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Environmental integrity and doing business in Zimbabwe:

Challenges and engagement of sustainable enterprises

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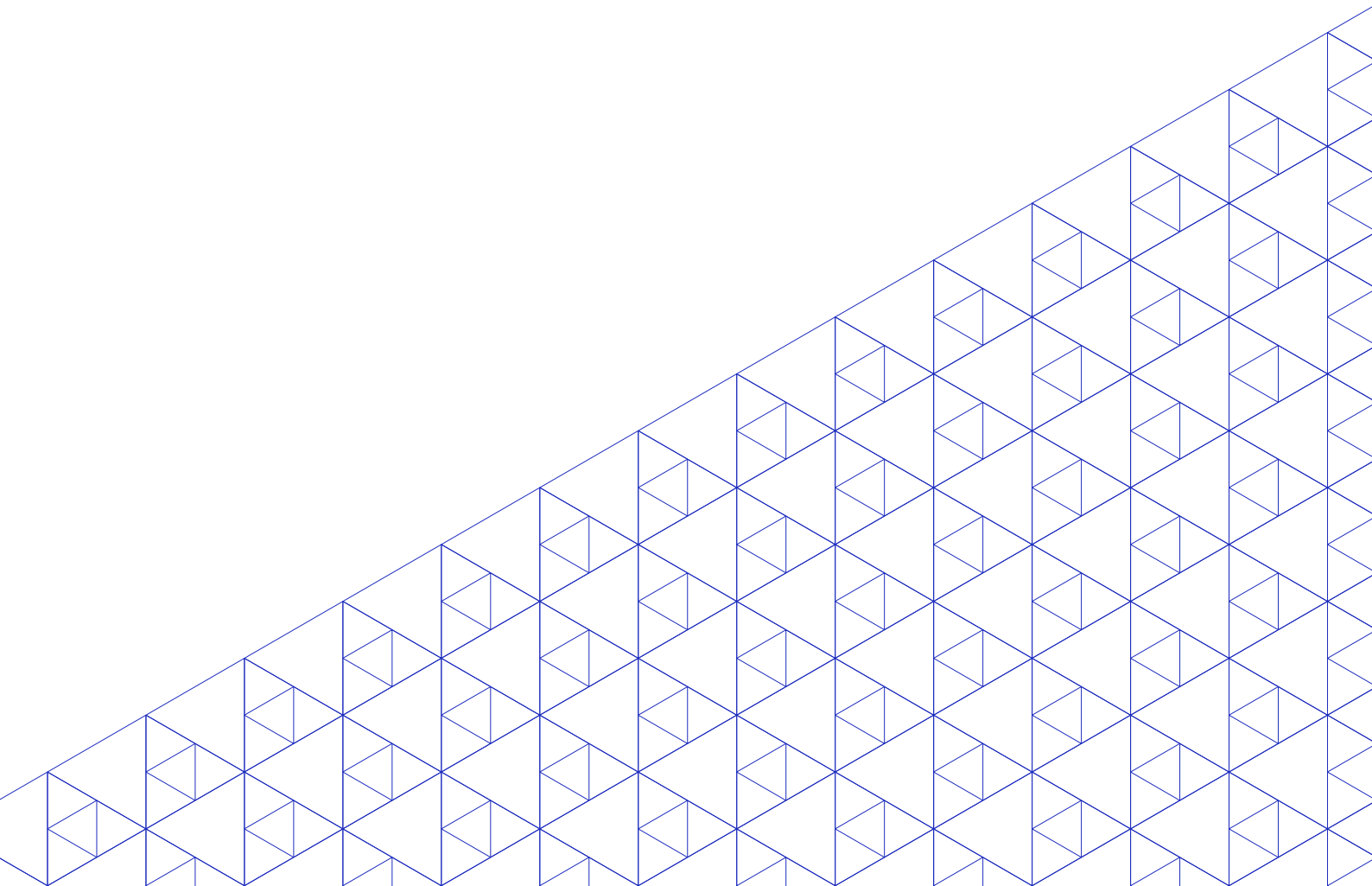

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Abstract

Zimbabwe has a wealth of natural resources and is rich in biodiversity. The national Government is trying to achieve private sector led economic growth and the challenge to pursue both economic development and sound environmental management at the same time appears clear. The objective of this paper is to explore the views of different groups of the business community, including workers, managers and owners of the formal as well as of the informal economy, on how environmental integrity is being pursued in Zimbabwe. Both quantitative and qualitative/interpretative methods have been applied. The results of a perception survey have been explained through qualitative interviews with Zimbabwean experts. The paper concludes suggesting actions that the private sector can adopt to improve the existing situation and further strengthen its engagement towards environmental integrity in the country.

About the authors

Maria Sabrina De Gobbi has a MSc in Environmental Management from SOAS and Imperial College (United Kingdom), A Master degree in Law and one in International Relations from the University of Trieste (Italy) and a MA in international relations and economics from Tufts University (United States). She has been a regular officer at the International Labour Organization since 1998, working in areas including employment and labour market policies, microfinance and enterprise development, gender and women's economic empowerment, environmental sustainability and sustainable development. Her work focuses exclusively on developing countries, especially from Sub-Saharan Africa.

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Introduction

The 2007 International Labour Conference defined a conducive or enabling environment for sustainable enterprises as one, which ' combines the legitimate quest for profit – one of the key drivers of economic growth – with the need for development that respects human dignity, environmental sustainability and decent work. (ILO, 2007 p3). Such an enabling environment is further articulated in seventeen conditions covering political, economic, social and environmental component.[1] The seventeenth element of the list is "Responsible stewardship of the environment" (ILO, 2007) and it is the only one referring specifically to the environmental dimension of a conducive environment for sustainable enterprises. The present research focuses on that seventeenth element.

In 2016, the Employers' Confederation of Zimbabwe expressed interest in assessing the state of the business environment in their country, in order to formulate plans for improvement. An evaluation was hence conducted with the technical support of the ILO and the participation of workers' and government representatives. The assessment covered all the seventeen conditions identified by the International Labour Conference in 2007. Among the three main emerging areas of concern for national stakeholders was environmental sustainability (ILO, 2018).

Zimbabwe has a wealth of natural resources and is rich in biodiversity. The efforts the country has made over decades to safeguard the environment stand out on the African continent. Despite a relatively successful development model, and a generally high environmental awareness, numerous threats persist (UNFCCC, undated). Deforestation, over-exploitation of natural resources, climate change, soil erosion, land degradation, biodiversity loss and air and water pollution are some of the challenges that the country is still confronted with (FAO, undated; Republic of Zimbabwe, 2015).

In its "Transitional Stabilisation Programme" which covers the period from October 2018 to December 2020, the Government of Zimbabwe sets a reforms agenda to achieve private sector led economic growth and to become an upper middle-income country by 2030. The challenge to pursue both economic development and sound environmental management at the same time appears clear in Part III of the document, which deals with reforms of the productive sectors. On one hand, the Government envisages a strong boost of the mining sector, through re-opening of closed mines and opening of new ones, and the promotion of domestic smelting and refining. It also announces increased investment in the manufacturing sector. On the other, it targets protection and restoration of the environment and the promotion of sustainable use of natural resources (Republic of Zimbabwe, 2018).

Some of the industrial activities that the Zimbabwean Government intends to promote are unfortunately among the most polluting and environmentally degrading. Minerals, metals and gems mining result in land degradation and toxic waste. Artisanal or small-scale gold mining is also very polluting, especially when it is informally performed. Tanning, which is the transformation of animal hides and skins into leather, is widespread in the country and generates toxic waste. Chemical and product manufacturing also ranks high in the list of top polluting industrial activities (Pure Earth, 2016).

The Transitional Stabilisation Programme expects the private sector to lead the economic growth of Zimbabwe. In order to pursue sustainable development, the business community feels the need to address the issue of how to reach environmental sustainability while maximising efforts towards prosperity. The Programme is in line with the Sustainable Development Goals (SDGs) that the national government has selected as priorities: SDG 5 on Gender Equality, SDG 7 on Affordable and Clean Energy, SDG 8 on Decent Work and Economic Growth, SDG 9 on Industry, Innovation and Infrastructure, and SDG 13 on Climate Action (Government of Zimbabwe, 2017).

The objective of this paper is to explore the views of different groups of the business community, including workers, managers and owners of the formal as well as of the informal economy, on how

[1] The 17 conditions are: (1) Peace and political stability; (2) Good governance; (3) Social dialogue; (4) Respect for universal human rights; (5) Entrepreneurial culture; (6) Sound and stable macroeconomic policy; (7) Trade and sustainable economic integration; (8) Enabling legal and regulatory environment; (9) Rule of law and secure property rights; (10) Fair competition; (11) Access to financial services; (12) Physical infrastructure; (13) Information and communications technology; (14) Education, training and lifelong learning; (15) Social justice and social inclusion; (16) Adequate social protection; (17) Responsible stewardship of the environment.

environmental integrity is being pursued in Zimbabwe. The most relevant assessment instrument which was used for the ILO evaluation of the enabling environment for sustainable enterprises is a perception survey. Its results will be analysed in depth to describe the perceptions of different groups of the private sector in the country. The detailed analysis provided in this paper will shed light on unexplored aspects of the environmental component of the Zimbabwean business climate. Both quantitative and qualitative/interpretative methods will be adopted. Issues stemming from the primary data analysis will be explained through qualitative interviews with Zimbabwean experts.

After this introduction, Chapter 2 provides the definition of some concepts, which will be discussed in the present paper. Chapter 3 presents the literature that has been reviewed and that constitutes the background knowledge to the environmental issues at stake. Chapter 4 briefly describes the environmental law framework of Zimbabwe. The methodology of this research is contained in chapter 5. Survey findings and the results of expert interviews are presented and discussed in chapter 6, where the three research questions are addressed. Chapter 7 concludes the paper.

1 Definitions

Responsible stewardship of the environment

The seventeenth element identifying the environmental dimension of a conducive framework for sustainable enterprises as indicated by the 2007 International Labour Conference is "Responsible stewardship of the environment". The definition that is provided explains that without regulations and incentives – in particular tax incentives – markets may lead to undesired effects on natural resources. In addition, private market-based solutions including ecological criteria to estimate credit risk or investment performance are mentioned as measures to be considered to avoid negative consequences on nature (ILO, 2007). Clearly, the safeguard of the environment to secure an enabling climate for sustainable enterprises requires the active role not only of the government with regulations and incentives, but also of the private sector through the adoption of ecologically correct solutions in decision-making.

Sustainable enterprises

The first international approach referring to sustainable companies is the United Nations Global Compact, a private voluntary initiative whose governance framework was adopted in 2005 by then UN Secretary General Kofi Annan. Sustainable enterprises must apply ten principles concerning the areas of human rights, labour, environment and anti-corruption. The chief executive officers of participating firms are responsible for implementing the ten universal sustainability principles (UN Global Compact, 2019).

Principles 1 and 2 address the respect and support of human rights and forbid complicity in human rights abuses. Principles 3 to 6 deal with freedom of association, the right to collective bargaining, the elimination of all forms of forced and compulsory work, the abolition of child labour, and the elimination of discrimination at the workplace. Principles 7 to 9 support a precautionary approach to environmental challenges, encourage companies to undertake initiatives to promote greater responsibility in protecting nature, and promote the development and diffusion of ecologically friendly technologies. To conclude, Principle 10 encourages businesses to work against corruption (ibid).

The already mentioned 2007 Conclusions of the International Labour Conference provide a different framework and identify six characteristics of sustainable enterprises. First of all, sustainable companies are those firms that make use of "Social dialogue and good industrial relations", including information, consultation and participation of workers as well as collective bargaining. Social dialogue is to be meant as covering also international framework agreements between multinational companies and global union federations.

The second principle refers to "Human resource development", which focuses on developing the skills and competencies of workers to adjust to change and foster productivity. "Conditions of work" is the third principle. It entails the provision of a safe and motivating working environment, free of discrimination and harassment.

The forth principle deals with "Productivity, wages and shared benefits". Sustainable enterprises allow their workers to participate in their own success, through the distribution of a fair share of profit from economic activity and improved productivity. "Corporate social responsibility" is the fifth principle. CSR cannot replace regulations, laws and collective bargaining. It is a voluntary initiative and exceeds compliance with existing legislation. Through CSR, businesses have the opportunity to engage on the social and environmental effects of their activities. The last principle is "Corporate governance

and business practices" and it comprises the values of accountability, transparency, fairness, respect for the rule of law and for fundamental principles and rights at work (ILO, 2007).[2]

The six principles described above highlight the fact that sustainable enterprises are made of employers and workers together. In the present paper, the very same notion will be applied to the private sector, which is to be considered as including both employers and workers.

It is to be noted that both the six ILO principles for sustainable enterprises and the ten universal sustainability ones of the UN Global Compact are easier to be applied by large firms than by SMEs. It is believed that big companies should implement sustainable business practices also to their supply chain so that smaller enterprises can equally improve their environmental and social standards (Gazzola et al, 2018).

To incorporate different aspects of sustainable practices in enterprises of all sizes and type, some international standards have been used as guidelines. Two of such standards prescribe requirements that lead to certification. These are ISO 9001 on quality, customer satisfaction, reduction of waste and of client complaints, standardization of work processes and communication improvement; and ISO 14001 on quality and the environment, mitigating effluents emissions, and reducing impact on nature. A third standard, ISO 26000 provides guidelines based on the principle that enterprises bear responsibility for the impact of their decisions and activities on society and the environment. The Global Reporting Initiative is also worth mentioning. It is a reporting framework according to which the sustainable performance of businesses is assessed following indicators on their economic, ecological and social activities. Last but not least, the more recent Life Cycle Assessment allows firms to evaluate all processes of a product or service "from the cradle to the grave" (dos Reis Alves et al, 2013).

[2] For a recent overview of sustainable enterprises and the jobs they create, see the 2017 ILO World Employment Social Outlook "Sustainable enterprises and jobs: Formal enterprises and decent work".

2 Context and issues

Economic activity and the environment

There are trade-offs between economic development and the environment. Considering the economy as composed of production and consumption, it is possible to identify three ways in which economic activity uses the environment (Fraser and Smith, 2009).

Firstly, the environment supplies natural resource inputs for production. In fact, land, water and raw materials make up goods and services. Natural resources can be of two types: renewable like solar energy or non-renewable like granite. This distinction is crucial in the management of resources for production. The products can be either goods or services for consumers or inputs for other parts of production. Unfortunately, the processing of inputs also produces waste.

Secondly, the environment supplies natural or amenity goods for consumption by society. Examples include the beautiful landscapes that Zimbabwe offers and which are economic benefits for tourism, and forests, which provide global economic services through their carbon sink function. Zimbabwe's rich biodiversity that people enjoy is also an illustration of a public consumption good.

Thirdly, the environment has a waste sink capacity in that it absorbs the waste products of production and consumption and converts them into useful outputs. Sadly, though, besides waste products, there are also intentional discharges of chemicals, such as pesticides, paints and greenhouse gases. Waste products can be degradable or cumulative. With cumulative pollutants, it is important to know whether there are thresholds that must be avoided because the assimilative capacity of the environment is limited (ibid).

Considering a neo-classical environmental economic approach, there exists an optimum degree of pollution, which is a level of environmental degradation where pollution abatement costs do not outweigh the corresponding benefits to society. Such optimum environmental degradation point can be reached through the market mechanism or with government interventions. In the former case, market-like forces including businesses and society achieve optimum pollution control without any major government action. In the latter, the government intervenes by setting regulations. Rather than introducing standards, economists prefer to restructure markets to ensure a more efficient inclusion of environmental services in the market system. This is achieved through economic incentives that are mainly taxes and subsidies (ibid). As described in section 2.1, standards and incentives for environmental protection are the focus of the seventeenth condition of a conducive framework for sustainable enterprises as defined by the International Labour Conference in 2007.

Incentives may lead to either degradation or improvement of the environment. The negative impact of incentives on the environment is determined by market failure and government failure. The former is often due to the lack of a market for the efficient allocation of an environmental asset. For instance, there is no market for clean air, beautiful views or tropical rainforests. In addition, many environmental goods and resources do not have a price in markets. A government intervention may remedy a market failure, but it may also contribute to further environmental degradation through a government failure. An example of such a case is the provision of subsidies for the use of energy in some countries, which leads to a wasteful use of energy and subsequent air pollution and waste disposal issues (ibid). There is also information failure, which is when the information for people or enterprises to make the best economic decision with minimal ecological impact is not available, incomplete, too expensive or not easy to understand. This is for instance, one of the reasons why firms often do not adopt resource efficiency techniques, which would lead to both better environmental outcomes and cost savings at the same time (Everett et al, 2011).

If a natural resource is not privately owned, it may end up being over-exploited or deteriorated. Air, for instance, can be easily polluted. There are also cases where the costs and benefits of a good do not

entirely accrue to the owner and may lead to negative or positive externalities. For example, as will be described in section 6.3, factories in industrial areas like Harare and Chitungwiza often dump wastes in the streets and rivers preventing Zimbabweans from enjoying a clean, pristine landscape. Clearly, the owners of the concerned companies do not bear all the costs of their economic activities. This is an example of a negative externality. A positive one may be given by the nice view of nature in a city resulting from agriculture production (Fraser and Smith, 2009).

Two main drivers of the relationship between economic activity and the environment are the scale and composition of the economy and technological progress. As per contribution to GDP, the share of services as opposed to industry and manufacturing is very important. The latter sector has a greater negative impact on the environment than services (Everett et al, 2011). In Zimbabwe, the value added of industry including manufacturing was 32.5 per cent in 2018 and that of services totalled 45.7 per cent in the same year. Table 1 compares Zimbabwe's composition of GDP to that of other selected countries. Its comparatively low level of industrialization reflects its poorer degree of development.

▶ Table 1. Contribution to GDP (% of total) of agriculture, industry and services in selected countries – 2018

Country	Industry	Services	Agriculture
Zimbabwe	32.5	45.7	12.1
China	40.7	52.2	7.2
Egypt	35.1	51.4	11.2
Germany	28	61.5	0.7
Netherlands	17.9	69.9	1.6

Source: World Bank Indicators

Economic activity leads to economic growth that is normally accompanied by technological progress and innovation. New technology is key to obtain cleaner production and a more efficient use of resources, which is less detrimental to nature (Everett et al, 2011).

There are cases where economic activity must be protected from the environment. For example, extreme weather events may bear negative consequences on businesses and economic growth. It is therefore essential to build infrastructure for energy and water supply and a transport system, which can resist to extreme adverse climate phenomena (ibid).

Starting from the theoretical framework presented so far and from "Responsible stewardship of the environment" as a condition to achieve a conducive framework for sustainable enterprises, the following research questions will be addressed:

- In Zimbabwe, does adequate legislation to protect the environment exist and is it implemented?
- Are environmental issues of concern and being addressed by the business community in Zimbabwe?
- Which actions can the private sector undertake to fill identified gaps?

A literature review will shed light on some aspects of trade-offs between economic activity and the environment in Zimbabwe. Remaining gaps will be filled by survey findings and interviews with national technical experts.

Environmental overview

Zimbabwe is a land-locked country located in a semi-arid region with sub-tropical climate and unpredictable rainfall patterns (Brown et al, 2012; GoZ, 2015A). Its territory is characterized by grassland, forest and predominant savannah including woodlands (FAO, undated). Forests cover 66 per cent of its land area (GoZ, 2015A). The country is rich in biodiversity and natural resources, including minerals, agricultural land, vegetation, water and wildlife. It comprises some internationally recognised biodiversity

hotspots, namely regions with significant levels of biodiversity under human threat. Among them are the Afromontane forest grasslands in the Eastern Highlands, the Eastern Mountains for endemic bird species, the Great Dyke in the drier Zambezian Miombo for plant diversity, and the Hwange National Park especially for birds. Numerous species are classified as threatened, such as the black rhino that is critically endangered, the wild dog that is endangered, and the elephant, cheetah, lion and six others that are considered vulnerable (Republic of Zimbabwe, 2014).

Over 60 minerals with high economic value can be found in Zimbabwe. Most of them are located along the Great Dyke, a mountain region that extends over the length of the country for 550km and ranges from 10 to 30km in width. The minerals that can be found include gold, chrome, ferrochrome, coal, nickel, iron ore, diamonds and black granite. As of 2011, there were 6,000 known mineral deposits in the country, but only about 60 per cent of the national territory had been mapped at that point in time (Mtisi, 2011). Since then, explorations have not made any progress, because the government lacks the financial resources that would be necessary to complete the mapping. Nowadays, companies are granted both exploration and mining licenses at the same time so that exploration activities can be funded by the private sector (Expert 2)[3].

Zimbabwe has a protected areas network that covers 28 per cent of its land. The largest share (13 per cent) includes national parks. Gazetted forests (3 per cent) and conservancies and private game parks (1.9 per cent) constitute smaller proportions. A larger surface (11.9 per cent) is allocated to the Communal Areas Management Programme for Indigenous Resources, a community-based natural resource management programme also known as CAMPFIRE (Republic of Zimbabwe, 2014).

Threats to environmental integrity: Climate change

The principal threats to the environmental integrity of Zimbabwe globally fall under two categories: those linked to land use changes resulting from anthropogenic action and economic activity, and the impacts of climate change. It must be added that anthropogenic action also has a direct effect on climate change. Such linkage is out of the scope of the present research. This section focusses on the effects of climate change on the environment of Zimbabwe and the next will deal with the impact of land use changes and economic activity in the country.

The life and well-being of both rural and urban Zimbabweans depend on the country's natural environment. About 68 per cent of the national population live in rural areas (ZimStat, 2017) and survive thanks to subsistence agriculture and the rich biodiversity that their national land provides. Climate change is a serious threat to the productivity of these natural resources and to the livelihoods they can secure. Compared to the previous decade, from 2000 to 2010 the temperature in Zimbabwe increased by an average of 0.4°C and annual average rainfall decreased by 5 per cent. Climate change will severely alter forest and grassland ecosystems leading to a loss of land diversity in the country. Animal diversity and population density will also change, with particularly serious negative consequences for long-lived species for which it will be difficult to recover. Thermal cycles of lakes and rivers will be modified, which will have a negative impact on fresh water ecosystems (Republic of Zimbabwe, 2014).

Climate change and its implications bear a negative impact on those sectors of the economy that are natural resource-based and climate-sensitive, and in particular agriculture, forestry, energy, water and tourism (GoZ, 2015A).

Agriculture - The overall level of water available will decrease over time. Agriculture requires the largest amount of water in the country, with 81 per cent being used for field irrigation, fish farming and watering animals. This sector of the economy will suffer the most from climate change. Over 70 per cent of the Zimbabwean labour force is directly or indirectly employed in agriculture. Crops productivity has been declining due to climate change (GoZ, 2015A). Maize mono-cropping is common. Mono-harvest was encouraged for decades. Since 2010 multicropping has been promoted and harvest systems are being diversified towards more heat and drought tolerant species (Republic of Zimbabwe, 2015). A clear illustration of the devastating effects of climate change on this economic sector is a recent

[3] See the methodology chapter for more information on this source.

drought that occurred in the country, followed by Cyclone Idai in March 2019. These extreme weather events have caused significant damage to agriculture (EIU, 2019) increasing poverty and starvation.

Forestry - With increased temperatures, less frequent rainfalls and more droughts, fire has become a major factor of forest degradation. Other negative effects of climate change on woodlands include variations in species composition, changes of boundaries, shifts in growth rates, increased species migration, and loss of biodiversity. Forests are negatively affected by climate change, but also have a beneficial impact on it through carbon sequestration, wind protection and humidity retention (GoZ, 2015A).

Water and energy - Water stress will lower the quantity and quality of drinking water both in rural and in urban areas, and will decrease the level of water which is necessary to support the hydroelectric power supply. Extreme weather events, such as drought, flood and tropical storms will become more frequent and intense causing the destruction of infrastructure (Brown et al, 2012). A recent example of such extreme phenomena is Cyclone Idai, which caused significant damage to buildings and infrastructure in March 2019 (EIU, 2019).

Tourism - The large majority of the tourist attractions in Zimbabwe consist of natural sights, including waterfalls and forests. National and trans-frontier parks are the destination of many visitors who have the privilege to observe over 100 species of rare, large mammals, such as elephants, rhinoceros, leopards, lions and buffalos (GoZ, 2015A). Climate change will cause the loss of some of those rare species with a direct, negative consequence on tourism.

Threats to environmental integrity: Land use changes and economic activity

Land use changes are due to human action in general and economic activity in particular. The economic performance of Zimbabwe is not and has not been very successful in recent years. Real GDP growth in 2018 was 3.4 per cent. It is estimated to be negative, at -5.2 per cent in 2019 (IMF, 2019). This very poor economic performance is due to a drought event, followed by Cyclone Idai in March 2019. These two extreme weather phenomena together caused hunger and destruction in the country, which was already suffering from a volatile political and macroeconomic environment. The recovery efforts will require an increase in government expenditure (EIU, 2019).

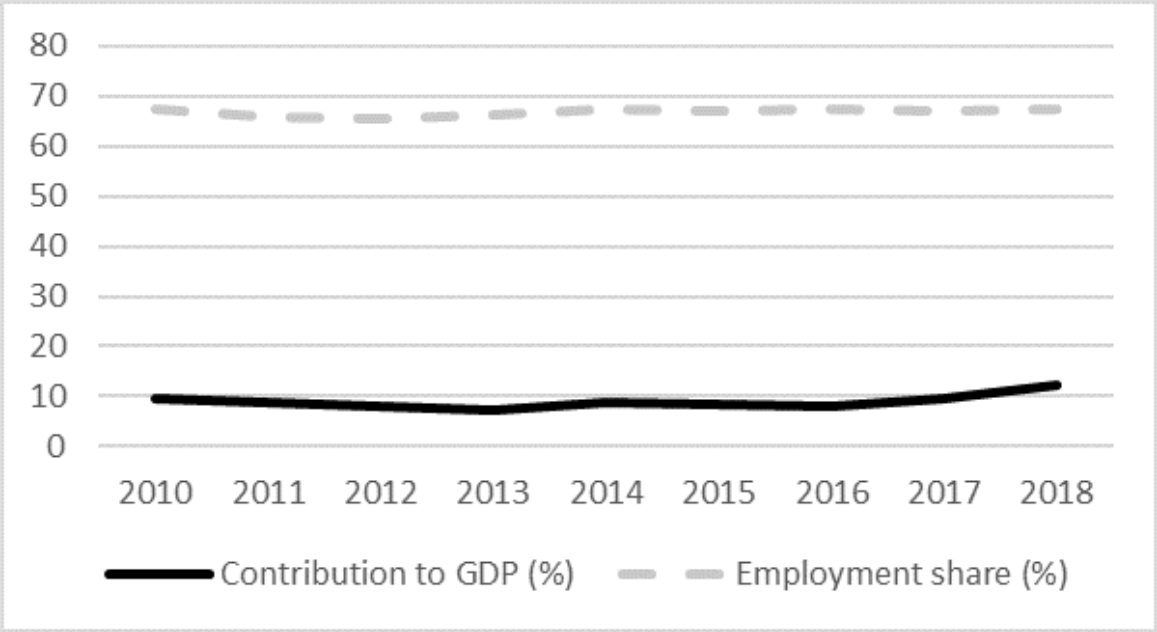
The economic sectors with the strongest negative impact on the environment in Zimbabwe are agriculture, mining, manufacturing, energy, transport and tourism (Republic of Zimbabwe, 2014). Construction also entails significant land use changes (Chirisa, 2014). In 2018, agriculture and forestry contributed 12.4 per cent to GDP growth, mining and quarrying 13 per cent, manufacturing 1.7 per cent, electricity and water 3.2 per cent, distribution, hotels and restaurant 5.6 per cent, transportation and communication 3.1 per cent, and construction 7.7 per cent (GoZ, 2019A). The following tables and charts provide data on the contribution to GDP and the share of employment of these sectors. In general, employment elasticity is low. Growth is likely to be particularly capital-intensive in industry, probably due to the expansion of the extractive sector especially in recent years.

▶ Table 2: Contribution to GDP and employment share of industry (including construction, electricity, gas, mining, and water), 2010 – 2018

Year	Contribution to GDP (%)	Employment share (%)		
		Mining and quarrying	Utilities	Construction
2010	11.5	1.8	0.2	1.6
2011	12.5	2.0	0.2	1.9
2012	11.3	1.8	0.3	1.9
2013	10.9	1.6	0.3	1.8
2014	11.1	1.5	0.3	1.6
2015	10.5	1.5	0.3	1.6
2016	10.5	1.5	0.3	1.5
2017	15.0	1.5	0.3	1.5
2018	24.3	1.5	0.3	1.5

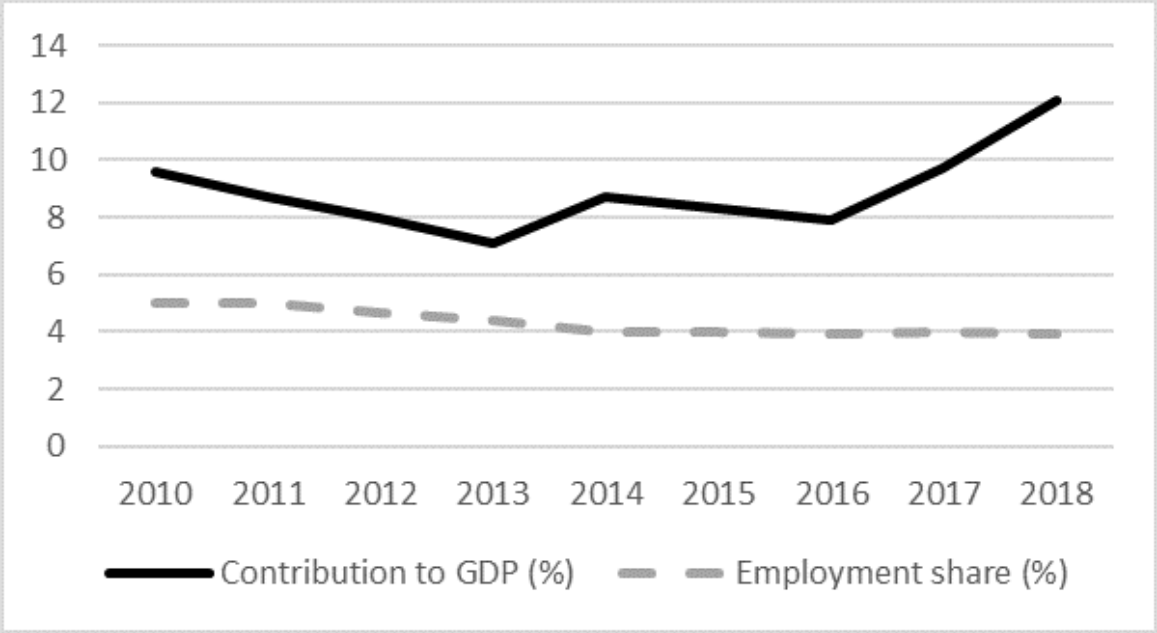
Source: author's elaboration based on World Bank and ILO data.

▶ Figure 1. Contribution to GDP (% of total GDP) and share of employment (% of total employment) of agriculture, forestry and fishing



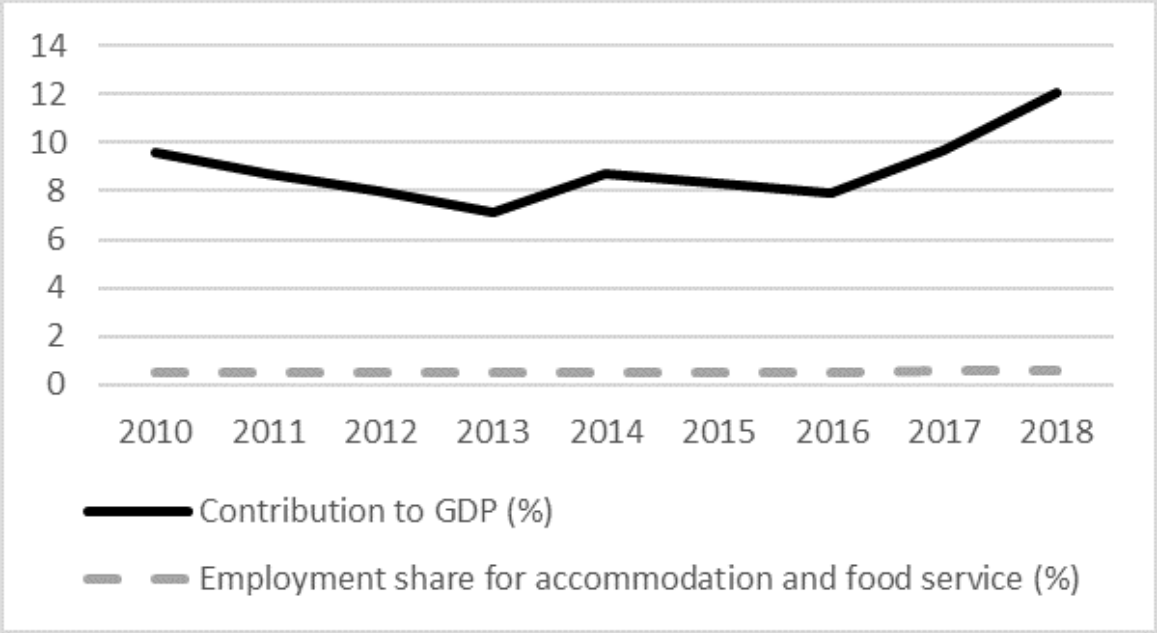
Sources: World Bank and International Labour Organization

▶ Figure 2. Contribution to GDP (% of total GDP) and share of employment (% of total employment) of manufacturing



Sources: World Bank and International Labour Organization

▶ Figure 3. Contribution to GDP (% of total GDP) and share of employment (% of total employment) of tourism



Sources: KNOWMA and International Labour Organization

The following is a brief description of the negative environmental impact of the economic sectors mentioned above. Their scale and development are relevant for the preservation of natural resources.

Mining

This sector has been the one contributing the most to GDP growth in Zimbabwe in 2018. According to the "Transitional Stabilisation Programme", the national government envisages further expanding extraction activities in the country (Republic of Zimbabwe, 2018).

Mining is among the top polluting industries in the world. It is number 2 in the most recently updated ranking issued by NGOs Pure Earth and Green Cross Switzerland. Mining wastes often include pollutants, such as mercury, lead and cadmium. Clean technology exists, but irresponsible practices still occur (Pure Earth, 2016).

As already indicated in section 3.2, mineral deposits in Zimbabwe are located in areas with high biodiversity levels. The most negative impact of mining operations on the environment occurs on the site, through habitat loss and land degradation. Negative effects on biodiversity can be recorded also across regions and landscapes, through chemical and physical mining waste discharge on air and water. The development of infrastructure to support mining operations is another element causing environmental degradation. As a matter of fact, human populations move to the mining site bringing further land use changes and over-exploitation of natural resources with additional biodiversity losses (Sonter et al, 2018).

In several cases, in Zimbabwe mineral extraction has led to the displacement of communities depriving them of housing, water and livelihoods. Cities and towns have been created around mining sites. It often happens that mine dumps and pits are left open causing serious threats to the life of people and livestock in those areas. Roads have been ruined and bridges have collapsed due to heavy trucks serving mining companies (Mtisi, 2011).

Box 1.

The negative environmental impacts of extraction activities on women

Mutoko is a rural district in North-Eastern Zimbabwe. Black granite extraction started in the 1970s and has attracted several mining companies. Women suffer more than men the negative consequences of mining on the environment:

- Women are excluded and marginalized from decision-making processes concerning the extraction of black granite. When local communities are consulted, households are represented by men.
- Granite mining is causing massive land displacements. Reclamation is not conducted on dismissed sites and land degradation is rampant. Women lose their farming fields which they need for livelihoods.
- Even when women can keep their fields, noise pollution and rock waste disposal lead to impoverished soil quality, poor harvests, and loss of vegetation cover and of biodiversity. Farming fields are turned into sandy areas. Dust covers leaves, which inhibits plants growth.
- As a consequence of blasting of quarries, house and school walls crack, generating a constant feeling of insecurity, particularly for women and children who spend more time than men at home.
- Trampling of trucks near and through the fields has a negative impact on the yield from crop cultivation and vegetable gardens which are women's livelihoods.
- Women are not recruited in granite mining activities, not even for cleaning services, as blasting quarries remains a sector reserved to "strong men".
- When men die or are seriously injured as a consequence of accidents at the mining site, women become the only breadwinners in the family and must rely on their heavily stressed farming land to survive.
- Sexual and gender-based violence is common in mining areas. Because of male mine workers and mining-induced poverty, women are more exposed to unprotected sex.

Source: Zimbabwe Environmental Law Association (2017)

Women involved in large-scale mining are only 2 per cent of the total population operating in the extractive industry in Zimbabwe. Female representation is much larger among artisanal minors, where women are about 50 per cent (ZELA, 2016).

Women miners focus on gold and chrome mining. Gold miners largely operate in the informal economy. Artisanal extraction activity is based on the registration of mining claims. Acquiring claims and paying for the necessary licences, fees and equipment that mining requires is much more complicated for

women than it is for their male counterpart. Women are in general poorer than men are and, in addition, they are confronted with cultural barriers to their venturing into mining activities. Moreover, mining services are normally owned and managed by men who tend to favour their male clients (ZELA, 2018).

Artisanal small-scale gold mining ranks number 5 among the most polluting industries in the world. Individual gold miners are usually poor and cannot afford to purchase modern technology, which would be safer for them as well as for their surrounding environment. This economic activity accounts for 20 per cent of the total gold production on earth, but it is the main cause of mercury pollution in the world (Pure Earth, 2016).

Artisanal miners are over one million in the whole country (Republic of Zimbabwe, 2015). Unlike large-scale mining, the artisanal extractive industry is labour intensive and applies manual procedures. The negative environmental effects of artisanal gold mining fall under two categories: physical, including river siltation, loss of vegetation and degradation of natural resources, and chemical, mainly from mercury. Negative environmental impacts bear consequences both on the landscape and on human beings. In particular, mercury poisoning affects over half of artisanal miners, causing symptoms such as general body weakness, nausea, loss of teeth, and respiratory problems (Maponga and Ngorima, 2003). Chemicals from mining cause water pollution and river siltation, which threatens endogenous fish species (Republic of Zimbabwe, 2014).

Farming and small-scale mining are the two principal income generation strategies for rural communities in Zimbabwe. Droughts and other agricultural challenges have often led poor farmers to venture into small-scale gold mining as a complementary income source. Artisanal mining has also become a viable way to raise funds to invest in agriculture. However, when mining does not yield revenue, returning to farming is a good livelihood option. Artisanal gold mining and farming are intertwined (Mkodzongi and Spiegel, 2019). They may secure more stable income if pursued jointly.

Agriculture and forestry

Agriculture accounts for 15 to 20 per cent of Zimbabwe's GDP (FAO, 2017). Its expansion bears several negative consequences on the environment. It is a major cause of biodiversity loss and deforestation through uncontrolled fires. In addition, cultivation and overgrazing are the cause of wetland degradation (Republic of Zimbabwe, 2015). Chemicals from agriculture and the subsequent water pollution and river siltation threaten indigenous fish species (Republic of Zimbabwe, 2014).

Over 70 per cent of the Zimbabwean labour force is directly or indirectly employed in agriculture (GoZ, 2015A). About 86 per cent of Zimbabwean women rely on land for livelihood and food production. They are the majority of smallholder farmers (FAO, 2017). Climate change and soil fertility depletion are the main factors limiting the increase of food production for smallholder farmers. Sustainable agricultural practices are needed, because they improve field production and could discourage the expansion of land used for agriculture, while preserving natural resources (Murendoa et al, 2016).

Over the past decade, sugarcane cultivation for biofuel production has remarkably increased in Zimbabwe. Women suffer more than men the negative impact of land use changes linked to ethanol production. They are often deprived of the fields, which were their source of food and cash crops. In fact, the previously existing cotton and maize farming fields replaced by sugarcane plantations were mainly their economic activities. Men are preferred to women in employment in biofuel production. In addition, deforestation resulting from the establishment of sugarcane plantations has had negative effects on those people, especially women, whose livelihoods depend on non-timber forest products. Last but not least, because of the large sugarcane plantations and the pollution they generate, women must travel much longer distances than in the past to obtain clean water and fuelwood for household energy needs (ZELA, 2016B).

Zimbabwe's deforestation level has remained stable over the past twenty years. The country ranks third in Africa after Sudan and Nigeria for deforestation rate (FAO, undatedB). A 36.6 per cent decline was recorded between 1990 and 2015 (GoZ, 2017). During the period 2010-2014, tobacco farming accounted for 15 per cent of national woodlands loss (Republic of Zimbabwe, 2015). About 70,000 ha of forestland is converted to agriculture annually (GoZ, 2017).

Besides agriculture, since 2011, other factors also determined deforestation. First of all, the commercialisation of firewood linked to electricity cuts has risen. Second, non-timber wood products, such as honey and wild fruit, which are normally the livelihoods of poor communities in years of drought, have been increasingly sold by urban dealers who abuse of forest areas. Last but not least, medicinal plant species are over-harvested with a few of the 500 known species becoming at risk of extinction (Republic of Zimbabwe, 2015).

Tourism

Since the independence of the country in 1980 until 2000, tourism recorded a rapid growth. Then the sector followed a rather fluctuating development path, due to economic and political instability (Muzvidziwa, 2013; Abel and Le Roux, 2017). Last year, the sector started to grow again, and the national government expects a 20 per cent growth rate within two years (GoZ, 2019B).

Tourism in Zimbabwe relies on wildness and on the products and services of protected ecosystems. During the period 2010-2014, poaching has reached very high levels negatively affecting in particular the elephant's population. Increased human settlement has led to rising poaching for bush meat (Republic of Zimbabwe, 2015).

Nature conservation is very important for tourism. The Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) is a conservation programme that was introduced in Zimbabwe in the 1980s. It is an innovative rural development strategy that allows marginal communities to complement their income from subsistence farming with economic benefits from consumptive and non-consumptive tourism and safari hunting (Jonga and Pangeti, 2015). It is a successful experience, which shows that where local communities have ownership over wildlife, resources are conserved and harvested in a sustainable and economically viable way. This is an illustration of eco-tourism, which is widespread in the country. Letting local communities benefit from natural resources in national parks has led to a decrease in poaching and other illegal activities (Muzvidziwa, 2013).

Manufacturing

The performance of manufacturing has not been very successful in Zimbabwe. Its contribution to GDP has been declining from 15.5 per cent in 2009 to about 9 per cent in 2015 (GoZ, 2017). In 2019, it is expected to reach 2.5 per cent after recording a minimum level of 1.7 per cent in 2018 (GoZ, 2019A). The driving sub-sectors are metals and metallic products, drinks and tobacco, foodstuffs, chemicals, and textile and ginning (Dube, 2011). Agriculture provides 60 per cent of the raw materials needed by the manufacturing industry in the country (FAO, undatedB).

There were attempts to revive the leather sub-sector in 2013 (ITC, 2013). Crocodile farming is a major income activity. Skins are sold mainly to Europe (Republic of Zimbabwe, 2015). Tannaries rank number 4 of the most polluting industries in the world. Tanning is the process of turning animal hides and skins into leather. It involves the use of chemicals like chromium, alum and tannins and generates large amounts of waste which are detrimental to human health and the environment (Pure Earth, 2016). The leather industry emits wastewater, solid waste and air pollution. Cleaner production options do exist and are cost-effective in the long run. They should be systematically applied (Dandira et al, 2012).

Two other manufacturing sub-sectors appear in the list of the top ten most polluting industries. Chemical manufacturing ranks number 8. It includes plastics, paints, explosives, dyes, pharmaceuticals and petrochemicals. A significant volume of toxic waste and by-products are created during the production phase, resulting in environmental contamination and induced diseases. Product manufacturing is the ninth most polluting industry on earth. It involves the use of many chemicals. Effluents from this economic activity include chromium, lead, cyanide, mercury and cadmium (Pure Earth, 2016).

Energy

Over the past few years, electricity demand in the country has increased. Power outages are frequent and many enterprises must use diesel-powered generators in peak periods (Makonese, 2016). Only 34 per cent of households receive electricity nationwide, including 81 per cent in urban areas and 10 per cent in rural ones (GoZ, 2017).

Hydropower and coal are the two sources of energy in the country. Electricity from water reaches 57 per cent of the total, whereas coal supplies the remaining 43 per cent. The availability of water has been decreasing over time and has reduced the provision of energy from this source. As per coal, there are deposits that are still underutilized in Zimbabwe. In recent years, Chinese investments have provided further support to the carbon-intensive energy sector in the country through the funding of coal-based power-stations (Makonese, 2016). Coalmines are detrimental to the environment not only for carbon emissions, but also for the open burning coal pits where individuals, especially children and women, fall by accident. In addition, black smoke and dust cause respiratory problems to local inhabitants (Makokoba, 2018).

Zimbabwe could be a leading country for renewable energy in Southern Africa. Solar energy has a great, yet unexploited potential. Biomass energy from wood, grass, forage, shrubs, and plant and animal waste is used by about 80 per cent of the Zimbabwean population. Sadly, though, burning wood for energy production leads to deforestation. Modern technology to produce biomass energy should be introduced. The sugarcane industry has also great potential to become a relevant source of clean energy in Zimbabwe (Makonese, 2016). Renewable energy consumption was 75.6 per cent in 2012 (GoZ, 2017).

Transport

Since the early 2000s, the transport sector has become known as the main source of air pollution in African cities. Transport systems emit gases including CO_2, NO_2, SO_2 and volatile organic compounds. Second hand cars, which are very common in Africa, and poor road conditions result in traffic congestion causing fuel wastage and air pollution (UNEP, 2006). In Zimbabwe, in 2015 the share of GHG emissions of the transport sector was 12 per cent (Nachmany et al, 2015).

It is to be noted that 70 per cent of vehicles are concentrated in Harare, the capital city, where only 16.2 per cent of the total national population live. The result is severe congestion, which private minibuses and informal taxis largely contribute to. Roads are in poor conditions and traffic signals do not function well, which further aggravates congestion and pollution (Chenjerai Mbara, 2015).

Roads construction changes the landscape and can have negative impacts on wildlife. Roads can also lead to human population shifts which can result in new sources of pollution. Animal mortality and habitat fragmentation increase and negatively affect populations of plants, animals and insects. Roads bring not only chemical pollution, but also noise and light which are disturbance factors for animals and plants (Hill, 2019).

Construction

Construction includes the creation of buildings for living in cities, towns and villages and also the implementation of infrastructure for development. The construction sector in Zimbabwe has a great potential and could account for as high as 20 per cent of annual GDP. The often-unfavourable economic situation of the country has severely limited the growth of the sector (Chirisa, 2014).

Infrastructure is necessary for a country's development, but it can have devastating effects on the environment. Roads, dams and other artificial structures alter natural habitats and have negative impacts on biodiversity. Ecosystems can be damaged during the construction phase of dams and roads and further destruction due to the new installations can continue for decades (WWF, 2019).

Construction generates soil, air and water contamination, solid and liquid toxic waste, noises and visual disturbing elements. It however seems that the biggest negative impact of this sector on the environment comes from the manufacturing phase of building materials (Emperor Alexander I State Transport University, 2017). Furthermore, construction is a waste-intensive industry. For example, it produces up to 35 per cent of total waste to landfill in the United Kingdom (Ajayi et al, 2015).

Land use changes and urban planning are subject to precise regulations in Zimbabwe. Standards try to assure order, health, security and amenity for the population. Sadly, though, these standards are too high for low-income families to meet. Hence, urban construction is low despite a high demand for houses. The result is uncontrolled informal urban development with sprawling cities having a negative impact on the natural landscape, which is artificially altered, and on the environment more broadly,

because they spread out carbon emissions (Chirisa, 2014). Careful urban planning, though, has secured an adequate urban sanitation system (UNFCCC, undated).

In some cases, environmental issues are not given due consideration in Zimbabwe. For example, a project to build a shopping mall on a wetlands area in Harare was authorised, despite the fact that wetlands are critical to supply water to the capital city (Chirisa, 2014).

3 Legislation for environmental protection in Zimbabwe

Unlike other Southern African countries, Zimbabwe has a comprehensive body of environmental legislation which covers all the most relevant areas of concern. Important environmental protection acts date back to the early 1940s (UNFCCC, undatedB). Until 2002, environmental legislation was fragmented and included over eighteen acts involving the responsibility of eight different ministries. This wealth of regulations resulted in duplication and overlap until the Environmental Management Act was adopted (Maome et al, 2012).

The 2002 act harmonizes all issues concerning environmental management, compliance and monitoring. It also strengthens regulations on environmental impact assessment (Chirisa and Muzenda, 2013). An environmental impact assessment policy was first introduced in Zimbabwe in 1994. In 2014, while reviewing for the first time the implementation of its policy, the government expressed its concern for the high cost of compliance due to unnecessarily high consultants' fees charged to private investors (Machaka, 2014).

Zimbabwe values environmental protection to the point that the most salient features of environmental stewardship have been included in the principal source of law in the country. The new Constitution of Zimbabwe which was adopted in 2013 contains a specific section titled "Environmental rights". One may say that a human-centred approach has been followed, in that the first clause states that "Every person has the right..." to an environment which is safe for their health and well-being. The provisions that follow refer to sustainable development and the need to safeguard the environment for future generations, clarifying that "... ecologically sustainable development and use of natural resources while promoting economic and social development" must be secured. The challenge to strike a balance between economic and social development on one hand, and stewardship of the environment on the other is well acknowledged by national legislators. The final clause of this section calls on the State to "... take reasonable legislative and other measures ..." "... to achieve the realisation of the rights set out in this section." (Parliament of Zimbabwe, 2013, section 73).

The environmental rights clause was first introduced in the 2002 Environmental Management Act. It is to be noted that environmental rights do not mean only access to and control over natural resources, but also stewardship with an obligation to protect the environment. Sound environmental management requires a global action where different actors with specific concerns are involved. Subsequently, environmental rights entail participatory approaches reaching out to local citizens, environmental stakeholders, the private sector and public institutions (Chirisa and Muzenda, 2013).

An Environmental Management Agency was established by the 2002 Environmental Management Act for the implementation of the bill's provisions. Unfortunately, the agency does not receive adequate funding. In addition, the 2002 Act gave the Environmental Management Agency responsibility to enforce all existing environmental acts, but did not consider that different government departments remained in charge of the implementation of environmental law. As a result, overlaps in duties and alternative fine structures for the same infringement emerged (Maome et al, 2012).

The poor implementation of the 2002 act is due also to other factors, such as the lack of definitions of roles and responsibilities of different sectoral ministries, the poor participation of stakeholders, the lack of data to monitor implementation and impact, weak enforcement with some private companies polluting without being sanctioned, poor political will, overlaps of institutions in the enforcement of environmental law, ignorance of the law by farming, communal and urban settlers, and limited resources for inspection and enforcement. Another interesting reason accounting for the poor implementation of the Environmental Management Act is the non-reliance on traditional chiefs as custodians of environmental law. In pre-colonial times, traditional chiefs had full control over natural resources and were responsible for monitoring their use. Environmental assets were utilised in a sustainable way. According to traditional chiefs, control and monitoring of natural resources should occur within their jurisdiction as in the past, with technical support from existing institutions. The 2002 Act states instead

that environmental committees should monitor the environment for local authorities in their area of jurisdiction (ibid).

The Traditional Leaders Act [Chapter 29:17], adopted in 1998 and amended in 2001, grants a number of environmental protection functions to traditional chiefs and leaders. A traditional chief must ensure '...that the land and its natural resources are used and exploited in terms of the law ...' (Parliament of Zimbabwe, 1998, Section 5). In particular, a traditional chief is responsible for controlling abuses, such as over-grazing and over-cultivation, negative actions concerning the destruction of flora and fauna, and any degradation, abuse or misuse of land and natural resources in his area. Furthermore, he assists development committees in the implementation of local development programmes (Parliament of Zimbabwe, 1998). Clearly, both local governments and traditional leaders have responsibility over environmental protection, which often leads to conflicts between state institutions and traditional ones (Chigwata, 2016).

4 Methodology

The leading role that the private sector is expected to play in the development of the country on one hand, and the difficulties that have been reported in engaging different national stakeholders in a collective action for environmental stewardship on the other make the following research questions key to understand what future steps are to be taken to achieve environmental integrity:

- In Zimbabwe, does adequate legislation to protect the environment exists and is it implemented?
- Are environmental issues of concern and being addressed by the business community in Zimbabwe?
- Which actions can the private sector undertake to fill identified gaps?

The present research is descriptive or exploratory in nature. It is a case-study. An inductive approach has been adopted because, as shown in the foregoing sections, there is no generally applicable theory.

The research approach that has been chosen combines quantitative and qualitative methods (Bryan, 2008). The findings of the quantitative method (a perception survey) are the basis, which a qualitative method (interviews with experts) can build on for better understanding and interpretation. Qualitative data will provide depth and richness. Findings from interviews will provide thorough description, explanations and a holistic view to the issues presented and discussed.

Quantitative data were collected through a perception survey. This instrument was adopted because it can be used as a diagnostic tool to identify issues for enterprises and inform future reforms in the country. Furthermore, a perception survey allows us to obtain information on the level of awareness, interest and recognition of the business community concerning regulations, reforms and institutions (OECD, 2012).

The survey targets the first two research questions, whereas the third question is addressed through interviews with field experts. As can be inferred from the first two research questions above, the variables that can be explored are discrete in nature. Only nominal and binary scales of measurement can be used for data analysis. For this reason, the data that were collected through this survey ought to be classified as qualitative rather than quantitative.

The survey was conducted from 15 November 2016 to 15 February 2017, on the initiative of the Employers' Confederation of Zimbabwe. The survey data are not very recent. It is nonetheless believed that perceptions may not have changed much since the time when the survey was carried out. This was confirmed by technical experts.

The questionnaire focused on all the seventeen conditions of an enabling environment for sustainable enterprises as described by the 2007 International Labour Conference. The specific research questions on "Responsible stewardship of the environment" were not developed based on a thorough literature review and exhaustive knowledge of the situation, but were rather part of a standard questionnaire which is used in all the countries where the ILO conducts assessments of the business environment. It is to be noted, though, that the specific questions were examined by representatives of Zimbabwean employers, workers and the government at a workshop and adjusted to the national context. In addition, interviews to field experts will help shed light on issues that other different and more focused questions could have explored.

A national private firm, Industrial Psychology Consultants, carried out the survey and delivered a report that remained unpublished and whose findings are contained in the ILO report on the assessment of the business environment in Zimbabwe (See ILO, 2018). Because the survey covered many more aspects than "Responsible stewardship of the environment", several interesting findings which required the consideration of more and different variables remained unexplored. Using the original survey data, this paper tries to describe the trends of additional variables that had been neglected and present the perception of different categories of respondents focusing only on environmental protection.

The private sector in Zimbabwe is largely and increasingly informal (ILO, 2018). A major weakness, which is also a strength, of this survey is that it includes informal enterprises. This is a weakness in that it is not possible to use formal probability sampling techniques, as there is no database or lists of informal businesses, which can serve as sample frame. Survey findings can therefore not be generalised to the whole population. It is a strength because it is possible to shed light on aspects of informality which usually remain unknown and which concern the majority of private firms in the country.

The target population includes all Zimbabwean people in the chosen geographical areas who are involved in the provision of labour or in managing or owing an enterprise. The survey was carried out in six areas/cities: Harare, Bulawayo, Victoria Falls, Mutare, Midlands and Chitungwiza. National stakeholders including representatives of employers, workers and the government determined the geographical coverage of the survey. Cluster sampling was applied across those six areas. The population was divided into clusters or groups which were then randomly sampled.

Surveyed firms operate in the following economic sectors: agriculture, construction, financial services, manufacturing, mining and tourism. These sectors are represented in all of the six areas listed above and were selected by tripartite stakeholders as being particularly relevant. It is to be reminded that the survey covers all the seventeen conditions of an enabling environment for sustainable enterprises as defined by the 2007 International Labour Conference and not only "Responsible stewardship of the environment". This means that sectors were identified without any specific reference to their impact on the environment.

Due to budget constraints, a total of 581 questionnaires were completed. Respondents were owners, managers and workers of businesses. The sample population of enterprises was drawn from the number of firms registered with the National Social Security Authority, SME Association of Zimbabwe, Confederation of Zimbabwe Industries, Zimbabwe National Chamber of Commerce, and Zimbabwe Chambers of Mines in each one of the six areas in proportion to the total number of businesses registered in the six areas. This percentage was used to identify the number of respondents to be selected from the total 581. Stratified random sampling was applied to select respondents. From an overall heterogeneous population, homogeneous sub-populations or strata were generated and random sampling was applied within strata. The SME Association of Zimbabwe and the Ministry of Small and Medium Enterprises and Cooperative Development on a local level provided support to determine the best stratification approach for the concerned area (IPC, 2017).

To identify informal units, the definition contained in the 1993 ILO resolution concerning Statistics of Employment in the Informal Sector was used. In particular, the first part of paragraph 5 was considered:

'The informal sector may be broadly characterised as consisting of units engaged in the production of goods or services with the primary objective of generating employment and incomes to the persons concerned. These units typically operate at a low level of organisation, with little or no division between labour and capital as factors of production and on a small scale. Labour relations where they exist -are based mostly on casual employment, kinship or personal and social relations rather than contractual arrangements with formal guarantees.' (ILO, 1993, para. 5)

This definition applies to completely unregistered economic units, but also to those, which are registered in one of the following ways or whose enterprise (as employer) is registered:[4]

- Registry of municipal business licenses;
- National Social Security Authority;
- Zimbabwe Revenue Authority;
- National Employment Council; and
- Any bank for a bank account.

Formal probability sampling could not be applied to those entities which were not registered anywhere. A combination of random sampling and purposive sampling was used to select informal respondents

[4] For detailed information on different forms of informality, see the 2018 ILO publication titled "Women and men in the informal economy: A statistical picture".

(IPC, 2017). This means that the units of study were partly selected according to set criteria or with a purpose.

The total number of observations for different variables was not always 581. Each specific variable was considered for the actual number of observations available.

Emerging trends stemming from data analysis were discussed with three Zimbabwean technical experts chosen from the academia (Expert 1), a national environmental NGO (Expert 2) and the private sector (Expert 3), respectively. The three specialists were selected according to their contributions to the literature presented in the foregoing sections and their expertise on emerging issues. They were individually interviewed via Skype for 30 minutes. They were provided with a one-page summary of survey findings. The same five questions were asked to each one of them.

5 Results and discussion

Characteristics of respondents

Not all 581 respondents answered the total number of questions which were asked or not all responses were always recorded. Of all those for whom data are available, 56 per cent (290) were formal units and 44 per cent (228) were informal. It is to be noted that only 20.7 per cent of all surveyed businesses were not registered in any form. The share of informal employment in Zimbabwe increased from 80 per cent in 2004 to 94.5 per cent of total employment in 2014. In 2012, 85 per cent of SMEs were not registered (GoZ, 2017).

Assuming that sustainable enterprises must be formal, then quite a few of the firms which were surveyed can be seen as heading towards becoming such. Moreover, considering the six principles of sustainable enterprises described in section 2.2, only few of the firms covered by the survey met all of them, as their prevailing small or micro size does not lend itself to an easy implementation of such principles.

The average number of employees was 73 and in two instances, only one individual was involved. In one case, the surveyed firm employed 6000 people. This was an exceptionally large enterprise in the sample. The median was 12 employees, indicating the rather small size of the surveyed businesses.

Men represented the large majority of surveyed units. They were 65.6 per cent, whereas women were 34.4 per cent of those whose sex is known. The large number of men may be due to the fact that some economic sectors are male dominated, such as mining where all respondents about whom data on sex are available were men and construction where male interviewees were 85 per cent of the total.

Of all informal respondents whose sex is known, women were 35.6 per cent and men 64.4 per cent, reflecting the gender distribution of the sample rather than a female connotation of the informal economy in developing countries (Bonnet et al, 2019). As already noted, the findings of the present survey cannot be generalised to the whole population and this fact may account for the unusual trend described above.

Over half of the sample were aged between 25 and 44 years. The cohort aged 25-34 years corresponded to 34.5 per cent, and the group aged 35-44 years represented 28.5 per cent of all interviewees.

Of all respondents, 39.8 per cent were business owners, 35.3 per cent managers and 24.5 per cent workers. Interestingly, as Table 2 shows, the share of surveyed women holding a position of "owner" is larger in the informal economy than in formal economic activities. Globally, employers are a smaller share of women's total employment than men's both in the formal and in the informal economy (Bonnet et al, 2019).

Table 3. Type of occupation by sex and formalization status (%)

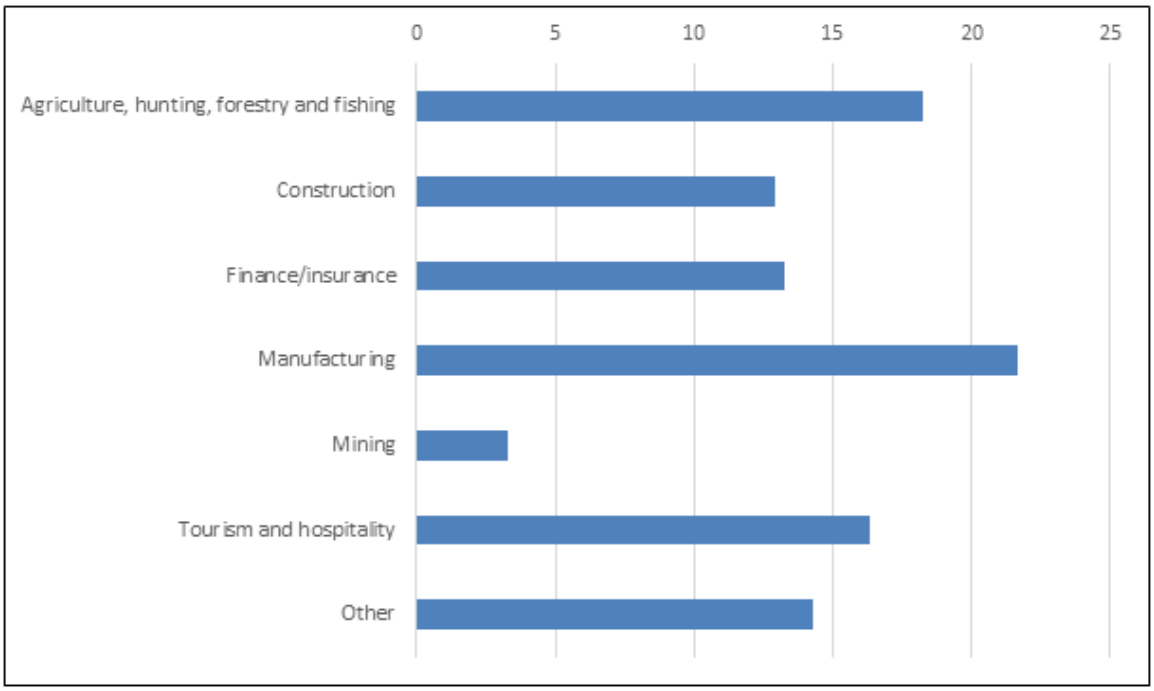
	Formal				Informal			
	Owner	**Manager**	**Worker**	**Other**	**Owner**	**Manager**	**Worker**	**Other**
Male %	78.3	69.6	56.1	0.0	63.9	78.8	51.3	0.0
Female %	21.7	30.4	43.9	0.0	36.1	21.2	48.7	0.0

Source: Industrial Psychology Consultants, 2017.

Considering respondents by economic sector, 18.2 per cent of them were active in agriculture, hunting, forestry and fishing, 12.9 per cent in construction, 13.3 per cent in finance and insurance, 21.7 per cent in manufacturing, 3.3 per cent in mining, and 16.4 per cent in tourism and hospitality. The answer of a rather large share of respondents equal to 14.3 per cent of the total can be classified as "other". To

answer the research questions of the present paper, data from finance and insurance will not be considered, as this sector has no major impact on the environment. It is also to be noted that transport and energy, two other sectors among those having the strongest negative effect on natural resources as described in section 3.4, are not covered by the survey.

Figure 4. Distribution of respondents by economic sector



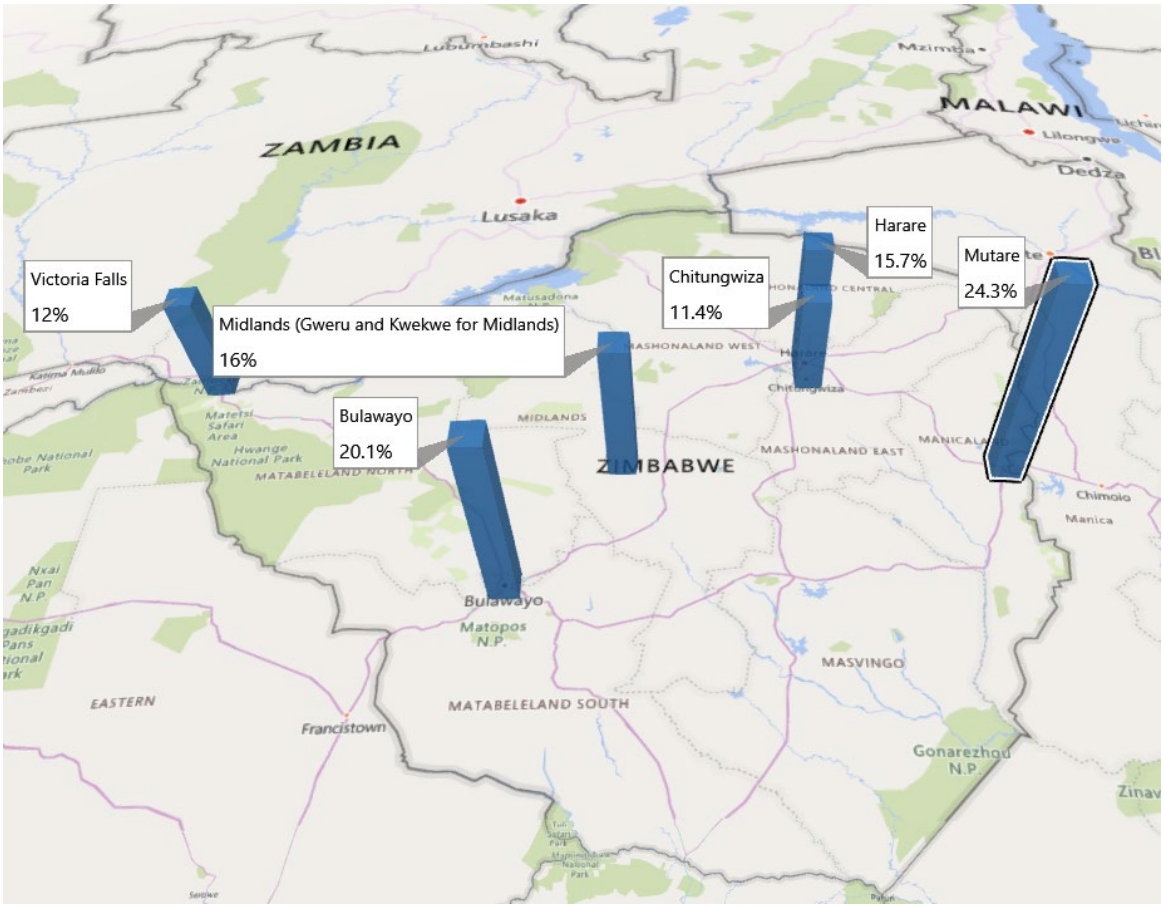
Source: Survey data

The area/city of respondents is known for all 581 units. The largest share of the sample, 24.3 per cent, was selected from Mutare, a river catchment where alluvial mining activities especially by people panning gold have increased in recent years (Republic of Zimbabwe, 2015). A proportion of interviewees as high as 20.7 per cent was chosen from Harare, the capital city, where most industrial activities take place and where three of the seven national wetlands designated as RAMSAR sites are located. Infrastructure development, housing construction and informal agriculture are causing a fast deterioration of wetland ecosystems in this area (ibid). Chitungwiza is a city near Harare, where some additional 11.4 per cent of respondents were from.

Two cities were selected to represent the Midlands region in Central Zimbabwe. These cities are Gweru, the capital of the province, and Kwekwe, which has the richest industries in mining and manufacturing. Discoveries of gold and the presence of chrome and coal have made of mining a key economic activity in the Midlands (ibid). The share of interviewees from this area in total is 16 per cent.

Bulawayo is the second largest city in the country. A total proportion of 15.7 per cent of respondents came from this area. A share of 12 per cent of interviewees was selected from the Victoria Falls region. This is a UNESCO World Heritage site and hosts the homonymous national park, which is particularly important for biodiversity and tourism.

Figure 5. Distribution of respondents by area/city



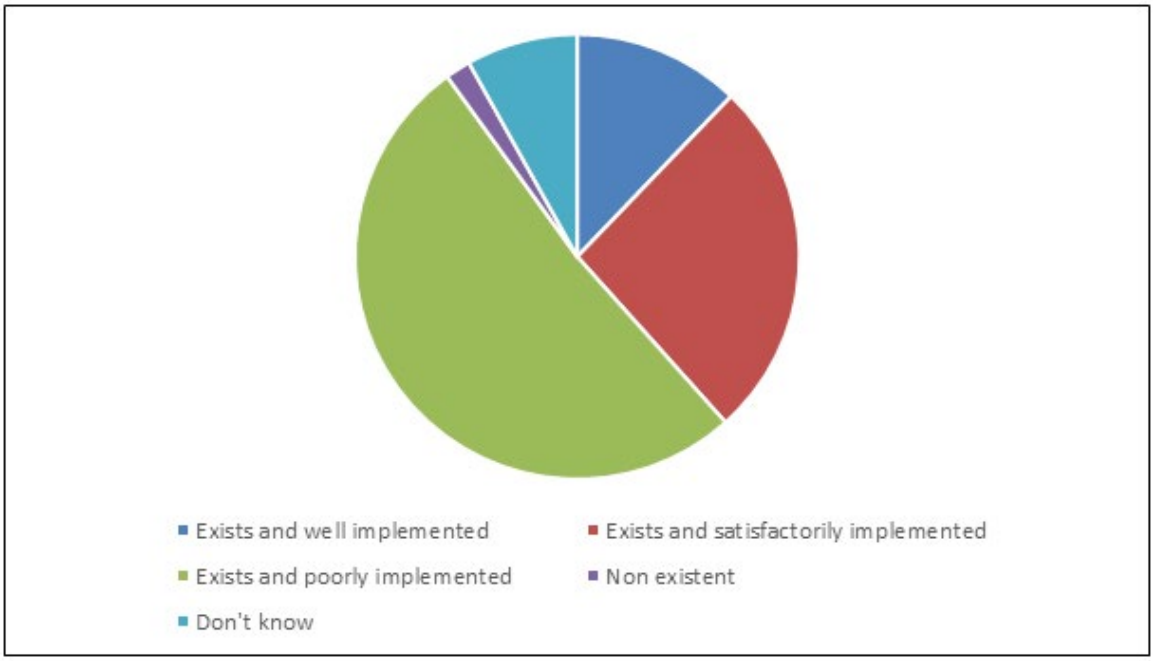
Source: Survey data

In Zimbabwe, does adequate legislation to protect the environment exist and is it implemented?

As discussed in section 4, Zimbabwe presents a rather comprehensive legal framework for environmental protection. It is important to define the level of awareness of the business community about this reality.

Of the 542 interviewees who answered this question, only 1.8 per cent (10 people) said that legislation is non-existent, in clear contrast with reality. Another 8.1 per cent did not know. The bulk of respondents, 51.7 per cent, expressed the view that it exists, but it is poorly implemented. A good share of interviewees equal to 26.2 per cent declared that it exists and is satisfactorily implemented and 12.2 per cent were of the opinion that it exists and is well implemented. These findings indicate that, for a considerable proportion of surveyed units corresponding to 38.4 per cent, legislation to protect the environment in Zimbabwe is adequate and rather effective.

▶ Figure 6. Does adequate legislation to protect the environment exist and is it implemented? - By type of answer



Source: Survey data

Let us explore the characteristics of the majority of interviewees who were unhappy and believe legislation is poorly implemented.

Men thought more than women that legislation to protect the environment is poorly implemented - Women are 28.6 per cent of this group of respondents, which is less than the share of female interviewees that revealed their sex (34.4 per cent). Men are 64.3 per cent, which is closer to their overall share of respondents who disclosed their sex and which was 65.6 per cent. If we further enquire and compare men who answered that legislation was poorly implemented on one hand to male respondents who said legislation was well or satisfactorily implemented on the other, shares are of 51.6 per cent and 33.8 per cent respectively. The corresponding figures for women are 43.7 per cent and 37.7 per cent. It can be concluded that male interviewees have more negative views than female ones. This may hint at the fact that serious environmental issues are recorded in male-dominated sectors, as will be shown in the analysis of answers by economic sector in this section and in the next.

Formal respondents believed that legislation to protect the environment is poorly implemented more than informal ones Of all respondents who gave their formal or informal status, the respective proportions reporting that legislation to protect the environment exists but is poorly implemented are 53.6 per cent and 39.6 per cent. Let us remember that the respective shares of formal and informal interviewees were 56 per cent and 44 per cent. It seems that informal respondents are more satisfied than formal ones. This finding is confirmed by the proportions of views within homogeneous groups. Formal units who answered that legislation was poorly implemented are 51.7 per cent against 33.8 per cent of the same group who said that legislation is well or satisfactorily implemented. The corresponding shares of informal interviewees are 48.7 per cent and 36.4 per cent. Informal interviewees have more positive views about the implementation of legislation to protect the environment than formal ones. This optimistic stance could be due to unawareness determined by a lower education and skills level, more inadequate and unsafe environmental working conditions and marginalisation compared to formal respondents (LEDRIZ, 2015).

Younger respondents aged 25-34 years had slightly more negative views about law implementation than older ones aged 35-44 years - Concerning relevant age cohorts, respondents aged between 25-34 years were 34.5 per cent of the total and represented 34.6 per cent of those who think legislation to protect the environment is poorly implemented. The group aged between 35-44 years constituted 28.5 per cent of the total sample and were 27.9 per cent of those who share the same opinion. Considering views within age cohorts, of those aged 25-34 years, 49.2 per cent said that legislation is poorly implemented and 37.1 per cent answered that it was well or satisfactorily implemented. The

corresponding proportions for the group aged 35-44 years are 47.9 per cent and 33.7 per cent respectively. As of 2018, 67.7 per cent of the Zimbabwean population were between 15 and 35 years of age. They experience unemployment, poverty and marginalisation more than other age groups (OHCHR, 2018). Their particularly unfavourable conditions compared to other segments of society may account for their more negative opinions about the implementation of environmental law in Zimbabwe.

Table 4 sums up the shares of owners, managers and workers finding that legislation to protect the environment is poorly implemented as opposed to those who believe it is well or satisfactorily enforced.

▶ Table 4. Perception of environmental law enforcement by job category (%)

Job category	Law is well or satisfactorily implemented	Law is poorly implemented
Owners	39.3	46.7
Managers	33.7	46.3
Workers	31.8	56.1

Source: Survey data

Workers more than owners and managers thought that environmental legislation is poorly implemented - The share of owners and that of managers who thought that environmental legislation is poorly implemented are similar, totalling about 46 per cent. The proportion of workers who supported this opinion is much higher and reached 56 per cent. Environmental protection means safer working conditions. For example, spills of chemicals are polluting for the environment and detrimental to workers' health. One possible explanation for this particularly strong view of employees may be found in the fact that in Zimbabwe, employers are supposed to provide personal protective equipment to their workers by law. Sadly, they often lack the financial resources to purchase helmets, masks and other safety equipment causing a general feeling of dissatisfaction among their labour force (Expert 2).

The economic sector and the area of origin of respondents may have a stronger impact on the views that are being analysed in this section as these variables bear more weight on the environment. Table 5 shows the shares of interviewees who believed that environmental legislation is poorly implemented by economic sector.

▶ Table 5. Respondents who think legislation to protect the environment is poorly implemented by economic sector (%)

Economic sector	Share of total respondents	Share of those who think legislation is poorly implemented
Agriculture, hunting, forestry and fishing	18.2	16.7
Construction	12.9	16.8
Manufacturing	21.7	19.6
Mining	3.3	3.6
Tourism and hospitality	16.4	16.8

Source: Survey data

Respondents from construction, mining and tourism thought more than others that environmental legislation is poorly implemented - The most striking findings from table 4 are those concerning construction, mining and tourism, where the proportions of those who said that legislation is poorly implemented are above or similar to the corresponding shares of total respondents.

If we further enquire and consider proportions of views within sectors, we see that in construction, the share of those who were unhappy about the level of implementation of environmental legislation is the highest of all sectors and is as high as 62.7 per cent. The proportion of those who said legislation is well or satisfactorily implemented in this sector is 33.3 per cent. One reason accounting for the high level of negative opinions may be the cost for complying with the legal requirement of an environmental impact assessment prior to the implementation of a construction project. For large companies, financing such an assessment may not be a problem, but for small and micro businesses like in the case of most of the surveyed units, it may well be an excessively burdensome expense (Expert 3). However, in

February 2019 the local currency was devalued (EIU, 2019), which contributed to reducing costs (Expert 2). Conducting an environmental impact assessment may also entail the risk of delaying activities, which may lead to additional costs linked to unmet deadlines. Last but not least, small and micro enterprises, in construction as well as in other sectors, may lack the knowledge and education level to be familiar with environmental legal requirements (Expert 3). The negative perceptions emerging from survey results may be due also to the fact that even when an environmental impact assessment is carried out, the outcome may not be satisfactory in terms of environmental integrity. The reason behind is that it is not clear which benchmarks public authorities and the Environmental Management Agency use for mitigation measures to be deemed adequate (Expert 1). Very often, no monitoring of mitigation measures occurs and planned remedy actions are simply not implemented (Expert 2).

In mining, 52.6 per cent of respondents were of the opinion that legislation is poorly implemented as opposed to 36.8 per cent who thought it is well or satisfactorily enforced. Respondents from this sector belonged to both large and very small businesses, including from the informal economy. Large mining companies are international and tend to be driven by high environmental standards like ISO14001. Most of them have adopted environmental management systems and others are even certified. It is however possible that not all large mining firms perform according to such high-level environmental standards (Expert 3). For example, foreign investment particularly from China is encouraged. Mining activities begin without any prior announcement to the public. The government fully supports such initiatives and favours the lack of information about the operations and their meeting environmental legal requirements (Expert 1). Chinese mining companies perform worse than others in terms of both environmental and social standards. They use old technology that could not be used in China and which is extremely polluting (Expert 2). In the informal economy environmental obligations may be completely disregarded, sometimes with the tacit support of the government, which probably tries to secure livelihoods to poor individuals who would otherwise have no income at all (Expert 1). The Environmental Management Agency is working on a simplified and cheaper environmental impact assessment for artisanal miners. No consultant to technically evaluate the negative environmental effects and corresponding remedy measures to be adopted - as is normally the case - would be required. An environmental management plan would be enough (Expert 2).

In both construction and mining, poor environmental law implementation may be due also to the fact that, as already mentioned, personal protective equipment like helmets and masks should be provided by employers who can often not afford them (Expert 2).

In tourism and hospitality, the share of those who found that law was well or satisfactorily enforced within the sector is 32.6 per cent, whereas the proportion of those who said legislation is poorly implemented is 49.5 per cent.

Considering answers according to the geographical distribution of respondents may provide some additional explanations justifying negative views.

▶ Table 6. Respondents who think legislation to protect the environment is poorly implemented by city/area (%)

Area/city	Share of total respondents	Share of those who think legislation is poorly implemented
Mutare	24.3	22.5
Bulawayo	15.7	15.7
Chitungwiza	11.4	9.6
Midlands	16	13.9
Harare	20.7	23.6
Victoria Falls	12	14.6

Source: Survey data

Bulawayo, Harare and Victoria Falls are the areas/cities where the proportions of those who said that legislation is poorly implemented are above or similar to the corresponding shares of total respondents. Exploring the composition of views within geographical locations may shed some light on perceptions.

In Harare and Victoria Falls respondents felt that environmental legislation is poorly implemented more than in other areas - For Bulawayo, respondents who were of the opinion that legislation is poorly implemented are 48.4 per cent as opposed to 39.6 per cent who thought it is well or satisfactorily enforced. In Harare and Victoria Falls, the proportions of those who said that legislation is poorly implemented are much higher, reaching 55 per cent and 58.6 per cent respectively. For Harare, the share of those who answered that legislation is well or satisfactorily implemented is 35 per cent, whereas for Victoria Falls the corresponding proportion is 20 per cent.

The recorded discontent in the Harare area may be due to the fact that in Zimbabwe, over the past ten-fifteen years, construction in terms of housing has considerably increased, especially in large cities. The legislation on environmental impact assessment is clear, but it does not include any follow-up or monitoring after the evaluation is completed. After impact assessments are conducted and permissions granted, no one checks on the actual environmental impact of approved building activities. As a result, water supply and sewage systems built are inadequate, causing the spread of diseases like cholera (Expert 1).

The picture looks particularly negative in the Victoria Falls area. Of all interviewees from this region, those who were from the tourism and hospitality sector and believed that legislation to protect the environment is poorly implemented were a proportion as high as 31.4 per cent. The Victoria Falls business community is reportedly very much aware of existing environmental obligations and is keen on meeting them. The weak element justifying the negative views of local respondents may be poor control and enforcement of environmental legal requirements. The staff of the government and the Environmental Management Agency are too poorly equipped in terms of both financial resources and skills to perform their control and monitoring tasks in an adequate manner (Expert 1, 2 and 3). Another reason accounting for the discontent recorded in the tourism sector may be the fact that infrastructure is being developed in a way that does not safeguard the environment and simply favours private investment even when it is not environmentally sustainable (Expert 1 and 2). Tourism needs preserved nature. Sadly, trees are cut and wildlife is negatively affected by new buildings and infrastructure (Expert 2).

Are environmental issues of concern and being addressed by the business community in Zimbabwe?

The answer to this question sheds some light on how the performance of private companies with respect to environmental protection is perceived by their own members (owners, managers and workers). Findings should be interpreted taking into account the fact that perceptions may be rather positive, since the survey sample is composed mainly by owners (39.8 per cent) and managers (35.3 per cent) who are responsible for the strategies and actions of their enterprises.

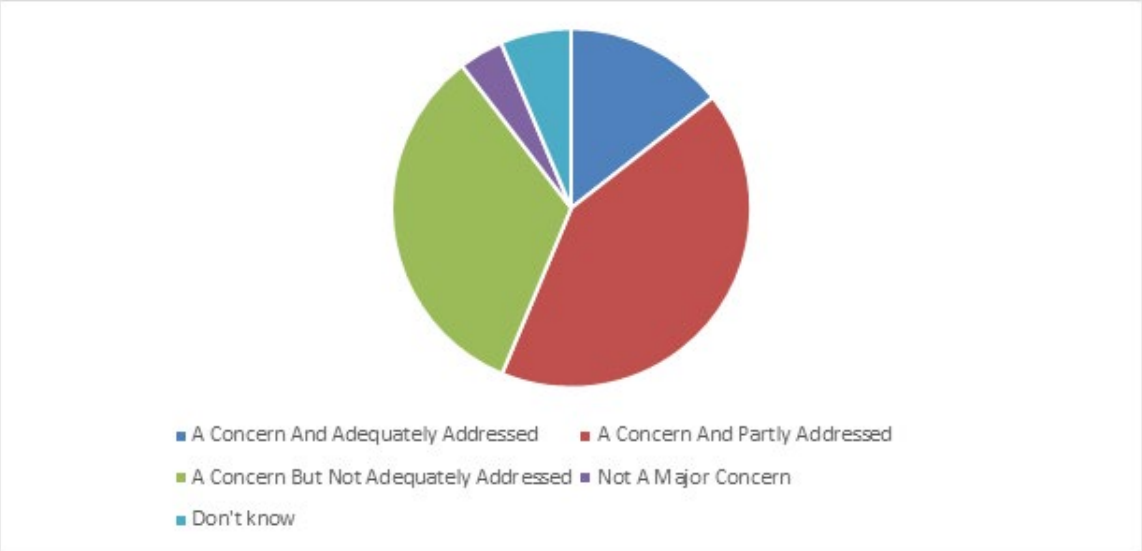
A total of 547 answers were recorded. Interviewees who did not know what to answer were 6.4 per cent. The most negative views according to which environmental issues are not a major concern for the business community were 4 per cent. Half of them were held by owners.

The most positive position stating that environmental issues are of concern and are being adequately addressed by the business community was supported by 14.4 per cent of all respondents. As expected, many of those who subscribed to this view, 44.3 per cent, were owners. More interestingly, 22.8 per cent of them were workers. Considering all employees, the share of those who chose this answer is 13.6 per cent.

The largest share of interviewees, 41.9 per cent, were of the idea that environmental issues are of concern and are partly addressed by the business community. This rather positive opinion was supported by 38.8 per cent of all owners and also by 35.6 per cent of all workers. The large share of employees subscribing to this view is a very encouraging finding.

In general, perceptions tend to be positive, as many as 56.3 per cent of all respondents were of the opinion that environmental issues are of concern for the business community and are adequately or at least partly addressed. About one third of the sample, 33.3 per cent, found that environmental issues are of concern but are not adequately addressed.

▶ Figure 7. Are environmental issues of concern and being adequately addressed by the business community? – By type of answer



Source: Survey data

Since the overall objective of the survey and the assessment of the business environment in Zimbabwe was to identify gaps for the formulation of changes and reforms to improve the existing situation, it may be worth enquiring more in depth on the negative answers that were given. Let us then try and explore the characteristics of respondents (33.3 per cent) who believed environmental issues are of concern but are not adequately addressed by the business community.

Men more than women thought that environmental issues are of concern but are not adequately addressed by the business community - Male interviewees are the large majority, reaching a share of 69.2 per cent of those who chose this answer. Formal units are only slightly more than informal ones and are 51.5 per cent considering the actual number of observations for the corresponding variable.

Respondents aged 25-44 years supported more than other age groups the idea that environmental issues are of concern but are not adequately addressed by the business community - Of all cohorts, those aged 25-34 years and 35-44 years chose this answer more than other age groups and in identical shares equal to 32.5 per cent. The proportion recorded in the cohort aged 18-23 years is 30.3 per cent and that registered for the group aged 45-54 is 23.3 per cent.

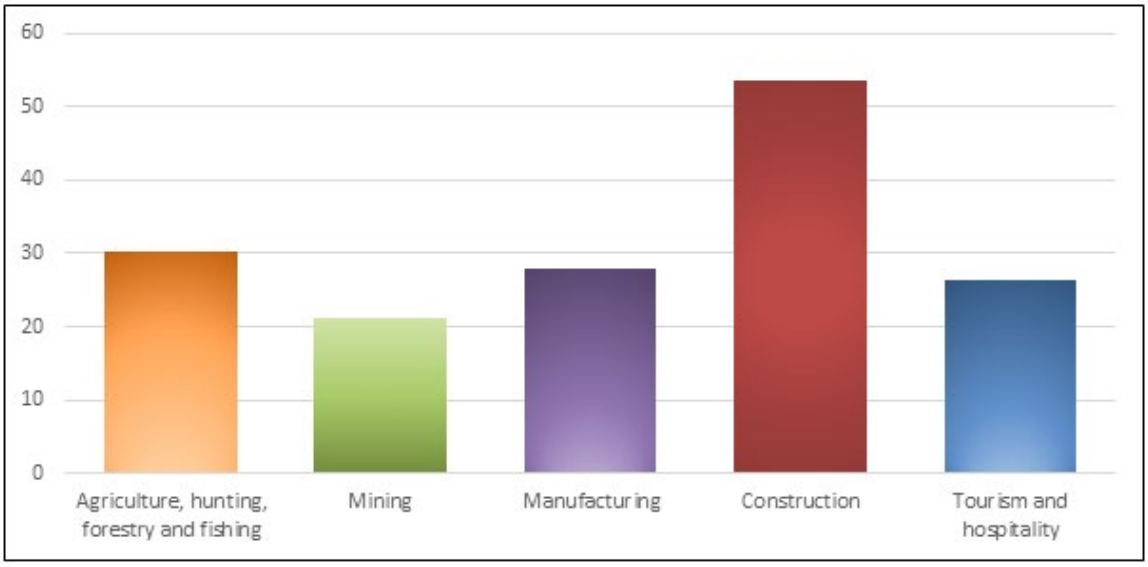
Workers felt strongly about environmental issues being of concern but not adequately addressed by the business community - Considering interviewees by job category, 28.1 per cent of owners, 30 per cent of managers and as many as 40.1 per cent of all workers found that environmental issues are not adequately addressed. The particularly negative view of employees is consistent with the share of workers who said legislation to protect the environment is poorly implemented, which was equal to 56.1 per cent and was much higher than the corresponding proportions of owners and managers who held this opinion (see section 6.2).

▶ Figure 8. Environmental issues are of concern but are not adequately addressed by the business community - By job category (%)

Source: Survey data

Figure 9 shows the shares of respondents who felt that environmental issues are of concern but are not properly addressed within economic sectors.

▶ Figure 9. Environmental issues are of concern but are not adequately addressed by the business community - shares within economic sectors (%)

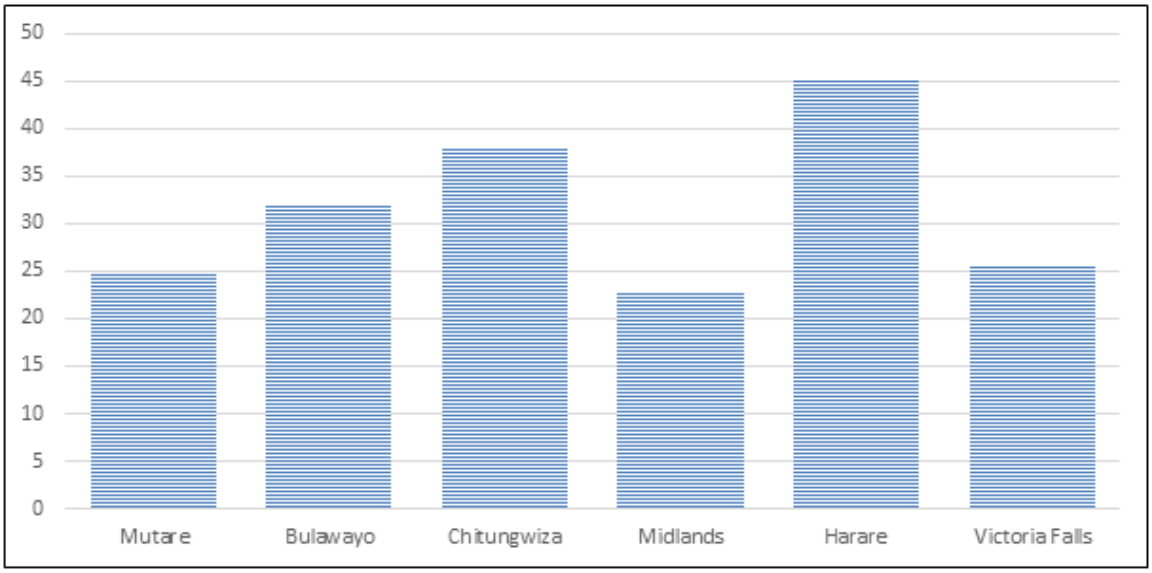


Source: Survey data

Interviewees from the construction sector believed more than others that Environmental issues are of concern but are not adequately addressed by the business community - The share of respondents who gave this answer from the sectors of manufacturing, mining and tourism and hospitality are well below 30 per cent. More discomfort is recorded by interviewees from agriculture, hunting, forestry and fishing, whose proportion reached 30.2 per cent. The negative impact of business activity in general on land and cultivations may account for this dissatisfied view. The most striking result is that registered by interviewees from the construction sector, whose share is as high as 53.3 per cent. This finding is consistent with evidence by economic sector presented in section 6.2, where the proportion of respondents from this sector who said that legislation to protect the environment is poorly implemented was 62.7 per cent and was the highest of all sectors. As shown in figure 8, workers more

than owners and managers subscribed to this view. It is to be observed that, in the case of the specific question under discussion, employees were only 22.7 per cent of all respondents from construction, indicating that owners and managers in the sector felt equally concerned about the business community not addressing environmental issues adequately. If we consider that costs for environmental impact assessments are simply too high for small enterprises, then it is clear why environmental issues are of concern for the whole business community, including owners, managers and workers, and are admittedly not adequately addressed (Expert 3).

Figure 10. Environmental issues are of concern but are not adequately addressed by the business community - shares within areas/cities (%)



Source: Survey data

Harare and Chitungwiza recorded the highest shares of respondents saying that environmental issues are of concern but are not properly addressed by the business community - Mutare, Midlands and Victoria Falls present shares of respondents who believed environmental issues are of concern but are not adequately addressed which are well below 30 per cent. Interviewees from Bulawayo who subscribed to that view are slightly over that threshold, at 31.9 per cent. The areas/cities with the highest proportions are Chitungwiza with 37.9 per cent and Harare with 45 per cent. It is to be noted that these two cities are very close to one another. Checking observations against variables, such as agriculture and construction for sectors and workers for job category, no meaningful result was obtained.

Building a shopping mall on a wetland area in Harare, as described in section 3.3.7, is an initiative that caused a lot of discontent among citizens. The provision of water to the capital city depends on that wetland. Water contamination through private activity made the business community look very negligent in addressing environmental issues. Donations are sometimes used to remedy the environmental damage caused, but they consist of very small amounts of resources compared to what is needed for restauration. Both environmental and financial costs are much higher if measures to remedy the situation are to be adopted after the construction phase. The result is that no effective restauration can be adopted because it is too expensive (Expert 1).

Harare and Chitungwiza are very industrialized areas where lots of air and water pollution is concentrated. Effluent water is normally discharged in the local rivers that are highly tainted. In addition, enterprises often do not properly dispose of the waste they produce and debris is dropped in the street. It is by observing such unsustainable practices that respondents may have had the impression that the business community does not adequately address environmental issues (Expert 2).

Which actions can the private sector undertake to fill identified gaps?

The answer to this question includes recommendations stemming from Skype interviews with three Zimbabwean technical experts. Expert 1 comes from the academia, Expert 2 from an environmental NGO and Expert 3 is from the private sector. The in-depth knowledge of these three specialists on the issues emerging from survey findings is supported by their rich contributions to the publications included in the literature review of the present paper. In general, the three experts were not surprised by the survey results. They could therefore quickly identify issues behind negative views and describe remedies to improve the existing situation.

1. **Enhancing knowledge of environmental obligations for small and micro enterprises through media campaign and training programmes on legislation to protect the environment** - The bulk of respondents, 51.7 per cent, expressed the view that legislation to protect the environment exists, but is poorly implemented. In general, the business community has a rather poor knowledge of environmental legal requirements, in particular owners and managers of small and micro firms. This fact certainly contributes to the weak implementation of existing legislation to safeguard the environment. Media campaign and training programmes on environmental legislation should be organised by the business community for its own members -in particular for small and micro enterprises- to fill this gap (Expert 3).

2. **Setting up a common platform for a clear engagement of the business community in responsible stewardship of the environment** - The engagement of the private sector in environmental protection varies considerably depending on factors such as sector and size of the business. For example, International mining companies, especially Western ones, tend to be more proactive than other enterprises in environmental management. Similarly, large businesses are more engaged than small ones. One idea which has already been successfully tried, but which does not exclude other approaches, consists of the adoption of an "inclusive business" model, where a large enterprise applying high environmental standards assists all smaller firms in the area, even if they are not part of its value chain, to acquire knowledge on the existing legal requirements for environmental protection. The issue of excessive compliance costs for SMEs would remain, but at least the knowledge gap would be filled. This process should be carried out jointly with traditional chiefs and other leaders, within the implementation of local development programmes (Expert 3).

3. **Environmental controlled self-assessment for small and micro enterprises** - To help small and micro enterprises increase their level of compliance with legislation to protect the environment, they could be introduced to controlled environmental self-assessment. This tool could be taught through the training programmes mentioned in Recommendation 1 above or through an "inclusive business model" referred to in Recommendation 2, where a large company would be in charge of sharing knowledge on environmental legal obligations. Compliance costs would be very low and affordable also for small firms. The government or its Environmental Management Agency should check on the rigorous implementation of environmental self-assessment to prevent abuses (Expert 3). A management plan must also be formulated, with a monitoring mechanism to track the environmental impact of the concerned project. The example of small miners could be followed also in other sectors (Expert 1). Such plan could be included in or linked to the local development plan described in recommendation 2 above.

4. **Enhancing compliance with law protecting the environment through technological innovation** - In Zimbabwe, the focus should be on new green technology as is the case for China in the mining sector. Strict environmental regulations are easier to comply with when new, cleaner technology is introduced (see MIT, 2016). New technology leads to a more efficient use of resources and less

waste, which safeguards the environment. Chinese investments in the mining sector in Zimbabwe should apply green technology like in their mother country (Expert 1 and 2).

5. **Private-public partnership for environmental integrity** - The private sector should share investments in infrastructure development because it is the business community itself that will benefit from it. Costs should be shared also for the maintenance and rehabilitation of infrastructure (roads, bridges, buildings) that was used for dismissed operations sites. There should be regular ongoing dialogue between the private and the public sector. New private operations, for example in the mining sector, should be carefully jointly planned by the public and the private sector. Environmental sustainability should be considered at the outset of a project so that costs for the protection of the environment remain lower than if remedy and restauration were to be adopted at the end (Expert 1).

6. **Encouraging environmental certification** - All enterprises in Zimbabwe should aim at being environmentally certified according to ISO14001 and adopting environmental management systems. For smaller businesses, a cheaper, customised certification system could be introduced (Expert 2).

7. **Encouraging environmental audits** - In order to be more environmentally diligent, large companies could introduce an internal system of periodical environmental audit. If they lack internal trained staff, they can recruit consultants. For smaller firms, the government and some agencies, such as the National Social Security Authority could send inspectors for both environmental and labour inspection. Inspectors could be trained to increase their skills level and should be equipped with the financial and technical means to be able to properly perform environmental and social audits (Expert 2).

8. **Strengthening the role of the Business Council for Sustainable Development Zimbabwe** - The role of this organisation which groups leading responsible companies in the country for the implementation of sustainable development principles, including economic, social and environmental, should be strengthened so that foreign enterprises operating in Zimbabwe can adopt high-level environmental and social standards. The organisation should rely on the alliance and support of NGOs and other institutions in general that share the same objectives (Expert 2).

Conclusion

The research work described in the foregoing chapters makes it possible to fully address the three initial questions.

In Zimbabwe, legislation to protect the environment does exist and is quite comprehensive compared to other African countries. For a rather significant share of surveyed units equal to 38.4 per cent of the total, it is adequate and rather effective. The majority of the sample, though, corresponding to 51.7 per cent of the total, was of the opinion that legislation to safeguard the environment is poorly implemented. This opinion is prevailing among men more than women, among workers more than owners and managers, in the construction, mining and tourism sectors, and in Harare and Victoria Falls as geographical areas.

Concerning perceptions about the attitude of the business community, in general, views tend to be positive, as many as 56.3 per cent of all respondents were of the opinion that environmental issues are of concern for the business community and are adequately or at least partly addressed. This finding must be considered with caution, as the surveyed units included mainly owners (39.8 per cent) and managers (35.3 per cent) who are responsible for the strategies and actions of their enterprises.

One/third of the sample, 33.3 per cent, found that environmental issues are of concern but are not adequately addressed by the business community. Respondents who expressed such a negative view are mainly men, workers, from the construction sector, and from Harare and Chitungwiza that are two largely industrial cities.

To improve the existing situation and further strengthen its engagement towards environmental integrity, the business community has several options. Eight specific measures have been identified and described in section 6.4. Actions that could be undertaken by sustainable enterprises broadly cover the areas of training, institutional dialogue, new technology, monitoring systems, and tools to reach higher performance levels in terms of environmental sustainability.

A major issue which emerges from the present research concerns the role of foreign investors from emerging economies. Their massive and increasing presence in developing countries in general and in Zimbabwe in particular raises worries about the obsolete and very polluting technology that they use. Their presence lowers standards rather than improving them. There is scope to explore ways to change this threatening trend so that development can become sustainable, meeting both social and environmental internationally recognised standards.

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