<sup>36</sup> 84% of the food insecure people are in the communal areas<sup>37</sup>.

The Fast Track **Land Reform** (FTLR) programme, introduced in 2000, has been accompanied by a contraction of the economy and resulted in a plummeting agricultural productivity in Zimbabwe affecting both food security and export earnings. Statistics from the World Bank (2015) confirms that agricultural productivity in Zimbabwe is far below other Sub-Saharan African countries<sup>38</sup>. In 2004, the productivity had decreased with as much as a third<sup>39</sup>. One reason for the drop in agricultural productivity is the transferring of land from private ownership to newly resettled farmers, who lease the land from the government. The previously experienced farmers have been replaced mostly by subsistence farmers. However, compared to communal farmers, the resettled farmers are more productive due to increased access to agricultural inputs. Zikhali (2008) concludes that access to agricultural input appears to be important for poverty reduction, and that poverty in itself has negative consequences for agricultural productivity.<sup>40</sup>

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<sup>28</sup> A communal area is an area that under colonial rule was reserved for black subsistence farmers (Zikhali, 2018)

<sup>29</sup> A resettlement area is an area that has been subject to redistribution of land.

<sup>30</sup> CIA World Factbook Zimbabwe

<sup>31</sup> UNCT and GoZ (2014)

<sup>32</sup> UNCT and GoZ (2014)

<sup>33</sup> GoZ (2012)

<sup>34</sup> UNCT and GoZ (2014)

<sup>35</sup> Spong et al (undated)

<sup>36</sup> AfDB et al. (2015)

<sup>37</sup> UNCT and GoZ (2014)

<sup>38</sup> Zimbabwe's cereal yield (crop per hectare) is about half of the average yield in Sub-Saharan Africa while the agricultural productivity (value added per worker) is about a third (World Bank, 2015).

<sup>39</sup> Zikhali (2008)

<sup>40</sup> Zikhali (2008)

However, it is not only the land reform that is impacting on food security; as many as a 26% - 50% of the population live on degraded land<sup>41</sup> with major consequences on poverty and agricultural productivity. Women, children and other vulnerable groups are generally marginalised in the ownership and utilisation of natural resources and in the governance structures.

**Access to water and sanitation** is on average higher in Zimbabwe than the average in Sub-Saharan Africa, with 80% access to water (69% in rural and 97% in urban areas). However, access to sanitation is low, only 40% (32% in rural and 52% in urban areas). Furthermore, the water and sanitation coverage is unevenly distributed. Nyemba et al. (2010) shows in a study of the water sector in Bulawayo, that water scarcity and the resultant impacts were more severe in low income areas. The water distribution policy of Bulawayo city that was skewed in favour of the low-density areas, exposing poorer households to greater environmental health problems. Information about the rest of the country has not been found, but one can imagine that the situation in other urban areas is similar to that in Bulawayo.

Drought, amplified by climate change and natural phenomenon as El Niño, is the most common **natural hazard** and by far the natural hazard affecting most people: between 1990 and 2015 over 18 million people have been affected in Zimbabwe<sup>42</sup>. Until now the 2001 drought stands out as the most serious, affecting almost half of the country's population (6 million people). Women and children, single headed and child headed families are most vulnerable, and those living on marginal land. The impacts of droughts are multiple and have long lasting effects of all facets of the economy and cuts across all sectors.<sup>43</sup> The current drought appears to be very severe and is likely to have enormous impacts on livelihoods and poverty rates.

**Climate change**, which is regarded as one of the biggest threats to the people's livelihood and development in Zimbabwe<sup>44</sup>, is foreseen to have large impacts on livelihoods through impacts on agriculture and water resources, including increasing occurrence of crop failures, pests, crop disease, and the degradation of land and water resources. Zimbabwe's poorer segments of society will be disproportionately affected, as mainly the people living in poverty and extreme poverty are communal farmers. Recent vulnerability assessments show that areas regarded 'excellent' for maize will decrease from the current 75% to 55% by 2080 under the worst case scenario<sup>45</sup>. Over five million Zimbabweans (almost a third of the total population of 14 million) live in semi-arid zones, and will suffer disproportionately from the emerging impacts of climate change and variability, including natural disasters associated with extreme weather events such as droughts, periodic flooding, disease outbreaks for both human and livestock and loss of crop lands.<sup>46</sup> Research shows that climate change has already caused a shift in Zimbabwe's agro-ecological zones. Soil conditions and crop variety will be important aspects in minimising the losses.

### 3.2 Impacts on Public Health

One specific manifestation of poverty is related to health. It is estimated that 12.6 million deaths globally, representing 23% of all deaths in 2012, were attributed to environmental risk

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<sup>41</sup> UNEP (2015)

<sup>42</sup> EM-DAT Zimbabwe, website

<sup>43</sup> UNCT and GoZ (2014)

<sup>44</sup> Grantham Research Institute, Climate Change Legislation in Zimbabwe, an excerpt from the 2015 Global Climate Legislation Study, A Review of Climate Change Legislation in 99 Countries, 2015

<sup>45</sup> UNCT and GoZ (2014)

<sup>46</sup> SARUA Climate Change Counts Mapping Study: Zimbabwe Country Report, 2014

factors<sup>47</sup>. For Zimbabwe, the *environmental burden of disease* was estimated to 16% of the total disease burden in 2004, i.e. below the global average<sup>48</sup>. However, environmental aspects are interlinked with health issues in Zimbabwe: According to the health organization Riders for Health (2012), diarrhoeal diseases are the third most significant cause of death among children under five years in Zimbabwe. Malaria ranked in fifth place.<sup>49</sup> Nyemba et al (2010) confirms that there is a direct relationship between the intensity of water scarcity and the prevalence of water-related diseases.

*Natural disasters* also affect people's health. While droughts affect most people, epidemics are often more acute and result in more deaths. Zimbabwe occasionally suffers from water-related diseases. One example is the cholera outbreak in 2008, which resulted in over 4 200 deaths<sup>50</sup>. According to UNCT and GoZ (2014), the likelihood and frequency of gastrointestinal infections (cholera, typhoid and dysentery) is high throughout Zimbabwe due to *inadequate provision of safe water, sanitation*, personal *hygiene* practices and lack of resources to sustain awareness campaigns particularly in urban areas. Obviously, considering the unequal distribution of water supply and sanitation systems, the poor are more vulnerable. According to UNCT and GoZ (2014) the challenge "is exacerbated by skewed focus on preparedness and response instead of prevention and the lack of long term investment in water sanitation and hygiene (WASH) infrastructure"<sup>51</sup>.

According to WHO (2009) **48 700 people die annually** due to environmental risk factors<sup>52</sup>. Of these are 6 700 annual deaths associated with diarrhoea caused by polluted water/bad hygiene<sup>53</sup>, 3 800 deaths due to indoor air pollution, and 600 due to outdoor air pollution, see Table 1 below. Water, sanitation and hygiene also play an important role in malnutrition. Table 1 shows figures for Namibia, South Africa, Tanzania and Zambia for comparison. However, the figures should be interpreted with great care, especially in the comparison with other countries, as the poverty rates in Zimbabwe has not improved since the beginning of the millennium while many of the other countries have both reduced poverty and improved access to water as a part of their efforts to fulfil MDG 7.

*Indoor air pollution* is a major problem in many developing countries, and over 4 million people globally die prematurely from illness attributable to the household air pollution from cooking with fuel wood. More than 50% of premature deaths due to pneumonia among children under 5 are caused by the particulate matter (soot) inhaled from household air pollution. This desk study has not been able to find information on the usage of fuelwood in Zimbabwe, but World Bank (2015) data indicates that 64% of the total energy is produced from biofuels and waste in Zimbabwe, which is higher than the Sub-Saharan average of 58%. This could possibly be interpreted that the use of fuel wood is more widespread, with potentially high effects on indoor air pollution and respiratory diseases, especially for women and children.

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<sup>47</sup> Prüss-Ustün et al (2016)

<sup>48</sup> WHO (2009). Zimbabwe country statistics (data from 2004 and onward). WHO website April 2016 [http://www.who.int/quantifying\\_ehimpacts/national/countryprofile/zimbabwe.pdf](http://www.who.int/quantifying_ehimpacts/national/countryprofile/zimbabwe.pdf)

<sup>49</sup> The top five causes of death among children under five years: i) Neonatal; ii) HIV/AIDS; iii) Diarrhoeal diseases; iv) Measles; and v) Malaria (Riders for Health, 2012)

<sup>50</sup> EM-DAT Zimbabwe, website

<sup>51</sup> UNCT and GoZ (2014)

<sup>52</sup> Estimates based on Comparative Risk Assessment, evidence synthesis and expert evaluation for regional exposure and WHO country health statistics 2004 (WHO, 2009).

<sup>53</sup> This figure only includes diarrhoeal diseases. Other water related diseases e.g. river blindness are not included in the estimates. Hence, the total number of deaths related to hygiene, water and sanitation is higher

**Table 1. WHO estimated deaths & DALYs attributable to selected environmental risk factors**

WHO Estimates	Water Sanitation & Hygiene		Indoor air pollution		Outdoor air pollution	
	Diarrhoea deaths/ year	Diarrhoea DALYs/ 1000 capita per year	Deaths/ year	DALYs /1000 capita per year	Deaths/ year	DALYs/ 1000 capita per year
Namibia	200	2,5	100	0,9	<100	0.1
South Africa	12 300	8	3 200	1,3	1 100	0,2
Tanzania	32 700	27	18 900	16	1 200	0,4
Zambia	12 700	38	8 700	26	1 100	1,4
<b>Zimbabwe</b>	<b>6 700</b>	<b>16</b>	<b>3 800</b>	<b>8</b>	<b>600</b>	<b>0,5</b>

Source: WHO Public Health & Environment (2009). Estimates based on national exposure and WHO country health statistics 2004

**Mining** activities are associated with environmental pollution with potentially severe health impacts and high concentrations of toxic waste, chemicals and heavy metals in certain locations can have severe environmental health impacts. In Zimbabwe, zinc, copper, iron, cobalt and nickel contaminates water resources. Excessive exposure to iron can, for instance, result in severe stomach pains and the damaging of internal organs, especially the brain and liver. Excessive intake of zinc can lead to neurological damage, anaemia, bone marrow failure and damage to the central nervous system, while high exposure to nickel has some negative health effects such as skin rash, asthma-like reactions, bronchitis and poor lung function.<sup>54</sup> Cyanide and mercury, other highly toxic chemicals often utilised in mining, are associated with a number of health effects such as kidney and brain damage, skin rashes, gene damage and failure of the central nervous system among other detrimental health failures. Properly functioning wastewater treatment plants at industrial sites are crucial to reduce the pollution.

Largely as a response to drought and hunger, at least one million Zimbabweans, especially in the drier parts of the country, have taken to **artisanal / small-scale mining** (ASM) as a source of livelihoods. ASM is often associated with hard, unregulated work and is dangerous when mercury is used (which is most often the case for gold panning). It is estimated that over 70% of small-scale miners have some level of mercury poisoning.<sup>55</sup> As an example of water pollution from mining, a study has shown that the water in the Save River is so heavily contaminated, so it is no longer suitable for domestic consumption<sup>56</sup>.

### 3.3 Impacts on Economic development

Zimbabwe's economy is natural resource-based and depends heavily on **agriculture** and **mining**. The potential for economic growth in Zimbabwe is closely linked with development of its natural resources. With population growth, the aspiration for higher standards of living and increasing demands both at national and global level, the pressure on Zimbabwe's natural resources will inevitably increase. *Zimbabwe must balance the need of making productive use of its natural resources with maintaining its asset base* through development investments.

<sup>54</sup> MAC Mines and Communities, Zimbabwe website

<sup>55</sup> The Zimbabwean, website

<sup>56</sup> The Africa Report, website

In 2013, agriculture constituted about 12% of the GDP while employing 66% of the labour force. Mining made up around 10% of the GDP but offers limited employment opportunities. The mining sector constitutes around 65% of export earnings, and agriculture 28%.<sup>57</sup>

The mining sector operates below capacity amid a host of challenges, including depressed metal prices, lower capital and Foreign Direct Investment (FDI) flows, high cost structures, sub-optimal royalties and power shortages.<sup>58</sup> The mining industry accounts for over a tenth of GDP and nearly half of export revenues. Gold, platinum, nickel, asbestos, diamonds and coal are some of the important minerals extracted.<sup>59</sup>

The mining sector in Zimbabwe is heavily affected by exogenous factors. The revenues are declining. The average revenue generated by the mining sector since 2011 is \$2 billion which declined to \$1,8 billion in 2015<sup>60</sup> The industry testifies that the decline in revenues is due to low output and the subdued international commodities prices among other factors.

In Zimbabwe the mining sector has been the backbone of the economy since 2009 when the country dollarised. Mining generates income and foreign exchange through exports and stimulates local economies through local purchase of inputs.

Income from the mining sector activities is spent on domestically produced services, tax revenue which is available to fund education health and roads electricity and to enhance infrastructural development, capital expenditure and direct and indirect employment .

After the initiation of the Fast Track Land Reform (FTLR) programme in 2000 the agricultural productivity fell significantly. Zimbabwe, who used to be a substantial exporter of agricultural products and self-sufficient in foodstuffs, became an importer of food: in 2012 USD731 million of food was imported (11% of total imports)<sup>61</sup>.

The agricultural sector has picked up and the growth in the sector helps to counterbalance the decrease in the mining sector, due to falling mineral prices. Tobacco production increased significantly in 2014 as the number of growers and the acreage increased. The increase in producer prices also boosted sales prospects for the 2014/15 agriculture season, and production of the main crops – maize, tobacco and cotton – is expected to remain on an upward trend. However, also the agricultural sector is vulnerable, particularly to climate variations and change, over utilization, and inadequate water management practices.

**The manufacturing sector** dropped between 2011 and 2014: according to the African Economic Outlook for Zimbabwe, at least 4 610 companies closed down during this period, resulting in a loss of 55 443 jobs. On top of this, more than 80% of workers are employed in the informal sector.<sup>62</sup>

At the national level the **contribution of biodiversity to the economy** of Zimbabwe still has to be adequately valued. However, a 2012 quantification study done by the Ministry of Environment, Water and Climate showed that biodiversity contributed between USD42 million and USD49 million in export earnings from game products such as skins, hides, and trophies. The same study reported that export earnings from biodiversity products and photographic safaris were estimated by the Reserve Bank of Zimbabwe at USD96.95 million.

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<sup>57</sup> AfDB et al (2015)

<sup>58</sup> AfDB et al. (2015)

<sup>59</sup> Utrikepolitiska institutet

<sup>60</sup> The Herald

<sup>61</sup> Professor Tony Hawins, Commercial Farmers Union of Zimbabwe, website

<sup>62</sup> AfDB et al. (2015)

*Tourism* is another important sector which is heavily dependent on maintained environmental quality and biodiversity, as well as access to water supply, sanitation, electricity and other infrastructure and services.<sup>63</sup>

At the regional level, a recent economic valuation study in the Zambezi River Basin shows that the *value of the ecosystem services* in the Zambezi river system is astonishing. The study estimates that the annual total value of river-dependent ecosystem services in the Zambezi delta is between USD930 million and USD1.6 billion.<sup>64</sup> Agriculture, fisheries, livestock, tourism, and domestic water supply are included here.

The right to private *property* is an important part of Zimbabwe's Bill of Rights in the new constitution; it is guaranteed and protected. There have, however, been media reports on farm evictions targeting white-owned farms during the course of the year 2014. Insecure tenure negatively affects the incentive for businesses to invest in the country, and it prevents farmers from making long-term investments to improve productivity or manage commons.

The UN disaster database lists number of affected people, number of deaths, as well as estimated costs of total damage of certain *natural hazards* (see Annex 1 for more details)<sup>65</sup>. While droughts affect most people, flooding is by far the most costly natural hazard in Zimbabwe in terms of total damage. Between 1990 and 2015, flooding and storms accounted for over USD297 million, while damage costs for droughts amounted to USD50 million (costs of epidemics are not estimated).

In November 2014, the EU *lifted economic and trade restrictions* against Zimbabwe, which is likely to result in a normalisation of relation and resumption of development and finance co-operation. The decision was made after improvements in the political environment after the adoption of a new constitution and peaceful elections in July 2013.<sup>66</sup>

## 4. Policy framework and institutional capacity for managing environmental challenges

### 4.1. Integration of environment in the policy framework

The newly revised *Constitution of Zimbabwe* from 2013, gives every person environmental rights that include the right: a) to an environment that is not harmful to their health or well-being; and b) to have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that: i) prevent pollution and ecological degradation; ii) promote conservation; and iii) secure ecologically sustainable development and use of natural resources while promoting economic and social development. Thus, the Constitution caters for the right to a clean environment, access to safe water and states that pollution must be prevented. The Constitution further stipulates that the 'State must take reasonable legislative and other measures, within the limits of the resources available to it, to achieve the progressive realisation of the rights set out in this section'.

The Constitution states that an *Environmental and Social Impact Assessment* shall be performed by project developers, where impacts on livelihoods, ecology and cultural rights shall be described and assessed.

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<sup>63</sup> UNCT and GoZ (2014)

<sup>64</sup> NEPAD website

<sup>65</sup> EM-DAT Zimbabwe website

<sup>66</sup> AfDB et al. (2015)

A lack of strict regulated *mining* sector results in environmental degradation and pollution of toxic and/or hazardous substances with severe consequences on human and environmental health. However, the legal and fiscal systems in place to regulate the mining sector and mineral resources are inadequate. The Mining Act from 1961, focuses on extraction “with no regard for sustainable development”<sup>67</sup> and fails to acknowledge the role of other than state actors and private mining companies in the mining sectors, ignoring community organisations and ASM actors. An assessment of the draft Minerals Policy in 2014 concludes that the policy improves the mining Act’s weaknesses. It includes provisions for transparency and accountability through adoption of the Extractive Industries Transparency Initiative, and that it recognises the role of other than traditional mining actors.<sup>68</sup> The Zimbabwe Environmental Law Association (ZELA) recommends that impact on human rights (including gender) should be included in the environmental and social impact assessment to be performed prior to development.

The Environmental Management Act of 2002 also recognises environmental rights as human rights. Also Zimbabwe’s overarching development plan, “Zimbabwe Agenda for Sustainable Socio-Economic Transformation”, was crafted to *achieve sustainable development and social equity* which will be largely propelled by the exploitation of the country’s human and natural resources.<sup>69</sup> In addition to that, there are several relevant acts like the Parks and Wildlife Management Act, The Forestry Act, The Communal Lands Forestry Produce Act, Environmental Management Act, the Environmental Impact Assessment legislation and the Water Act, which should assist Zimbabwe in its environmental governance.<sup>70</sup>

The current government initiatives towards mainstreaming environment at the *local levels* through the Environmental Management Agency seem commendable. The development of the Local Environmental Action Plans when implemented, enhance the conservation and sustainable use of the natural resources as required by the Biodiversity Convention. In addition, the Draft Model By-laws on “Environment and Natural Resources Conservation” for adoption by Rural District and Urban Councils contain measures aimed at regulating and controlling the indiscriminate cutting of trees, burning of vegetation, invasive alien species, protection of wetlands and watercourses, air pollution, solid and effluent waste management, genetic resources, hazardous substances and toxic chemicals among others.<sup>71</sup>

When it comes to *climate change*, Zimbabwe signed and ratified the UNFCCC in 1992. It has since submitted two national communications, in 1998 and 2013. The government has renamed the previous Ministry of of Environment and Natural Resource Management to the Ministry of Environment, Water and Climate and is developing a National Climate Change Response Strategy. The draft strategy of 2013 includes a national action plan for adaptation and mitigation, analysis of strategy enablers, climate change governance and implementation framework. Climate change considerations have also been incorporated into some aspects of development and growth planning, like the Medium Term Plan (MTP) of 2011-2015.<sup>72</sup>

For climate related *Disaster Risk Reduction (DRR)*<sup>73</sup>, the government is the main player when it comes to coordination through the Civil Protection Unit, which includes key agencies

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<sup>67</sup> Dhliwayo (2014)

<sup>68</sup> Dhliwayo (2014)

<sup>69</sup> GoZ INDC (2015)

<sup>70</sup> WWF (2015)

<sup>71</sup> UNCT and GoZ (2014)

<sup>72</sup> UNCT (2014); WWF (2015; and Grantham Research Institute (2015).

<sup>73</sup> Disaster Risk Reduction (DRR) aims to reduce the damage caused by natural hazards like earthquakes, floods, droughts and cyclones, through an ethic of prevention.

in charge of disaster early warning response and recovery. Seasonal forecasts of crop yields and rangeland conditions are coordinated under the drought mitigation strategy framework.<sup>74</sup> Zimbabwe's efforts towards Disaster Risk Management (DRM)<sup>75</sup> are informed by the global, regional and national policy frameworks. At a global level, the country is signatory to the 2005- 2015 Hyogo Framework for Action which requires governments to strengthen DRM governance, risk and early warning information, disaster education, reduction of underlying risks and emergency preparedness and response. At a national level, the DRM Strategy is premised on the draft DRM Bill and draft DRM Policy which will transform the Department of Civil Protection to the Department of Disaster Risk Management. The Draft DRM Bill and Draft DRM Policy give authority to the Department of Disaster Risk Management Principal Director to establish and coordinate the development and implementation of a National DRM Strategy in order to minimize vulnerability to disasters triggered by natural, human made, environmental and radiological hazards. DRM need further technical support and strengthening. DRM specifically implies elements of information management, prevention, mitigation and strengthening resilience, preparedness and response and early recovery. It has been recommended that the Government pulls together resources and technical support to support the implementation of the DRM strategy and Bill. That will help reduce the impact of disasters, improve data management for preparedness and recovery, and increase the overall resilience of the nation. Challenges affecting Disaster Risk Management stem from a lack of integrated information management system, lack of a systematic framework for capturing drought losses and impacts, limited awareness, lack of a comprehensive social protection policy that integrates post-disaster recovery, lack of sectoral policies and strategies that address chronic food insecurity regions.<sup>76</sup>

## 4.2 Governance, implementation and enforcement

The policy frameworks and the institutional set-up for managing environmental challenges in Zimbabwe, with a few exceptions, seem quite robust. The main problem relates to **implementation and enforcement** of existing legislation and policies, further hampered by a lack of good governance, including lack of transparency and accountability, and weak coordination and cross-sectoral cooperation.

The problem of enforcement is a key question in tackling the environmental challenges in Zimbabwe, due to the lack of human and financial resources and the difference in interpretation of the statutes across government institutions. Low levels of awareness amongst the judiciary and the police are other factors leading to challenges of implementation and enforcement.

Integration of environmental concerns in plans and strategies, poor capacity and coordination among law enforcement agencies, highly sectoral and compartmentalised understanding of development issues and a lack of transparency, accountability and political will to enforce the laws etc., are all challenges to environmental sustainability in Zimbabwe.<sup>77</sup>

This is a particular concern in relation to environmental and social impacts from **mining** as the consequences are so grave on human and environmental health. The **EIA regulation** is

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<sup>74</sup> GoZ INDC (2015)

<sup>75</sup> Disaster Risk Management (DRM) is the systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster.

<sup>76</sup> UNCT and GoZ (2014)

<sup>77</sup> UNCT and GoZ (2014)



poorly implemented; the EIA reports lack detailed assessment of the impacts from the mining on ecology, livelihoods and cultural rights of communities. According to the Zimbabwe Environmental Law Association, “the government has abdicated its duty to protect, promote and uphold the rights of the people and has become complicity in repressing rural and poor communities”<sup>78</sup>. ZELA warns for the “natural resource curse scenario.

It is unclear which Government agency that has the mandate to coordinate environmental information systems in Zimbabwe. The Institute of Environmental Studies at the University of Zimbabwe has taken a lead in establishing a SADC regional network for training in environmental issues. The environmental technical community is small, and well networked through personal contacts.<sup>79</sup>

Regarding the executive branch of government, a number of external accountability institutions and mechanisms exist. Nevertheless, their operations are hampered by an inadequate allocation of resources. Overall, policy uncertainty has increased the risk premium attached to investing in Zimbabwe.<sup>80</sup>

## 5. Other issues

### 5.1 Green economy - Lessons learnt from green economy/green growth strategies in Kenya, South Africa and Ethiopia

Climate change, land degradation, deforestation, water pollution and lack of access to water pose significant risks to a country like Zimbabwe and its possibility to attain sustainable development. In addition driving forces such as high population growth, rapid urbanisation, and economic growth put additional pressures on the country’s natural resources and environmental quality. However, rightly managed, economic growth also constitutes an opportunity to reduce environmental pressures and a source of financing for much needed environmental investments.

According to the OECD study “Putting Green Growth at the Heart of Development - Summary for Policymakers”<sup>81</sup> there are different approaches to addressing the green growth concept<sup>82</sup>. Some are focusing on setting out the vision and use of planning tools to integrate green growth, others on policy reform and implementation, and others on developing the human and institutional capacities for good governance. Below follows examples of three countries attempts to move towards a greener growth; Ethiopia, Kenya and South Africa.

***Ethiopia’s*** Climate-Resilient Green Economy Strategy (CRGE) <sup>83</sup>, launched in 2011, provides a vision, high-level commitment and constitutes important initiatives to promote resource efficient, low-polluting alternatives to business-as-usual economic growth. It builds on an investment plan of over 60 initiatives that are, or can be, turned into financed projects. While building a climate-resilient green economy, Ethiopia’s vision is to achieve middle-income status by 2025. Thematically the investment plan (of +60 initiatives) covers four different areas of work pillars of work: (i) Improving crop and livestock production practices, (ii) protecting

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<sup>78</sup> ZELA website

<sup>79</sup> FAO website

<sup>80</sup> AfDB et al. (2015)

<sup>81</sup> OECD (2013)

<sup>82</sup> Green growth presents a new approach to economic growth that puts human well-being at the centre of development, while ensuring that natural assets continue to provide the resources and environmental services to support sustainable development. The concept of green growth will help to achieve sustainable development, but is narrower in scope, and provides a policy agenda that can help achieve concrete, measurable progress at the interface of the economy and the environment.

<sup>83</sup> Federal Republic of Ethiopia (2011)

and re-establishing forests, (iii) expanding electric power generation from renewable sources and (iv) leapfrogging to modern and energy-efficient technologies. The CRGE strategy is seen as an opportunity for Ethiopia as it focuses on certain critical natural resource endowments, and addresses (socio-economically and environmentally) linked risks facing the country with a comprehensive approach. It identifies low-cost measures, and relies (to a large extent) on attracting international and private finance.

One of the crucial factors to reach the target of the CRGE is a sustainable (economically, socially and environmentally) private sector development. The recently adopted Ethiopian second Growth and Transformation Plan aims at maintaining rapid and sustainable economic growth and also focuses on transforming the economy. Ethiopia is now moving towards a more diverse economy with investments in commercial agriculture and at the same time the country is also attempting to move beyond agriculture encouraging other industrial investments with large focus on the manufacturing sector. However, in this regard the country is also facing many challenges in terms of low awareness, lack of capacity, policy gaps, and lack of new technology and technological innovation. There are gaps between the environmental commitments made and the actual implementation to improve environmental outcomes. Furthermore, existing policy gaps leads to unsustainable use of natural resources and it inhibits the creation and adoption of new technologies which will hamper Ethiopia's goal to move towards a green economy. For example, expansion in the agricultural sector requires policies that are up to date with the current situation to make sure that commercial farming are being done sustainably. Moreover, there are no environmental economic policy instruments in place to provide incentives for investments in greener technologies and less use of environmentally harmful substances.

**Kenya** Green Economy Strategy and Implementation Plan (GESIP)<sup>84</sup>, draft as of May 2015, seem to focus on policy reform and implementation. The strategy focuses on 5 areas: (i) promoting sustainable infrastructure development, (ii) building resilience, (iii) sustainable natural resource management, (iv) promoting resource efficiency and (v) social inclusion and sustainable livelihood. The areas of work has been identified through a participatory and consultative process and it also mentions the importance of consistency with the SDGs. The strategy describes the definition of green economy in the Kenyan context i.e. a shift towards a development path that promotes resource efficiency and sustainable management of natural resources, social inclusion, resilience, and sustainable infrastructure development (no global consensus on what green economy concept entails exist). It is too early to say anything concerning lessons learnt from Kenya with regard to the GESIP. It remains to be seen if the GEISP is yet another visionary document or a roadmap resulting in concrete actions which will support Kenya in moving towards a greener economy.

**South Africa** Green Economy Strategy<sup>85</sup> includes mitigation targets, a large section on green jobs and the benefits and several key sectors expected to drive SA's Green Economy. Also, it identifies nine key focus areas for implementation (see Annex 2). The Strategy was guided by the outcomes of the national Green Economy summit in 2010 and is also part of larger plan for the country: National Strategy for Sustainable Development and Action Plan<sup>86</sup>.

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<sup>84</sup> Kenya (2015)

<sup>85</sup> Republic of South Africa, about green economy website

<sup>86</sup> Republic of South Africa, about National Strategy for Sustainable Development and Action Plan website

The multiple environmental risks to human well-being faced by developing countries stem from: 1) unsustainable natural resource exploitation; 2) lack of access to food, water and energy and a lack of basic infrastructure; 3) deadly air and water pollution in a context of rapid urbanisation and population growth; 4) the large share of rural people's livelihoods dependent on natural resources; and 5) high vulnerability to climate change impacts.<sup>87</sup> Many of these risks are common for the three countries.

It could be interesting to further explore the possibilities to carry out an Environmental Performance Review (EPR) in Zimbabwe<sup>88</sup>. Made by OECD for many countries but not yet for any African countries. However, for example, Tanzania has made a public environment expenditure review (PEER). It was conducted in 2004 and compared the government's real levels, trends and distribution of environmental expenditure to the ideal levels required to meet the country's linked environmental and poverty reduction objectives. By demonstrating the value of environmental investment for livelihoods, it contributed to a fivefold increase in the environment authority's budget in 2006 (Markandya *et al.*, 2006).

## **5.2 Sustainable energy<sup>89</sup>**

### ***Energy supply***

Energy as of 2012 is primarily supplied by biofuels and waste (66.1%), followed by coal (21.6%), oil (7.4%) and hydropower (4.9%). Electricity is produced by hydropower (59%) and coal (41%). Most rural areas face wood fuel shortages due to land use change to agricultural use and unsustainable firewood harvesting. Zimbabwe has 12bn metric tonnes of coal resources and approximately 40 terra cu ft. of potential coal bed methane (CBM), and 37% of total households have access to the grid electricity from power lines. There is a significant gap between urban and rural households, with 83% of urban homes having access to the grid and just 13% in rural areas.

The National Energy Policy (2012) published by the Ministry of Energy and Power Development (MOEPD), encourages Independent Power Producers (IPPs) to develop renewable sources of energy (biomass, hydropower, liquid biofuel, animal draught power, solar and potentially geothermal). The National Energy Policy also provides that the MOEPD will initiate the process of developing a Rural and Renewable Energy Act to establish Rural Energy Fund, which would promote energy services in rural areas using renewable energy. The policy also recommends establishing an Energy Research Council to promote research on the use of renewable resources. The Ministry of Energy and Power Development is establishing a regulatory board to regulate the energy sector. This change will take place once the draft Energy Regulatory Bill goes through reading and adoption. This will amend the Petroleum Act and the Electricity Act so that a single board regulates petroleum industry, electricity sector and any other energy resources.

### ***Energy demand***

Just 6% of total electricity is consumed by rural households, compared to 73% by urban households, and firewood is a very important source of energy in rural areas. The National

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<sup>87</sup> OECD (2013)

<sup>88</sup> The Environmental Performance Reviews (EPRs) identify good practices and make recommendations to improve the reviewed country's environmental policies and programmes. <http://www.oecd.org/env/country-reviews/reviewingenvironmentalperformance.htm>

<sup>89</sup> Data regarding sustainable energy from Government of Zimbabwe (2012b).

Energy Plan provides that the Government will develop a comprehensive household energy plan to tackle the inefficient use of energy, as well as addressing shortages and the affordability of energy. The Government has proposed supplying 4.5m compact fluorescent light bulbs and introducing a prepaid metering system as ways to improve energy efficiency and reduce peak demand. The National Energy Policy notes the importance of improving energy efficiency in the household, transport and agriculture sectors, though this is primarily motivated by cost and supply rather than climate change concerns. The Policy calls for the promotion of energy efficiency across all sectors, for investment in energy efficiency and conservation programmes, for energy efficiency standards and best practices, to promote demand-side management technology production and transfer, and for encouraging farmer-training programmes to include energy efficiency and planning training

### **5.3 Zimbabwe's Intended Nationally Determined Contribution**

Zimbabwe's Intended Nationally Determined Contribution (INDC)<sup>90</sup> was submitted to the United Nations Framework Convention on Climate Change (UNFCCC) in 2015. The document clarifies that the country seeks to build resilience to climate change whilst ensuring sustainable development in recognition of its climate change vulnerability and national circumstances. In presenting its INDC, Zimbabwe seeks to contribute to the global ambitious goal of limiting temperature rise to below 1.5° C which was decided on at the COP 21 Climate summit in Paris. Given the country's geographic location, development context and low carbon footprint the INDC underlines that the main climate change thrust remains adaptation and poverty reduction. However, strategically beneficial mitigation actions present a good opportunity for reducing greenhouse gas emissions and at the same time enhancing socio-economic growth and improving livelihoods, in particular when such action is supported by finance, capacity-building, technology development and transfer. The country's vast potential for renewable energy production such as hydropower and solar, which combined with energy efficiency and other related environmentally sound projects, can establish a "double dividend" where Zimbabwe can both achieve a successful poverty alleviation and increase the low carbon energy access for its citizens.

Given the national focus on adaptation, the INDC lists a lot of activities in this field that will reduce vulnerability and increase resilience to negative climate change impacts. Encouraging adapted crop and livestock development and farming practices as well as strengthening management of water resources and irrigation in the face of climate change are two important actions in order to achieve these objectives.

The Mitigation Contribution for Zimbabwe is given as 33% below the projected "Business As Usual" energy emissions per capita by 2030 compared to 2020.

### **5.4 Sustainable Development Goals**

On 1 January 2016, the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development – adopted by world leaders at the United Nations Sustainable Development Summit 25 - 27 September 2015 in New York – officially came into force (see Table 2 for a list of the SGDs). Over the next fifteen years, with these new Goals that universally apply to all, countries will mobilize efforts to end all forms of poverty, fight inequalities and tackle climate change, while ensuring that "no one is left behind".

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<sup>90</sup> GoZ INDC (2015)

<sup>91</sup> UN SDG Summit, website

The new SDGs<sup>92</sup> are unique in that they call for action by all countries, poor, rich and middle-income to promote prosperity while protecting the planet. They recognize that ending poverty must go hand-in-hand with strategies that build economic growth and addresses a range of social needs including education, health, social protection, and job opportunities, while tackling climate change and environmental protection.

All the SDGs are *interlinked and interdependent*, co-created solutions for pathways forward that transform how we plan, produce, consume and organize society are needed. No goal can be achieved by actions only implemented in the “silo” of its own sector.

**Table 2. The seventeen Sustainable Development Goals**

SDG	Description
<b>Goal 1: No poverty</b>	End poverty in all its forms everywhere
<b>Goal 2: Zero hunger</b>	End hunger, achieve food security and improved nutrition and promote sustainable agriculture
<b>Goal 3: Good health and wellbeing</b>	Ensure healthy lives and promote well-being for all at all ages
<b>Goal 4: Quality education</b>	Ensure inclusive and quality education for all and promote lifelong learning
<b>Goal 5: Gender equality</b>	Achieve gender equality and empower all women and girls
<b>Goal 6: Clean water and sanitation</b>	Ensure access to water and sanitation for all
<b>Goal 7: Affordable and clean energy</b>	Ensure access to affordable, reliable, sustainable and modern energy for all
<b>Goal 8: Decent work and economic growth</b>	Promote inclusive and sustainable economic growth, employment and decent work for all
<b>Goal 9: Industry, innovation and infrastructure</b>	Build resilient infrastructure, promote sustainable industrialization and foster innovation
<b>Goal 10: Reduced inequalities</b>	Reduce inequality within and among countries
<b>Goal 11: Sustainable cities and communities</b>	Make cities inclusive, safe, resilient and sustainable
<b>Goal 12: Responsible consumption and production</b>	Ensure sustainable consumption and production patterns
<b>Goal 13: Climate Action</b>	Take urgent action to combat climate change and its impacts
<b>Goal 14: Life below water</b>	Conserve and sustainably use the oceans, seas and marine resources
<b>Goal 15: Life on land</b>	Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss
<b>Goal 16: Peace, justice and strong institutions</b>	Promote just, peaceful and inclusive societies
<b>Goal 17: Partnership for the goals</b>	Revitalize the global partnership for sustainable development

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<sup>92</sup> UN SDG 17 goals, website

Chapter 7.2 describes how the environmental challenges in Zimbabwe are linked to the SDGs and could be addressed by Sida.

## 5.5 Human rights and environment & climate change

According to the United Nations Environment Programme (UNEP) and the Office of the High Commissioner for Human Rights (OHCHR) there are three main dimensions of the *interrelationship between human rights and environmental protection*:

- The environment as a prerequisite for the enjoyment of human rights.
- Certain human rights, especially access to information, participation in decision-making, and access to justice in environmental matters, as essential to good environmental decision-making.
- The right to a safe, healthy and ecologically-balanced environment as a human right itself.<sup>93</sup>

The impacts of *environmental degradation and climate change* on land, freshwater resources, ecosystems and human settlements are already undermining access to clean water, food, shelter and other basic human needs. The impacts constitute a serious interference with the exercise of *fundamental human rights*, such as the rights to life, health, food, housing and adequate standard of living. There are obligations of governments and private actors to respond to these impacts in terms of procedural obligations (that the affected public is informed about impacts, involved in public decision and given access to administrative, judicial and other remedies). Then there are substantive obligations for all governments to protect human rights from harm related to the environment and climate, respond to core drivers, cooperate internationally, address transboundary impacts and safeguard human rights in all mitigation and adaptation activities. States also have unique obligations with respect to certain groups, including women, children and indigenous people. Private actors also have obligations to address the human rights implications of climate change, and should refer to the UN Guiding Principles on Business and Human Rights.<sup>94</sup>

As described in section 5, the newly (2013) adopted *Constitution* in Zimbabwe, guides the State to formulate and implement laws and policy decisions that include environmental, economic and social rights. The Constitution embraces environmental rights and encourages environmental protection. The section on the right to life is well supported by other rights such as environmental rights, rights to health, water and sanitation. There is also a section which says that every person has the right to an environment that is not harmful to their health or wellbeing, and that every person has the right to have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and use of natural resources while promoting economic and social development. Finally the right to healthcare and right to water and sufficient food are also addressed in the Constitution.<sup>95</sup>

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<sup>93</sup> UNEP, website

<sup>94</sup> UNEP (2015)

<sup>95</sup> Chigumira (2015)

Hence, in the case of Zimbabwe there is potential to use the Constitution to claim rights related to environment with strong links to human rights. For example if an environmental activist in Zimbabwe is arrested because the person is protesting against establishment of a factory or mining industry affecting the ability for agriculture, access to water, fishing, etc, that person can then claim that it is in the Constitution that all people in Zimbabwe have the right to an environment that is not harmful to their health or wellbeing etc. This has clear links to the poverty perspective including vulnerability and involves both freedom of expression, the right to organize, the right to participation, the right to access to information and all based and started with claiming environmental rights.

There are a number of ways to *support the interaction between human rights and environment & climate change*. The human rights based approach (HRBA) provides a good basis to look further into interaction between human rights and environment & climate change. Sida's application of HRBA entails a focus on both *which* human rights to target, and *how* to do it in a way that is based on and leads to the four human rights principles of; non-discrimination, participation, transparency and accountability. In a study done for Danida in Zimbabwe in 2015<sup>96</sup> various options were proposed on how to broaden the scope of their democratic and accountable governance programme (including human rights and the rights based approach), it was proposed to address environmental rights to reduce operational risks for civil society and offer a neutral platform for civic engagement and capacity building on citizens' rights (and also provide a platform for broader rights). It was also seen as an opportunity to educate and capacitate legislators in debating and making informed decisions on issues/policies and legislation pertaining to climate change and green growth. Furthermore it was seen as an possibility to support the process of alignment of national laws with the new Constitution to enable human, political and environmental rights to be claimed and remedies sought. Another area where environment and human rights could be supported, is when it comes to lack of systematic monitoring or awareness of the growing threat to environmental and land activists in killings and a wide range of other abuses. National governments and judicial systems are regularly failing to protect their citizens from harm.<sup>97</sup> This is an area which needs to be further looked into if one want to support the links between environment and human rights.

## 6. Risks and opportunities

### 6.1 Risks

Many of the environmental risks have already been highlighted, especially in section 2, and a main conclusion is that if the natural resources are not managed in a sustainable way, there is a great risk for economic loss and poverty increase. With a strong dependence on natural resources, with mining and agriculture as a major source of income in Zimbabwe, well-functioning environmental management and strong enforcement of laws and regulations are essential.

Risks become complex since environmental challenges are interdependent and mutually reinforcing, a very concrete example of that is climate change. Climate change will affect water predictability and availability, which in its turn will impact agriculture, electricity production (particularly hydropower), and industrial development including mining. This will

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<sup>96</sup> Chigumira (2015)

<sup>97</sup> Global Witness (2014)

have effects on livelihood opportunities for the most vulnerable and poor, as well as on the national economy at large. Increasing water stress is a serious concern. In addition to impacts on human basic needs, water scarcity will have implications for hydropower production (as reduced reservoir inflows, due to decreased basin runoff and more frequent and prolonged drought conditions), and irrigation. Continued dependence only on hydropower systems could exacerbate the economic impact of reduced ecosystem services already associated with river development.

Human activities will have a larger impact on the scarce water resources in terms of quantity and quality. Increasing water scarcity will result in increased competition between water using sector and geographic areas, with potential conflicts. Another example of interdependence is deforestation, which will cause land degradation affecting biodiversity as well as ecosystem services (eg water regulation).

The environment is inseparable from the economy, poverty, health, livelihoods and food security, which is why it is of outmost importance for Zimbabwe to address its environmental challenges.

## **6.2 Opportunities**

With the abundant natural resources in Zimbabwe, including land, biodiversity and minerals, there is a great potential for economic development and eventually poverty reduction if these resources are used in an environmentally sustainable way.

For agriculture specifically, there is an increased availability of land to small scale farmers, ongoing diversification, research & technology development initiatives and potential benefits from cash production initiatives. There is also a potential for educational and outreach activities to change management practices to those suited to climate change, improve and conserve soils, develop new crops, develop early warning systems and disaster preparedness. When it comes to water resources there is also a potential to increase water supply, e.g. by using groundwater, building reservoirs, improving or stabilizing watershed management, desalination and decrease water demands by increasing efficiency, reducing water losses, water recycling and changing irrigation practices. Diversifying the use of the ecosystem services of the Zambezi for other purposes than hydropower thus presents an economic opportunity for Zimbabwe.

As earlier described, there is a great potential in Zimbabwe to address environmental concerns, with a relatively new constitution from 2013 stating that every person living in Zimbabwe has the right to safe, clean and potable water, furthermore it states the right to a clean environment and puts forward measure to prevent pollution. It also has an Environmental Management Act, recognising environmental rights as human rights. This is quite unique from a rights based perspective and a great opportunity to move the country forward in terms of environmental sustainability.

Zimbabwe will also have opportunities to tap into international funding, especially climate finance and should put in place systems and structures that enable it to take full advantage of the global finance in support of climate change adaptation and mitigation measures.

With strengthened institutional capacity, enforced legislation, enhanced public awareness and political will, there are definitely opportunities to address environmental challenges in Zimbabwe.



## 7. Conclusions

From this brief review it can be concluded that Zimbabwe faces a number of serious environmental challenges which need to be addressed. Sweden will have to focus on which of all these environmental challenges to target in the new strategy, given the broad draft mandate by the Government of Sweden to focus on: “The area of improved environment, limited climate impact, and strengthened resilience against environmental degradation, climate change and natural disasters, specifically generation of, and access to, sustainable energy, and the contribution of a green economy to productive employment and entrepreneurship.”

### 7.1 Ongoing Swedish support related environment and climate change

Swedish *ongoing development cooperation* with Zimbabwe focus on democracy, human rights, gender equality, and access to basic social services in health and education for vulnerable groups. Environment, climate change, resilience, and energy have not been part of the Swedish portfolio earlier. A sustainable multidisciplinary approach is seen as important, and experiences gained in previous support to Zimbabwe will need to feed into the area of environment and climate change, not least a rights based approach. The present Swedish development support to Zimbabwe is channelled through civil society and multilateral organisations which are likely to be main partners in the next strategy, as well as cooperation with private actors.

Sweden, in its development cooperation with Zimbabwe, has already developed thoughts on how to strengthen their work on environment and climate change. According to the yearly plan for development cooperation with Zimbabwe 2016 by Sida (2016), the proportion of efforts to integrate environment and climate change is estimated to be about 20% of the interventions, corresponding to 40% of the volume. Today it is mainly the large projects through UNICEF that integrates environment and climate change. The goal of the embassy is to increase the number of interventions integrating environment and climate change with two contributions, from 5 to 7 contributions. It is also said to be important to) ensure quality for the policy markers for environment and climate change 2) identify opportunities to strengthen environment and climate change focus in ongoing efforts and new contributions 3) identify initiatives where environment and climate change can be introduced as a dialogue issue. Possible efforts to integrate environment and climate change is said to be in Zimbabwe Works Phase ii, and programmes through CARE and IOM.

The only effort that currently specifies the policy marker "climate adaptation" is support to the Zimbabwe Reconstruction Fund (Zimref). The Government is presently developing a National Climate Change Policy, based on a previously developed national strategy for action on climate change ("National Climate Change Response Strategy"). Within the framework of the World Bank's multi-donor fund (Zimref), a project concept has been developed to increase the government's capacity to integrate climate change into planning, development and implementation of development projects with a special focus on the management of natural resources. The project aims to develop a framework to support, fund and monitor climate action, including an overview of public investment activities with a bearing on the climate. The sectors that have been identified are water, agriculture, energy and forestry sectors.<sup>98</sup>

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<sup>98</sup> Sida (2016)

## 7.2 Issues for Sida to consider

In a separate document “*Mapping Study of Possible Swedish Interventions to support a Green Economy Context of Zimbabwe*”, a consultant has been contracted by the Embassy in Harare, in parallel to this brief, to develop a brief of how Sweden can support the Green Economy Context of Zimbabwe, including 5-7 areas of possible intervention areas/options that realistically can be addressed during the coming strategy period (2016-2020). The interventions to be proposed in the study, addressing the new strategy area on environment/climate/energy proposed by the Government of Sweden, will be focused on synergies between renewable energy and green productive jobs for youth (including entrepreneurs) and have a strong focus on gender. The interventions proposed should be of relative large size or be clustered so they can be implemented as a coordinated project/single agreement or as part of an agreement in another sector. Openings for synergies between the various interventions should also be investigated and developed to avoid duplication of efforts and optimize resource allocation. Co-financing with other donors or development banks/actors is also said to be of interest.

Hence this policy brief will not go into proposing specific interventions but rather broadly, based on the challenges addressed above, propose some general ideas on areas for future interventions.

As mentioned above in section 7.1, there are already three programmes identified with possibilities for *environment and climate change integration*, two under private sector and employment creation (Zimbabwe works and CARE) and one under democracy, hr & gender (IOM). Integration of environment and climate change into the current portfolio will be crucial for the present and future strategy for Swedish development cooperation with Zimbabwe. By integrating environment and climate change into the ongoing programmes, it will lead to a more solid base when developing specific support to separate programmes on environment and climate changes specifically.

Based on the findings in this brief, there are a number of environmental challenges which could be addressed. Below is an attempt to list *some areas which could be supported* in relation to a few *selected sectors*, to serve as ideas for further discussions. The order of the issues listed here also serves as a suggestion from the Helpdesk on how the various challenges should be prioritized by the embassy

### Climate Change Adaptation

Climate change is of great importance for both economic development and poverty reduction, and will worsen already existing environmental and climate challenges. Adaptation will be necessary. Support could link specifically to SDG1, SDG 2, SDG3, SDG6, SDG7, SDG13, and SDG15.

- Educational & outreach activities to change management practices to those suited to climate change.
- Switch to different cultivars.
- Improve and conserve soils.
- Develop new crops.
- Develop early warning systems and disaster preparedness.
- Increase water supply, e.g. by using groundwater, building reservoirs, improving or stabilizing watershed management and desalination.
- Decrease water demands, e.g. by increasing efficiency, reducing water losses, water recycling, changing irrigation practices.

- Develop and introduce flood and drought monitoring and control system.

### **Renewable energy**

Renewable energy is generally defined as energy that is collected from resources which are naturally replenished on a human timescale, such as sunlight, wind, rain, tides, waves, and geothermal heat. Specific interventions on renewable will be proposed in the mapping study but a few ideas are listed below. The most obvious link is to SDG 7, SDG 8, and SDG 13, but could also link to SDG 1, SDG 3, SDG 5, SDG 8, SDG 9, SDG 10, SDG 11, SDG 12, and SDG 15, depending on how it is designed.

- Investigating sustainable off-grid electricity options for rural electrification
- Investigating the opportunities and barriers to households climbing the “energy ladder”; to go from fuelwood to less polluting (mainly in-door air pollution) energy sources
- Study to gain knowledge on what conditions that should prevail in order for electrification to promote a “take-off” and increase productivity for small and medium sized enterprises, and collect lessons from other countries.

### **Biodiversity and ecosystem services**

Biodiversity and ecosystems provides important life-supporting functions and services. Support in this area links particularly to SDG 15, but could also link to SDG 1m SDG2, SDG 3, SDG 5, SDG 6, SDG 13 and SDG 14.

- Support mainstreaming of biodiversity issues into different sectoral policies for sustainable development.
- Support biodiversity conservation in protected areas through co-management agreements etc.
- Engage women in decision-making positions on natural resource management committees and community ownership trusts.
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### **Human Rights**

The environment is as a prerequisite to the enjoyment of human rights. It is important to improve the understanding of the direct and indirect links between the protection of the environment and the enjoyment of human rights. Links in particular to SDG 10, SDG 15 and SDG 16.

- Address environmental rights to reduce operational risks for civil society and offer a neutral platform for civic engagement and capacity building on citizens’ rights.
- Educate and capacitate legislators in debating and making informed decisions on issues/policies and legislation pertaining to climate change and green growth.
- Support the process of alignment of national laws with the Constitution to enable human, political and environmental rights to be claimed and remedies sought.
- Improve the systematic monitoring or awareness of the growing threat to environmental and land activists in killings and a wide range of other abuses.

### **Agriculture**

A majority of the people living in poverty and extreme poverty in Zimbabwe are active in the agricultural sector. There are strong linkages between agriculture and poverty, food security and nutrition, and could have positive linkages to reduced land degradation. Efforts within the agricultural sector may have substantial pro-poor impacts. Linkages to SDG 1, SDG 2, SDG 3, SDG 5, SDG 10, SDG 15.

- Assistance to reduce the vulnerability of smallholders, for instance through access to micro credits for investments, increased access to (environmentally friendly) agricultural inputs, etc.
- Support opportunities to add value to agricultural products (processing, certification or similar).
- Support smallholders access to markets (user organisations, pooling of resources, etc).
- Assist tenure security (essential for investments).
- Capacity building for smallholders on both communal and resettled areas on land improvement, adaptation, conservation farming and with demonstration sites.
- Safe and good management of agro-chemicals.
- Support access to water and improved land management (including investments).

## **Water**

Water is intrinsically linked to agriculture, climate change, poverty, economic development, power supply, and health and is of increasing important to equality when availability is reduced. Links to particularly SDG 2, SDG 3, SDG 6, SDG 7 and SDG 13. However, being an input to most human and economic activities, also to SDG 1, 4, 5, 8, 9, 10, 11, 12, 15, and 16 could be relevant, depending on how the support is designed.

- Support Integrated Water Resource Management (IWRM) and concrete measures in specific basins through investigating how to best support smallholders' reliable access to water, today and in the future.
- Support IWRM through water governance to help balance and prioritise water use, in sub-basin organisations (such as ZINWA-SAVE that is supported by Sida through the regional Pungwe project).
- Include water management and development of water supply and sanitation, to help combat future epidemics of cholera, or malaria or other water- or vector borne diseases.
- Assist to establish regulatory system for water quality, and especially for industrial waste including pollution and wastewater.

## **Tourism**

Eco-tourism may create jobs, conserve nature and promote biodiversity and be a source of income to communities. Links to SDG 1, SDG 2, SDG 5, SDG 8, and SDG 15.

- Support eco-tourism.
- Support community based natural resource management.

## **Forestry**

Utilising forests for pro-poor activities while maintaining it for improving or maintaining ecosystem services, links to SDG 1, SDG 2, SDG 3, and SDG 15.

- Support alternative energy sources to overcome excessive use of fuelwood.
- Assist in regulating timber extraction.
- Support sustainable land use for cultivation.

## **Mining**

Improved regulation and policy implementation in the mining sector can help to improve both human and environmental health, fulfil human rights obligations, and may improve governance through increased transparency and accountability. Support to reducing the negative effects from mining. Links particularly to SDG 1, SDG 3, SDG 8, SDG 10, SDG 12, and SDG 15.

- Improve quality of EIA regulation and implementation, including transparency and accountability
- Support to organisation that monitor EIAs, including the quality of assessments and how they are disseminated
- Improve transparency and accountability for the mining sector through embracing the Extractive Industry Transparency Initiative (EITI).
- Support the alignment of mining laws with the provisions of the new Constitution.

## **Environmental Management**

Environmental management is of great importance in tackling the environmental challenges, due to e.g. the lack of human and financial resources and the difference in interpretation of the statutes across government institutions. Links in particular to SDG 13, SDG 14 and SDG 15, but also to most other SDGs in a cross-cutting way.

- Support implementation and enforcement of existing legislation and policies, as well as coordination and cross-sectoral cooperation.
- Strengthen the interpretation of the statutes across government institutions.
- Improve awareness amongst the judiciary and the police for improved implementation and enforcement.
- Support to carry out an Environmental Performance Review (EPR) or a Public Environment Expenditure Review (PEER), if requested by the Government.

## **Disaster Risk Management and Resilience**

Supporting DRM and resilience activities is essential in order to strengthen risk and early warning information, disaster education, reduction of underlying risks and emergency preparedness and response. Links in particular to SDG 13, SDG 14 and SDG 15, but also to most other SDGs in a cross-cutting way.

- Support to the implementation of the DRM Strategy and Bill.
- Strengthen an integrated information management system and systematic framework for capturing drought losses and impacts.
- Improve awareness on disaster risk management.
- Support social protection policy that integrates post-disaster recovery.
- Assist in development of policies and strategies that address chronic food insecurity regions.

## **Green economy**

Green economy is defined as an economy that aims at reducing environmental risks and ecological scarcities, and that aims for sustainable development without degrading the environment. In a green economy, growth in income and employment are driven by policies and investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent loss of biodiversity and ecosystem services. Transparent revenue sharing from natural resource extraction and pollution charges, and targeting of environmental incomes may speed up poverty reduction, boost green jobs creation, and improve livelihoods for poor and vulnerable groups. Green economy is closely linked to environmental management (see above) and is a way to attain sustainable development. Specific interventions on green economy will be proposed in the parallel mapping study, but a few suggestions within the area of green economy are made below. The most obvious link is to SDG 7, SDG 8, and SDG 13, but could also link to SDG 1, SDG 3, SDG 5, SDG 8, SDG 9, SDG 10, SDG 11, SDG 12, and SDG 15, depending on how it is designed.

- Support to prepare a national green economy strategy, and identify synergies and tradeoffs.
- Provide incentives and appropriate institutional arrangements to create an enabling environment for a green economy
- Assessment of costs and benefits of strategies and policies.
- Support to capacity building related to Strategic Environmental Assessments.

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## Annex

### Annex 1. Impacts of natural hazards in Zimbabwe

Summary of impacts of natural disasters in Zimbabwe between 1990 and 2015

<b>Disaster type</b>	<b>Disaster subtype</b>	<b>Events count</b>	<b>Total deaths</b>	<b>Total affected</b>	<b>Total damage ('000 US\$)</b>
<b>Drought</b>	Drought	7	0	18 512 642	50 000
<b>Epidemic</b>	Bacterial disease	17	4 900	111 349	0
<b>Epidemic</b>	Viral disease	2	55	1 338	0
<b>Epidemic</b>	Parasitic disease	1	1 311	500 000	0
<b>Flood</b>	--	3	84	40 102	3 600
<b>Flood</b>	Riverine flood	9	271	313 020	272 900
<b>Flood</b>	Flash flood	1	3	1 002	20 000
<b>Storm</b>	Tropical cyclone	2	8	0	1 200
<b>Storm</b>	Convective storm	1	10	475	0

Source: EM-DAT Zimbabwe: [http://www.emdat.be/country\\_profile/index.html](http://www.emdat.be/country_profile/index.html) (accessed 2016-03-01)

## **Annex 2. South African Green Economy Strategy**

Nine key focus areas for implementation in South Africa's Green Economy Strategy:

**Green buildings and the built environment:** programme includes

- greening private and public buildings

**Sustainable transport and infrastructure:** programme includes

- promoting non-motorised transport

**Clean energy and energy efficiency:** programme includes -

- Expanding off-grid options in rural and urban
- REFIT optimisation for large scale renewable and localisation and
- Up-scaling Solar Water Heater rollout

**Resource conservation and management:** programme includes -

- National payments for ecosystem services
- Up-scale "Working for" programmes
- Infrastructure resilience and ecosystems
- Offset programme
- Wildlife management

**Sustainable waste management practices:** programme includes -

- Waste beneficiation
- Zero waste community programme for 500 000 households

**Agriculture, food production and forestry:** programme includes

- integrated sustainable agricultural production

**Water management:** programme includes -

- Water harvesting
- Alternative technology for effluent management
- Comprehensive municipal water metering (Demand side management)
- Reduce water losses in agriculture, municipalities and mining

**Sustainable consumption and production:** programme includes -

- Industry specific production methods
- Industrial production technology changes

**Environmental sustainability:** programme includes -

- Greening large events and legacy (2010 Soccer World Cup, COP17 flagship & Tourism) and
- Research, awareness and skills development and knowledge management

### **Annex 3. Example of initiative to provide economic incentives for local communities in wildlife conservation**

Zimbabwe was among the first African countries to develop an alternative approach to management of natural resources outside protected areas through the Community Areas Management Programme for Indigenous Resources (CAMPFIRE). CAMPFIRE has enabled local communities to benefit from wildlife hunting revenue streams in their areas. Part of the revenue is traditionally used to build schools, clinics etc. in targeted areas by Rural District Councils.

USA brings the highest number of sport hunters to Zimbabwe<sup>99</sup>. When the USFWS<sup>100</sup> suspended the import of elephant trophies into the United States in 2014, which was extended all of 2015 meant that more than half of the elephant hunts were cancelled in 2014 due to the U.S. importation ban. The import suspension has caused a massive disruption of hunting revenue to the CAMPFIRE communities. When CAMPFIRE revenues countrywide are falling they risk becoming inadequate to incentivize growing numbers of local communities who are subjected to wildlife damage on a regular basis. Although elephant population figures have remained stable poaching levels have increased<sup>101</sup> in the wake of the CAMPFIRE shortcomings.

It might be of interest for Zimbabwe to learn from Namibia's "Communal conservancies" that have become a conservation success story. Since 1998, the movement, with the support of WWF, has engaged more than 250,000 community members with the creation of 64 communal conservancies covering 35 million acres of wildlife habitat.

According to WWF<sup>102</sup>, in the established conservancies, wildlife is now a valued livelihood asset, with the result that poaching is no longer socially acceptable and populations of wildlife there have been restored. Human welfare is also improving, thanks to \$5.5 million in annual income and benefits from international and domestic eco-tourism the conservancies generate for communities. As the revenues for conservancies are not connected to hunting they are thus more sustainable, not being exposed to future well-meant international tightening on rules regarding trophy-hunting.

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<sup>99</sup> About 76% of hunters in CAMPFIRE areas for all animals hunted each year  
[http://news.nationalgeographic.com/2016/02/160206-American-trophy-hunting-wildlife-conservation/..](http://news.nationalgeographic.com/2016/02/160206-American-trophy-hunting-wildlife-conservation/)

<sup>100</sup> US Fish & Wildlife Service

<sup>101</sup> WWF (2015).

<sup>102</sup> WWF website