

# Development by Design Scoping Workshop Report

*Hosted by the Ministry of Mines and  
The Nature Conservancy*



4<sup>th</sup> – 5<sup>th</sup> June, 2013 Pamodzi Hotel,  
Lusaka

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## EXECUTIVE SUMMARY

On 4<sup>th</sup> and 5<sup>th</sup> June 2013 the Government of the Republic of Zambia, through the Ministry of Mines, Energy and Water Development (MMEWD) with support from The Nature Conservancy (TNC) held a stakeholders consultative workshop to review the findings of the feasibility study on the potential of implementing a pilot programme on the concept of Development by Design (DbD) in the Zambian Mining Sector. A total of 22 participants drawn from academic institutions, public and private sectors and non-governmental organizations (NGOs) attended the workshop. The workshop had three main objectives *inter alia*:

- i. To establish whether the concept of DbD is appropriate for Zambia at this point in time;
- ii. To establish what framework or plan would be most effective in implementing DbD should it be considered appropriate for Zambia; and
- iii. Appointment of project steering committee with clear Terms of Reference coordinate implementation of DBD in Zambia

During the workshop Government, through the Permanent Secretary (PS) of MMEWD expressed gratitude to TNC for considering application of DbD in Zambia's mining sector in order to address the negative impact of mining on the environment. The mining sector is a major economic sector of the country contributing about 70% of the country's foreign income and contributes about 10% to GPD. Government has plans to scale up the contribution of the mining sector to GDP to about 20% in 10 years' time.

Prior to the stakeholders workshop a feasibility study financed by TNC was carried out against the background that DbD, also referred to as Smart Growth, provides a framework for expanding national development initiatives that does not compromise the nation's natural capital.

Zambia was considered to be a possible pilot test site for DbD in view of the Country's robust and expanding mining industry. It was on the basis of this that the feasibility study was undertaken. The following were the key findings of the study:

- a) There is an enabling environment in terms of policy and legal frameworks and stakeholder support to implement DbD proposed by TNC
- b) DbD provides a framework for sustainable development without compromising the nation's natural capital;
- c) The framework provides for mainstreaming of environmental safe guards for various developmental projects in line with the mitigation hierarchy (MH) i.e. *avoid, recycle, mitigate*; and where these measures cannot address negative impacts of development on biodiversity, *then apply the concept of offsite compensation*. Biodiversity offsets (compensation) seek to ensure that the inevitable negative environmental

impacts of development are moderated by environmental gains, with the overall aim of achieving a net neutral or positive outcome;

- d) DbD takes into account cumulative impacts of multiple current or projected development projects within the same ecological area in developing a mitigation strategy;
- e) Offsets are a methodology of ensuring environmental benefits, by providing a mechanism for maintaining or enhancing environmental values in situations where development is being planned, despite the fact that such development is likely to cause detrimental environmental impacts
- f) Geographically, most major mining activities in Zambia are concentrated in the Copperbelt and North - Western Provinces, with small scale mines generally more wide spread. The total area of the country under active mining tenements is 334 166.53km<sup>2</sup> or 45% of the land mass. Out of this, 10 814 km<sup>2</sup> or 1.4% of the land mass constitutes large scale licences and most of these are found on the Copperbelt which lies in the Kafue river basin. The Kafue River is the source of potable water supply for 40% of the Zambian population.
- g) Increase in mining activities has resulted in increased negative impact on the environment through air pollution emissions from copper smelters, water pollution from mine effluent discharge, deforestation and biodiversity destruction and displacement of communities to pave way to new mines poor site rehabilitation and land sterilisation from the disposal of mine solid waste, as well as negative socio-economic impacts on the society, especially those that are displaced.
- h) Government commissioned a legal framework to enhance management of environmental impacts from mining through Environmental Impact Assessment (EIA). The framework provides for mainstreaming of environmental management throughout the mining cycle. The challenge with the current environmental safe guards arising out of EIAs is compliance by the mining industry.
- i) There are two mining houses, Kagem Mining, and Barrack Gold Lumwana; that have adopted the DbD concept in their business practice. Konkola Copper Mines has commenced discussions with the Forest Department for the same purpose.

The workshop agreed that:

- Political will to adopt DbD exists in Zambia;
- Ministry of Mines, Energy and Water Development will be the best anchor for DbD
- There is urgent need of operationalizing the Environmental Management Act (EMA) of 2011 through formulation of subsidiary legislation (regulations) onto which DbD would be anchored;
- There is need for more stakeholder sensitization among stakeholders, particularly local communities on the benefits of DbD

In order to move the process forward the following recommendations were endorsed:

- 1) Increase Government support for developing a mitigation hierarchy and biodiversity offset program (DbD) in Zambia
  - a) TNC to make a presentation to the Minister of Mines, Energy and Water Development on the concept of DbD;
  - b) TNC to sign Memorandum of Understanding (MOU) with Ministry of Mines, Energy and water Development and the Ministry of Lands, Natural Resources & Environmental Protection on mainstreaming of DbD in environmental management. TNC to mobilise necessary resources, where applicable, for initiating DbD in the mining sector of Zambia
  - c) Preparation of a document that lays out the framework for implementation of DbD
  
- 2) Opportunities to incorporate DbD in national and regional planning efforts
  - a) Carry out preliminary assessment of biodiversity and identify major data providers;
  - b) Carry out research on the potential direct and indirect impact on land use and change on wildlife;
  - c) Carry out a comprehensive research on the national fresh water resources;
  - d) Generate an updated land cover map and prepare accessible data on known future development that will have an impact on biodiversity;
  - e) Preparation and signing of MoUs / agreements on environmental information sharing;
  - f) Identification of conservation priorities and ranking them;
  - g) Identification of pilot projects and preparation of the frameworks;
  - h) Carry out a comprehensive stake holder mapping;
  
- 3) Opportunities for suitability and feasibility of undertaking offsets by the private sector:
  - a) Exchange information on mining sites, mitigation plan/actions, and DbD
  - b) Meeting to assess opportunities; build understanding among company decision-makers
  - c) Proposal outlining potential actions under DbD
  - d) Identify one project to be proof of concept

In conclusion the workshop observed that the Zambian mining sector is ready for the introduction of DbD, and TNC would find supporting partners for its implementation in the country. However, enforcement regulations specific to DbD are not yet in place for onsite and offsite natural resource compensation. In order to pilot the concept of DbD in Zambia, TNC would work closely with state and non-state actors *inter alia* Ministry of Mines (as host), Zambia Environmental Management Agency (ZEMA), Department of Forest, private sector mining houses, Non-Governmental Organizations (NGOs) and, host communities.

# INTRODUCTION

## ***Background***

In 2012, The Nature Conservancy (TNC) commissioned a feasibility study on the potential of implementing a pilot programme based on the concept of Development by Design (DbD) in the Zambian Mining Sector. The study was carried out against the background that DbD, also referred to as Smart Growth, provides a framework for expanding national development initiatives that does not jeopardize nature's capital. This means that it is possible to undertake development activities in a manner that is sustainable, regardless of the development activity itself. This assumes that all the normal environmental management stages are applied in the project design, as propagated by the mitigation hierarchy (MH) i.e. *avoid, minimize, restore/mitigate*; and then if all of these stages do not address the negative impact of development on biodiversity, *then apply the concept of offsite compensation*. Biodiversity offsets (compensation) seek to ensure that the inevitable negative environmental impacts of development are moderated by environmental gains, with the overall aim of achieving a net neutral or positive outcome.

In a number of African countries, the rate of socio-economic growth is proceeding at a rapid rate leading to increased extraction of resources, expansion of physical infrastructure and land use changes that are impacting the integrity of the natural capital. Based on lessons learnt from selected project sites in Mongolia, Colombia and the western USA where DbD concept has been applied for quite some time now, TNC is keen to replicate this approach across its programs in Africa. In the light of this, Zambia was considered to be a possible pilot test site for the concept in view of the Country's robust and expanding mining industry. It was on the basis of this that the feasibility study was undertaken.

The following were the key findings of the study (see full summary in Appendix I).

- (i) **Expansion of mining production:** The Zambian mining industry has recently experienced significant foreign investment activities due to the sustained increase in global copper demand driven principally by China. The increased investment has led to a massive growth in the production and export of copper which had dropped to about 250 000 tonnes in 1995, to levels of about 800 000 tonnes in 2011. The contribution of mining to national GDP between 1993 and 2005 varied between 9.4 and 8.6. The Government's intention, which is reflected in the Sixth National Plan, is to raise this contribution to 20% by 2030.
- (ii) **Increased Chinese investment in Zambian mining Sector:** Zambia has been a recipient of very a significant increase in investment in the mining sector by Chinese investors. This has occurred from about the year 2000 to date, to the extent that, China is now the leading source of Foreign Direct Investment in

Zambia. This situation gives the Chinese investors and Government some measure of influence on Zambian mining policy formulation<sup>1</sup>.

- (iii) **Location of mining activities:** Geographically, the major mining activities in Zambia are concentrated in the Copperbelt and in Northwestern Provinces, with small scale mines generally more wide spread. *The total area of the country that is currently under active mining tenements is 334, 166.53km<sup>2</sup> or 45% of the land mass. Out of this, 10 814 km<sup>2</sup> or 1.4% of the land mass constitutes large scale licences (Ministry of Mines, 2013), and most of these are found on the Copperbelt which lies in the Kafue River basin. The Kafue River is the source of potable water supply for 40% of the Zambian population.*
- (iv) **Impact of mining on the environment:** While attaining this high copper production status, the Zambian mining sector in the meantime, is known to have also increased its negative impact on the environment through; air pollution emissions from its copper smelters, water pollution from mine effluent discharge, deforestation and biodiversity destruction and displacement during the course of the establishment of mines, poor site rehabilitation, land sterilisation from the disposal of mine solid waste, as well as negative socio-economic impacts on the society, especially those that are displaced. In response to this fact the Government has put in place a legal framework for managing the environmental impact of mining. The effect of the legislation of the environmental impact assessment (EIA) process has been to entrench environmental management as a norm in the mining sector. Much as this is the case, not all players have been compliant. There are leaders and obvious laggards in this matter.
- (v) **Legal framework for responsible development:** The Zambian framework for responsible development is in the form of the National Policy on the Environment of 2005, which has prescribed the framework for sustainable development in Zambia on all accounts including how biodiversity must be treated. There are other overarching policy and legal provisions in place, such as the Republican Constitution, the long term development vision of the country called Vision 2030, the current five year development plan called the Sixth National Development Plan, the Environmental Management Act (of 2011), the Biodiversity Strategic Action Plan, the Mining Policy, and the Forest Policy, all of which when read collectively can be seen to support the concept of DbD and indeed biodiversity offsite compensation (see appendix II for summary of policies and legal instruments). Specifically, the

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<sup>1</sup> Examples of the impact of the significant Chinese investment (FDI) in Zambia include the creation of multifacility industrial zones, which are inspired and heavily supported by the Chinese Government. These have been created through an Act of Parliament (Zambia Development Agency Act)

Environmental Management Act of 2011 provides for the conservation of biodiversity in Section 26, conservation of biodiversity *in situ* in section 27 and conservation of biodiversity *ex situ* in section 28. However, the translation of these sections into functional legislation in the form statutory instruments is still to be effected by the Zambia Environmental Management Authority (ZEMA). These sections of the Act are therefore still dormant. Nevertheless, there are two mining houses that are currently practising the concept, namely First Quantum Mining, and Barrack Gold Lumwana. A third mining house, Konkola Copper Mines, has just entered into discussions with the Forest Department for the same purpose.

- (vi) **Development by Design:** The concept of Development by Design as such, is not known in Zambia. However, an associated development management concept, environmental management through environmental impact assessment (EIA), has been on the Zambian statute books since 1990 when the first comprehensive legislation on this subject was promulgated. In the mining sector, direct supportive legislation was put in place in 1995, which made it obligatory for a mining project proponent to undertake environmental impact assessments prior to the issuance of mining permits.

In the light of the above observations, the study concluded that the Zambian mining sector is ready for the introduction of the concept of Development by Design, and that TNC would find ready and perhaps willing partners for its implementation in Zambia. However, it is worth noting that enforcement regulations are not yet in place for onsite and offsite natural resource compensation. The study observed that in order to pilot the concept of DbD in Zambia, TNC would need to work closely with partners that would include Government Ministries (Ministry of Mines as the possible host), the Zambia Environmental Management Agency, the Forest Department, private sector mining houses (especially those that are already likeminded), some local NGOs, and finally host communities and their traditional leaders.



# DEVELOPMENT BY DESIGN STAKEHOLDERS ENGAGEMENT WORKSHOP PROCEEDINGS

## 1. *BACKGROUND*

### 1.2 Workshop justification and objectives

#### 1.2.1 Justification

Findings of the phase I study revealed that the concept of DbD warrants further investigations with a view to advance it to the process of potential execution in the Zambian mining sector. Preliminary findings indicated there was an opportunity to engage Government in developing DBD further. There was however a clear need to identify the scope and type of engagement envisioned. In addition, the level of both political and Government commitment to implementing this concept had to be assessed.

As a first step in the decision making process, it was decided that a workshop be held to discuss the findings of the report and, particularly, determine whether it would be worthwhile to progress the idea of DbD in Zambia at this point. Consequently, a workshop hosted by the Ministry of Mines, Energy and Water Development (MMEWD) in conjunction with TNC, was conducted on 4<sup>th</sup> and 5<sup>th</sup> June 2013, at the Taj Pamodzi Hotel in Lusaka. The Permanent Secretary, MMEWD invited participants to the workshop from; Forestry Department, Maamba Collieries, Zambia Wildlife Authority, Mines Safety Department, Konkola Copper Mines, First Quantum Minerals Limited, Zambia Development Agency, Ministry of Local Government and Housing, HOC, Community Based Natural Resources Management Forum, Wild Life Environmental Conservation Society of Zambia, and Citizens for a Better Environment. TNC and its consultants on the Phase I study also participated. The full list of workshop participants is given in the Appendix IV.

#### 1.2.2 Workshop Objectives

The workshop had three main objectives, and these were:

1. To establish whether the concept of DbD is appropriate for Zambia at this point in time;
2. To establish what framework or plan would be most effective in implementing DbD should it be considered appropriate for Zambia; and
3. Appointment of project steering committee to further goals of DBD implementation in Zambia with the defining of clear TORs that the committee will work to.

## **2. WORKSHOP PROGRAMME EXECUTION**

A detailed workshop agenda may be found in Appendix III. The workshop was structured as follows:

- i. Opening Formalities;
- ii. Paper Presentations;
- iii. First Group Discussions;
- iv. Plenary Session;
- v. Second Group Discussions; and
- vi. Consolidation of Workshop resolutions and drawing of action plan.

### **2.1 Opening Formalities**

The workshop was opened by the Permanent Secretary (PS) of the Ministry of Mines, Energy and Water Development. In his opening speech, the PS raised the following main points:

- a. The consideration of environmental issues in mining was cardinal and that the importance of these issues to the country could not be underestimated. He stated that the current production of finished copper was about 850,000 metric tons per annum, a figure which is expected to rise to 1,300,000 in about two years. Shortly after that, it is expected to peak at 1,500,000. The PS observed that the country earns about 70% of its foreign income from mining which currently contributes about 10% to GDP. He informed the workshop that, it is the Government's plan that the contribution of the sector to GDP rises to about 20% in 10 years' time.
- b. In addition to copper, Zambia has economic deposits of many other minerals around the country, such as Manganese in Luapula Province, Coal in Southern Province – where a coal fired thermal power plant is currently under construction, he stated. He noted that uranium mines were coming up in Siavonga District and at Lumwana in Solwezi District.
- c. The PS observed that the DbD concept could not have come at a better time than now for the country given its potential to help mitigate the negative effects of mining which if not dealt with would threaten the quality of life.
- d. He thanked TNC for initiating studies on the potential of implementing DbD in Zambia. He stated that the Ministry of Mines, Energy and Water Development was ready to work with TNC to ensure that the DbD concept took shape in Zambia. He concluded by reminding the participants that it was in the light of the interest that his Ministry, on behalf of the Government, hosted the workshop.

## 2.2 Presentations

After the official opening, Mr Mathew Brown, the Director of Conservation for TNC Africa program, outlined the objectives of the workshop. He gave an overview of what was expected from the workshop and reiterated the fact that DbD aims at maximising economic growth without compromising nature. He further stated that, the workshop was more of an initial fact finding mission. Participants were encouraged to be open-minded and discuss the issues freely. He emphasised that outcomes from the meeting would contribute to the potential implementation of DBD in Zambia.

Mr Brown informed the participant of TNC's other strategies in in Zambia. He highlighted the organisation's involvement in the Kafue ecosystem protection project that includes: i) Kafue National Park resource protection; and ii) Game Management Area (GMA) Community conservation.

The introductory remarks by Mr Brown were followed by presentations in the order shown in the matrix below.

<b>Presenter</b>	<b>Topic</b>	<b>Institution / organisation</b>
1. Bruce McKenney	Development by Design	TNC
2. Joe Kiesecker	The Conservation/Development Balancing Act: Maintaining Balance with Mitigation	TNC
3. Sakwiba Musiwa	DbD Zambia Phase I report findings	TNC consultant
4. Guy Hammond	Conservation Farming Programme by FQM	FQM
5. Anderson Banda	Game Park and animal re-stocking programme by FQM	FQM
6. James Chisenga	Mandate of the Mine Safety Department of the Ministry of Mines, Energy and Water Development	Mines Safety Department

Each presentation was followed by some questions, clarifications and general comments. The presentations by TNC equipped the participants with the overall understanding of the DbD concept and what its contributions could be in the interplay between mining developments and biodiversity conservation in Zambia. Bruce McKenney emphasised the point that DbD does not aim at stopping development but rather, to encourage development and conservation to go hand in hand. Joe Kiesecker emphasised the process of addressing issues that impact on people.

The presentation on the findings of Phase I DbD report outlined the sustained importance of mining to the economy of Zambia and its possible subsequent negative effect on the environment. It also highlighted the existing policy and legal framework that may be used as a platform for launching DbD in the mining sector in Zambia.

FQM presentations demonstrated the potential willingness of the private sector in conservation principles. Anderson Banda informed the workshop that FQM understood the destruction that mining, especially open pit mining methods, causes to the environment. He stated that in thinking ahead, the Company has a vision of turning the open pit created by current mining activities into a lake at end of mine life that will offer eco-tourism. In view of this, FQM has fenced off 1,000 hectares of land within its mining licence area that it has turned into a game ranch. The Company is currently re-stocking the game ranch with different species of game animals. Guy, on the other hand, stated that by teaching the local population conservation farming methods, crop yields are expected to go up which in turn will reduce the need for engaging in charcoal burning as a source of livelihood.

The Mines Safety Department presentation by Mr Chisenga dwelt on the compliance to environmental management principles in relation to mining activities in Zambia as reflected in the Mines and Minerals Development Act of 2008 and Mineral Environmental Regulations of 1997. He further underlined the Government's positive position on DbD. The general mood of the workshop after presentations was that of general acceptance and appreciation of DbD, and the stage for tackling cardinal issues on the way forward was set.

### **3. GROUP DISCUSSIONS**

#### **3.1 Opportunities & Challenges the DBD concept in Zambia**

After the presentations, the meeting broke into the first group discussions. Participants were divided into four groups. Below are some of the general observations that arose during discussions that characterized this first group session.

- There is need for development of a framework for planning DbD programmes; this is currently done haphazardly - a holistic approach is required;
- It is important to understand how DbD work can be carried out in an area that has no mitigation policy like Zambia as there would be no guiding regulations and bench marks;
- What would be the drivers of change that would facilitate or stimulate the above to take place?
- Corporate entities should be made aware of the relevance of biodiversity offsets when planning economic development;
- There is a challenge in making the science of DbD relevant to policy makers and also relevant at the political level – i.e. creating a balance between policy and science and addressing this challenge should be seen as a priority;
- Stakeholders should play a significant role in setting the DbD implementation goals;
- Technocrats should play their role in providing advice to policy and political actors;

- The investment perspective and planning, as it currently exist in Zambia, is to bring investment in the Country without fully giving due consideration to the impact on the environment;
- Environmental considerations should be integrated in the national spatial land use planning; and
- DbD is holistic as it balances economic development and conservation policies.

## **3.2 Topics of discussion and results**

The meeting broke into four groups. The topics of discussion were:

1. Identify and list challenges likely to be associated with the development of DbD in Zambia; and prioritize the challenges identified based on importance (top three only)
2. Identify opportunities and initial work required in preparation for possible implementation of DbD in Zambia.

Groups 1 and 2 tackled topic 1 whilst groups 3 and 4 tackled topic 2. The groups worked independent of each other and results of the groups working on the same topic were synthesized. The results of group breakouts are given here below.

### **3.2.1 Challenges in the implementation of DbD in Zambia.**

#### **Group 1:**

- There is uncertainty on degree of Political will;
- There is a weak functional legal framework;
- There is poor coordination on environmental issues among Government institutions;
- Identification of leader that takes ownership of biodiversity DbD concept in the mining sector;
- Developing awareness among the stakeholders and communities; and
- Absence of a practical demonstration programme in Zambia.

#### **Group 2:**

- Lack of political will;
- Inadequate information on biodiversity; and
- Inadequate legal framework.

### **3.2.2 Opportunities and initial work required in preparation for DBD implementation in Zambia.**

#### **Group 3:**

- Willing partners exist;

- Possibility of sharing of mineral royalties could be encouraging to the local host communities; and
- Review of national spatial planning approach to include mineral potential areas.

#### **Group 4:**

- Harmonisation of the policies and legislation that would enable the implementation of DbD in Zambia;
- Explore and find ways of how DbD could be linked to the Master Plan of vision 2030; and
- Strengthen and capitalise on the current private sector initiatives (e.g. FQM) on biodiversity issues.

### **3.2.3 Plenary session observations and recommendations**

The following were the main observations that arose from the plenary discussions that followed the breakout presentations: -

- The Government has already shown a certain level of political will by putting in place all the policies and legislation as identified in the Phase I study especially in the EMA 2011 that is explicitly clear on biodiversity and compensation issues;
- By hosting the workshop with TNC and inviting the guest, the Ministry of Mines, Energy and Water Development has not only shown willingness on the part of the Government but also that the Ministry has taken leadership and ownership of possible DbD initiatives in the mining sector;
- There is urgent need of making EMA 2011 operational by putting in place necessary subordinate legislation (regulations) onto which DbD would be anchored;
- It has become clear that there is willingness and general acceptance of the concept of DbD as judged from the workshop but there should be more awareness creation in the communities and making people see the benefits.

## **4. WAY FORWARD**

Three main areas of concern were identified as the most cardinal in the advancement of DbD and possible way forward. These included: -

- a) How best to increase political will and advance national support for DbD in Zambia?
- b) How best to incorporate conservation planning that addresses DbD at the national and regional level?
- c) How best to develop pilot projects that demonstrate biodiversity offsets with the private sector?

The workshop broke in three groups to formulate the way forward on the basis of the three areas.

#### **4.1 Group 1- Identification of opportunities and actions to increase political will and advance DbD in Zambia.**

**Objective:** To increase Government support for developing a mitigation hierarchy and biodiversity offset program (DbD) in Zambia

**Outcome 1:** Obtain confirmation from Ministry of Mines that they endorse and support this idea (*near term*)

**Outcome 2:** Harmonized DbD objectives in existing statutory instruments (*long term*)

**Outcome 3:** Developed DbD Implementation Plan (road map) for Zambia (*long term*)

**Activities:**

- TNC to make a presentation to the Minister of Mines, Energy and Water Development, facilitated by the Permanent Secretary, Mines. This will give TNC a chance to engage the Government at political level and explain the concept and solicit for any kind of support required at that level.
- TNC Sign MOU with Ministry of Mines, Energy and water Development and the Ministry of Lands, Natural Resources & Environmental Protection. This will show commitment and support on the side of the Government which will stimulate the interest of TNC to mobilise necessary resources, where applicable, for initiating DbD in the mining sector of Zambia.
- Preparation of a document that lays out the framework for implementation of DbD – Ministry of Mines and Water Development signs and sends out this document. This will demonstrate ownership by the Ministry and that TNC will merely bring in the science and help in the implementation.

#### **4.2 Group 2- Opportunities to incorporate DbD in national and regional planning efforts.**

Outcome 1. Incorporated DbD into National Development Plans, (NDPs) by 2016.

Outcome 2. Incorporate DbD into regional planning processes and link them with site level EIA processes by end of 2014

**Activities:**

- Carry out preliminary assessment of biodiversity and identify major data providers;
- Carry out research on the potential direct and indirect impact on land use and change on wildlife;
- Carry out a comprehensive research on the national fresh water resources;

- Generate an updated land cover map and prepare accessible data on known future development that will have an impact on biodiversity;
- Preparation and signing of MoUs / agreements on environmental information sharing;
- Identification of conservation priorities and ranking them;
- Identification of pilot projects and preparation of the frameworks;
- Carry out a comprehensive stake holder mapping;

### **4.3 Group 3- Opportunities for suitability and feasibility of undertaking offsets by the private sector.**

**Outcome Statement:** Existing and new mitigation actions contribute to the first demonstrated offset by a mining project in Zambia with the intention of meeting IFC Performance Standards by 2015.

Explore opportunities for suitability and feasibility of offsets with:

- First Quantum's Kalumbila site
- KCM Nchanga in Chingola
  - Tree conservation and sustainable livelihoods in Lamba River headwaters)
  - 1 million trees project to improve forest cover
- Other major mining companies in Zambia

(With structured approach, the private sector (mines) may buy in)  
Gap on biodiversity at FQ - An opportunity

#### **Actions:**

- Exchange information on mining sites, mitigation plan/actions, and DbD
- Meeting to assess opportunities; build understanding among company decision-makers
- Proposal outlining potential actions under DbD
- Identify one project to be proof of concept
- Cooperative agreement

## **5. CONCLUSIONS**

The conclusions of the workshop are:

- 1 The conditions in Zambia are ideal for the implementation of the DbD concept in Zambia.
- 2 The regulatory framework for DbD is in place, however, there is a need for the legislation to be made functional to support DbD implementation
- 3 The Ministry of Mines, Energy and Water Development supports the concept of DbD within the mining sector and is willing to lead the implementation of the same.
- 4 The stakeholders invited to the workshop, who included representatives from the



Government, mining companies, NGOs active in the mining sector, all supported the implementation of the DbD concept in Zambia

- 5 It was agreed that a DbD strategy for Zambia, followed by an implementation plan be developed which would include the signing of an MoU with the Ministries of Mines, Energy and Water Development, as well as the Ministry of Lands, Natural Resources and Environmental Protection with TNC to form the platform for the implementation process.
- 6 As part of the DbD design process it is necessary to prepare a document that lays out the framework for implementation of DbD and the Ministry of Mines and Water Development officially take formal ownership of the same. This will demonstrate ownership by the Ministry and then TNC as a partner will bring in the science and help in the implementation process.
- 7 It is necessary to commission a committee with clear terms of reference that will be responsible for overseeing the process. The proposed membership will include the following:
  - a. TNC and other Civil society advocacy groups
  - b. Ministry of Mines, Energy and Water Development (possibly MSD Director)
  - c. Zambia Development Agency
  - d. Ministry of Chiefs and Traditional Affairs (Large area of land for mining found on communal land )
  - e. Ministry of Lands, Natural Resources & Environmental Protection
  - f. Ministry of Tourism (ZAWA)
  - g. Ministry of Local Government and Housing
- 8 This workshop report be endorsed and issued by the Ministry of Mines and Water Development as co- convenor of the workshop.

# **APPENDIX I: SUMMARY OF DBD PHASE ONE FEASIBILITY STUDY**

**THE NATURE CONSERVANCY, ZAMBIA**

**THE DEVELOPMENT BY DESIGN OPPORTUNITIES IN THE MINING SECTOR OF ZAMBIA**

**SUMMARY OF THE PHASE I STUDY REPORT**



**PREPARED BY**

**Dr Jewette H. Masinja and Mr Sakwiba Musiwa**

**May 2013**

**DbD PHASE I STUDY SUMMARY**

This is a summary of a report resulting from “A Feasibility Study for Offsite Mitigation Associated with Mining in Zambia”, commissioned by The Nature Conservancy (TNC) in

April 2012. The resulting report titled “Development by Design Opportunities in the Mining Sector in Zambia” was accepted by TNC in October 2012.

The study observed that the concept of Development by Design (DbD) as put forward by TNC has strong enabling conditions in Zambia. Development by Design, also referred to as Smart Growth, provides a framework for expanding national development initiatives that does not jeopardize nature’s capital. This means that it is possible to undertake development activities in a manner that is sustainable, regardless of the development activity itself. This assumes that all the normal environmental management stages are applied in the project design, as propagated by the mitigation hierarchy (MH) i.e. *avoid, recycle, mitigate*; and then if all of these stages do not address the negative impact of development on biodiversity, *then apply the concept of offsite compensation*. Biodiversity offsets (compensation) seek to ensure that the inevitable negative environmental impacts of development are moderated by environmental gains, with the overall aim of achieving a net neutral or positive outcome. DbD takes into account the cumulative impacts of multiple current or projected development projects within the same ecological area in developing a mitigation strategy. Offsets are a methodology of ensuring environmental benefits, by providing a mechanism for maintaining or enhancing environmental values in situations where development is being planned, despite the fact that such development is likely to cause detrimental environmental impacts (Joseph M et al, 2012)

In applying this approach to development, in selected pilot test sites in Mongolia, Columbia and indeed the western USA for quite some time now, TNC has come to the conclusion that this approach to development can be applied even in the mining industry. In light of this, TNC has chosen to consider looking at the Zambian mining industry as a possible pilot test site for this concept.

The findings of the feasibility study of the Zambian mining industry, along the above lines indicate that:

- (i) **Expansion of mining production:** The Zambian mining industry has recently experienced significant foreign investment activities due to the sustained increase in global copper demand driven principally by China. The increased investment has led to a massive growth in the production and export of copper which had dropped to about 250 000 tonnes in 1995, to levels of about 800 000 tonnes in 2011, with China being the main destination of this copper. This has also made Zambia the largest producer of copper in Africa. This situation implies a sustained attractive price for copper in the short to medium term at the global level, and consequently, sustained investment and increased production at the national level. The contribution of mining to national GDP between 1993 and 2005 is given in Table 1. The target of the Sixth national plan is to raise this to 20% by 2030.

**Table 1: Mining Sector Contribution to Zambian GDP (1993 – 2005)**

Year	1993	1994	1995	1996	1997	1998	1999	2000	2005	2012
Mining (% GDP)	9.4	16.7	12.4	11.9	11.8	10.7	6.6	6.4	8.6	9.9
Production (000' tpa)	403.5	360.2	307.1	314.6	319.1	300.3	265.9	259.6	465.1	820.3

- (ii) **Increased Chinese investment in Zambian mining Sector:** Zambia has been a recipient of very a significant increase in investment in the mining sector by Chinese investors. This has occurred from about the year 2000 to date, to the extent that, China is now the leading source of Foreign Direct Investment in Zambia. This situation gives the Chinese investors and Government some measure of influence on Zambian mining policy formulation<sup>2</sup>.
- (iii) **Location of mining activities:** Geographically, most major mining activities in Zambia are concentrated in the Copperbelt and North – Western Provinces, with small scale mines generally more wide spread. *The total area of the country that is currently under active mining tenements is 334 166.53km<sup>2</sup>, or 45% of the land mass. Out of this, 10 814 km<sup>2</sup> or 1.4% of the land mass constitutes large scale licences (Ministry of Mines, 2013), and most of these are found on the Copperbelt which lies in the Kafue river basin. The Kafue river is the source of potable water supply for 40% of the Zambian population.*
- (iv) **Impact of mining on the environment:** While attaining this high copper production status, the Zambian mining sector in the meantime, is known to have also increased its negative impact on the environment through; air pollution emissions from its copper smelters, water pollution from mine effluent discharge, deforestation and biodiversity destruction and displacement during the course of the establishment of mines, poor site rehabilitation, land sterilisation from the disposal of mine solid waste, as well as negative socio-economic impacts on the society, especially those that are displaced. In response to this fact the Government has put in place a legal framework for managing the environmental impact of mining. The effect of the legislation of the EIA process has been to entrench environmental management as a norm in the mining sector. Much as this is the case, not all players have been compliant. There are leaders and obvious laggards in this matter.

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<sup>2</sup> Examples of the impact of the significant Chinese investment (FDI) in Zambia include the creation of multifacility industrial zones, which are inspired and heavily supported by the Chinese Government. These have been created through an Act of Parliament (Zambia Development Agency Act)

- (v) **Legal framework for responsible development:** The Zambian framework for responsible development is in the form of the National Policy on the Environment of 2005, which has prescribed the framework for sustainable development in Zambia on all accounts including how biodiversity must be treated. There are other overarching policy and legal provisions in place, such as the Republican Constitution, the long term development vision of the country called Vision 2030, the current five year development plan called the Sixth National Development Plan, the Environmental Management Act (of 2011), the Biodiversity Strategic Action Plan, the Mining Policy, and the Forest Policy, all of which when read collectively can be seen to support the concept of DbD and indeed biodiversity offsite compensation. Specifically, the Environmental Management Act provides for the Conservation of biodiversity in Section 26, Conservation of biodiversity *insitu* in section 27 and Conservation of biodiversity *exsitu* in section 28. However, the translation of these sections into functional legislation in the form statutory instruments is still to be effected by the Zambia Environmental Management Authority (ZEMA). So these section of the Act are still dormant. Nevertheless, there are two mining houses that are currently practising the concept, namely Kagem Mining, and Barrack Gold Lumwana. A third mining house, Konkola Copper Mines, has just entered into discussions with the Forest Department for the same purpose.
- (vi) **Development by Design:** The concept of Development by Design as such, is not known in Zambia. However, an associated development management concept, environmental management through environmental impact assessment (EIA), has been on the Zambian statute books since 1990 when the first comprehensive legislation on this subject was promulgated. In the mining sector, direct supportive legislation was put in place in 1995, which made it obligatory for a mining project proponent to undertake environmental impact assessments prior to the issuance of mining permits.

All of the above observations lead to the conclusion that the Zambian mining sector is ready for the introduction of the concept of Development by Design, and that TNC would find ready and perhaps willing partners for its implementation in Zambia. However, enforcement regulations are not yet in place for onsite and offsite natural resource compensation. In order to pilot the concept of DbD in Zambia, TNC would need to work closely with partners, that would include Government Ministries, and bodies, such as the Ministry of Mines (as host), the Zambia Environmental Management Agency, the Forest Department, private sector mining houses, especially those that are already likeminded, some local NGOs, and finally host communities and their traditional leaders, as appropriate, for the DbD concept to be

tested. All in all, the ground appears ready, and the timing ideal for TNC to establish a pilot DbD site in Zambia. If the requisite homework is done, success is assured.

## **APPENDIX II: Summary of National Policy and Legislation Relevant for Development by Design**

### **Summary of National Policy in Zambia as Relevant for Development by Design**

The National Policy that is directly relevant for Development by design in the Zambian policy and legal framework includes:

#### **1 Vision 2030**

The national long term vision of the country is reflected in the document titled “Vision 2030”. This document expresses Zambians’ aspirations by the year 2030, which is, to become “*A Prosperous Middle Income Nation by 2030*”. The Vision is to be operationalized through five year development plans starting with the Fifth National Development Plan (2006-2010) and subsequent annual national budgets.

The vision for the mining sector as reflected in the Vision 2030 is:

*Well organized private sector led mineral resource exploration and exploitation that contribute to sustainable social economic development by 2030*

The target and goals of the mining sector within the Vision 2030 are:

- i. Increase the share of mineral out used in industrial production to 30 percent by 2030.
- ii. Geo-map Zambia’s surface area by 2030; and
- iii. Reduce environmental degradation from mining activities by 75 percent by 2030.

The vision of Government in the mining sector is captured in the mining chapter of the Sixth National Development Plan (SNDP, 2011) running from 2012 to 2017, which makes a number of undertakings including:

#### **Programme :1 To increase production and productivity in the mines**

- a) Ensure a stable regulatory framework; b) Facilitate access to capital and equipment;
- c) Increase extension services to small-scale miners; d) Provide incentives to small-scale miners particularly gemstone miners; e) Enhance skills training of miners in production, value addition and marketing; f) Improve availability of geological and mining information;
- g) Mitigate environmental impact of mining; h) Develop mining safety and environmental impact mitigation training; and i) Enhance the capacity of DRM in the sector.

#### **Programme 2: Development of Mines -To promote sustainable exploitation and management of energy minerals**

- a) Establish the Hydrocarbon Unit; b) Formulate relevant policies and legislation for energy minerals; and c) Mitigate environmental impact of mining.

The core and subsidiary policy instruments that guide mining and environmental protection in Zambia are the Mining Policy of 1995, and the National Policy on the Environment of 2005, respectively.

## **2 Mining Policy of 1995**

### **Objectives**

To make the private sector the principal producer and exporter of mineral products through putting in place a privatization programme and to promote private sector initiative in the development of new mines in order to increase and diversify mineral and mineral-based products and exports. This will maximize long-term economic benefits to the country.

To promote the development of the small-scale mining industry this has the potential to significantly contribute to the economy.

To promote the development of gemstone mining and facilitate liberalized marketing arrangements in order to realize the industry's potential to contribute to the development of the economy.

To promote the exploration and exploitation of industrial minerals and energy minerals and to encourage the establishment of a ferrous industry.

To reduce the danger of ecological damage arising from mining operations as well as damage to the health of workers and inhabitants of the neighbourhood through air, water and land.

To promote the local processing of mineral raw materials into finished products for added value.

### **Rationale**

To enhance investment in the mining industry and to ensure the development of a self-sustaining minerals-based industry

## **3 National Policy on the Environment**

### **Vision**

To provide a framework management guide for the management of Zambia's environment and natural resources so as to ensure that they are managed on sustainable basis and retain their integrity to support the needs of the current and future generations without compromising either of the two.

### **Rationale**

The Constitution of Zambia, 1996, enshrines matters that relate to the environment and natural resource management thus providing the keystone to the National Policy on Environment. In Article 112 the Constitution affirms that the State shall:



1. Endeavour to provide clean and safe water; adequate medical and health facilities and decent shelter for all persons and take measures to constantly improve such facilities and amenities.
2. To provide a clean and healthy environment for all.
3. To promote sustenance, development and public awareness on the need to manage the land, air and water resources in a balanced and suitable manner for the present and future generations.

In Article 113 it states that every citizen shall contribute to the well-being of the community where that citizen lives, including observance of health controls and that the provisions are intended to guide the State in the development and implementation of national policies; enactment of laws and application of the Constitution and any other law.

The principle legislation that guides mining and environmental management in Zambia are:

#### **4 Mines and Minerals Development Act (MMDA) of 2008.**

Mining activities are conducted under this Act, and its subsidiary legislation which provides for the issuance of licences for exploration, mining and processing of mineral resources in Zambia, by the Government and control of the same. It also provides for the consideration of the environment and human health in the issuance of mining permits, and provides for the establishment of the Environmental Protection Fund. This Act is currently under review.

#### **5 The Environmental Management Act (EMA) No 12 of 2011**

This Act was passed in 2011 and is the Principal Act governing and regulating environmental issues in Zambia. Its main functions include the protection of the environment and control of pollution, and to provide for the health and welfare of people, animals, plants and the environment.

More specifically, the objective of this Act is to continue the existence of the Environmental Council and re-name it as the Zambia Environmental Management Agency (ZEMA); provide for integrated environmental management and the protection and conservation of the environment and the sustainable management and use of natural resources; provide for the preparation of the State of the Environment Report, environmental management strategies and other plans for environmental management strategies and other plans for environmental management and sustainable development; provide for the conduct of strategic environmental assessment of proposed policies, plans and programmes likely to have an impact on the environmental management; provide for the prevention and control of pollution and environmental degradation; provide for public participation in environmental decision-making and access to environmental information; establish the Environment Fund; provide for environmental audit and monitoring; facilitate the implementation of international environmental agreements and conventions to which Zambia is a party.

The rationale of the Act is founded on the Republican Constitution which states that, “every person living in Zambia has the right to a clean, healthy and safe environment”.

The Act is anchored on twelve key principles namely;

- (a) the environment is the common heritage of present and future generations;
- (b) adverse effects shall be prevented and minimized through long term integrated
- (c) planning and the coordination, integration and co-operation of efforts, which consider the entire environment as a whole entity;
- (d) the precautionary principle;
- (e) the polluter pays principle;
- (f) equitable access to environmental resources shall be promoted and the functional integrity of ecosystems shall be taken into account to ensure the sustainability of the ecosystems and to prevent adverse effects;
- (g) the people shall be involved in the development of policies, plans and programmes for environmental management;
- (h) the citizens shall have access to environmental information to enable the citizens make informed personal choices which encourages improved performance by industry and Government;
- (i) the generation of waste should be minimized, wherever practicable, and waste should, in order of priority, be re-used, re-cycled, recovered and disposed of safely in a manner that avoids creating adverse effects;
- (j) the environment is vital to people’s livelihood and shall be used sustainably in order to achieve poverty reduction and socio-economic development;
- (k) non-renewable natural resources shall be used prudently, taking into account the needs for present and future generations;
- (l) renewable natural resources shall be used in a manner that is sustainable and does not prejudice their viability and integrity; and
- (m) community participation and involvement in natural resource management and the sharing of benefits arising from the use of the resources shall be promoted and facilitated.

The EMA has specific provisions that deal with natural resources management. Section 26 of the EMA provides for the conservation of biological diversity. Specifically, that “the Minister shall strive to attain the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of biological resources.” Section 27 provides for the conservation of biological diversity insitu. Section 28 provides for the insitu conservation of biological diversity and section 28 provides for the conservation of biological diversity exsitu. Extracts of these sections of the EMA are attached to this report as they are the most relevant to the possible DbD implementation process in Zambia.

## Summary of Mining Policy Documents impact on Biodiversity management

**Table 1:** Summary of impact of mining policy on Biodiversity offset and compensatory mitigation.

<b>Policy Legislation</b>	<b>Impact on Biodiversity offset</b>	<b>Impact on Compensatory mitigation</b>
Vision 2030	<u>Indirect Support</u> (by supporting sustainable environmental management principles)	<u>Indirect Support</u> (by supporting sustainable environmental management principles)
Sixth National Development Plan	<u>Indirect support</u> (by Promoting management of environmental impacts of mining)	<u>Indirect support</u> (by Promoting management of environmental impacts of mining)
Mining Policy (1995)	<u>Indirect support</u> (by providing for reducing the danger of ecological damage arising from mining operations)	<u>Indirect support</u> (by providing for reducing the danger of ecological damage arising from mining operations)
National Policy on the Environment	<u>Indirect support</u> (provides for the enactment of legislation that could support Biodiversity offsets)	<u>Indirect support</u> (provides for the enactment of legislation that could support compensatory mitigation)
Mines and Minerals Development Act (MMDA)	<u>Direct Support</u> (through provisions for the inclusion of environmental management considerations in the issuance of mining permits)	<u>Direct Support</u> (through provisions for the inclusion of environmental management considerations in the issuance of mining permits)
Environmental Management Act (EMA)	<u>Direct support</u> through Section 26, 27 and 28 of the Act.	<u>Direct supports</u> through Sections 26, 27 and 28 of the Act.

## APPENDIX III: AGENDA

### AGENDA

#### Development by Design Working Meeting

4<sup>th</sup> -5th June 2013 – Pamodzi Hotel

DAY ONE			
Time	Agenda	Outcome	Lead
0800 - 0900	Registration of participants		TNC
0900 - 0905	Opening remarks by Meeting Facilitator		Facilitator
0905 - 0910	Self-introduction of all participants		Facilitator
0910 - 0915	Invitation to PS Mines to open meeting		Facilitator
0915 - 0930	Opening Speech by PS Mines	Meeting Opened	PS Mines
0930 - 0945	Tea break		
0945 - 1000	Brief introduction and overview of TNC	TNC introduction	Matt. A. Brown
1000 - 1020	Presentation of DbD Principles	Introduction of DbD concept	Bruce McKenney
1020 - 1040	Presentation of DbD Principles	Introduction of DbD concept	Joe Kiesecker
1040 - 1100	Question and answer Session	Issues arising	Facilitator/ Musiwa/TNC team
1100 - 1130	Presentation of DbD Feasibility Study findings	Status of mining sector for introduction of DbD concept	Sakwiba Musiwa
1130 - 1140	Question and answer session		Facilitator, Musiwa & TNC team
1140 -1200	Presentation by ZEMA on the legal framework for Natural Resources Conservation (in mining)	Status of natural resources conservation legal framework	Director General ZEMA
1210 - 1220	Question and answer session		Facilitator, Musiwa & TNC team
1220 - 1240	Presentation of FQML activities on Natural Resources Conservation	FQML natural resources conservation	Richard Zyambo
1240 - 1300	Question and answer session		Facilitator, Musiwa & TNC team
1300 - 1400	Lunch		
1400 - 1420	Presentation of compliance of mining companies to environmental management	Status of environmental management compliance in mining	Director Mines Safety Department
1420 - 1430	Question and answer session		Facilitator, Musiwa & TNC team
1430 - 1445	Tea Break		
1450 - 1550	Group work (session one)	Stakeholder discussion on	Facilitator, Musiwa & TNC team

		relevance and need for DbD concept in Zambia	
1550 – 1630	Group presentations (session one)	Stakeholder discussion on relevance and need for DbD concept in Zambia	
<b>1630</b>	<b>Adjourn for Day</b>		
<b>DAY 2</b>			
<b>Time</b>	<b>Agenda</b>	<b>Outcome</b>	<b>Lead</b>
0830 - 0900	<ul style="list-style-type: none"> <li>▪ Day one recap</li> <li>▪ Summary of day one highlights &amp; consensus on group work presentations.</li> <li>▪ Group work assignment for day two</li> </ul>		Facilitator & TNC staff
0900 - 1015	Group work (session two)	Stakeholder opinion on relevance and need for DbD concept in Zambia	Facilitator
1015 - 1030	Tea Break		
1030 - 1200	DBD Steering Committee developing objectives and TORs	Need for DbD Steering Committee	Facilitator/TNC
1200 – 1300	Nomination of DbD Steering Committee and TORs	Establishment of DbD Steering Committee	Facilitator/TNC
1300 - 1310	Closing remarks and way forward by TNC	Closing protocols	TNC
1310 - 1315	Invitation to PS Mines to close meeting by Meeting Facilitator		Facilitator
1315 - 1330	Meeting closing Speech by PS Mines		PS Mines
1330 - 1430	Lunch and dispersal		Facilitator

**APPENDIX IV: PARTICIPANT NAMES AND CONTACT DETAILS**  
**REGISTRATION FORM**

*Development by Design (DbD) Working Meeting*

**4<sup>th</sup> -5<sup>th</sup> June 2013 – Pamodzi Hotel**

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