

## SUSTAINABILITY - LUXURY, GRUDGE OR NECESSITY

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### 1. Introduction

“The word ‘sustainability’ has gotten such a workout lately that the whole concept is in danger of floating away on a sea of inoffensiveness” *Michael Pollan*

It is estimated that approximately 65% of the roughly 130 million carats of diamonds mined globally per annum originate in Africa and has an annual value of US\$ 8.4 billion<sup>1</sup>. Many of these mines are located in remote areas of the continent where the directly affected project community’s income is often well below the poverty line. Often associated with these communities are occurrences of localised over exploitation of natural resources, environmental destruction and the abundance of social ills.

In association with various international organisations such as the UN, Non-Governmental Organisations (NGOs) and other role players in the Sustainable Development field, the mining industry has taken decisive action to ensure a positive contribution to the long term sustainability of their project affected communities. Many mining companies operating in remote locations have developed and implemented extensive and exemplary Corporate Social Responsibility Initiatives (CSRI) which has improved the lives and living conditions of their project affected communities significantly. Some companies have such expansive CSRI programmes, that they are bordering on assuming the role of a quasi government in the provision of basic necessities such as the development and installation of water & sanitation, constructing schools, medical facilities and more. In addition to these visible grass root initiatives, a significant portion of the larger mining houses also publish sustainable development reports, detailing their actions and commitments to sustainable development in the larger context.

However, when mines close, more often than not, these services are not maintained or appropriately managed, localised unemployment rates shoot up and due to environmental degradation, the natural environment’s ability to sustain people in the area is compromised.

Despite these initiatives, at what level of sustainability are we really working and is what we are doing adequate?

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<sup>1</sup> Cahill, P (2009), *A diamonds journey begins*. [www.MSNBC.com](http://www.MSNBC.com)

## 2. The Financial Crisis

Very few other industries, apart from manufacturing, have similar focus on and pressure to implement sustainable development strategies and community development programmes as the mining industry.

It is therefore no surprise that when viewed from a naturalistic perspective, it is evident that the recent economic crisis was largely caused by business conduct undertaken in a manner which was fundamentally different to the laws of nature that have underpinned environmental and sustainability practices since this field's formalisation in the late 1980's & early 1990's. Little or no consideration of the long term substance and sustainability of the economy that we were feverishly building was contemplated and the past year's events could not have happened in any other way, as little cognisance was taken of, *inter alia*, the following:

- That the ever increasing rate of consumption and demand for natural resources and ecological services are undermining our quest for continued economic growth and prosperity. Fritjof Capra's words come to mind: "The belief that a nation (or company) will grow rich, when its exports exceed its imports... but today, in our over populated and tightly interdependent world, it is evident that not all nations (or companies) can win simultaneously"<sup>2</sup>.
- That human life, prosperity and quality of life cannot exceed the carrying capacity of the available natural resources:
  - It is currently estimated that the sustainable population of earth should never have exceeded 1 billion people;
  - Global population of today is approximately 6.7 billion – all economies of which are powered by finite non-renewable resources and in economic terms, credit.

According to Martin Khor, Executive Director, South Centre, the transmission of the financial crisis to other countries from America occurred through two primary channels; trade and finance. The effects resulted in a steep decline in the demand, price and export earnings affecting commodity-dependent countries as well as a rapid decline of bank loans and external financing to developed and developing countries.

These effects are a consequence of the high occurrence of global interdependency on international trade and foreign investment as a contribution to Gross Domestic Product (GDP). The World Institute for Sustainable Development quotes Bhagwati<sup>3</sup> in defining the process of globalisation: "The world economy globalizes as national economies integrate into the international economy through trade; foreign direct investment; short-term capital flows; international movement of workers and people in general; and flows of technology."

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<sup>2</sup> Capra, F. (1982) *The Turning Point; Science, Society and the Rising Culture*. USA: Simon & Schuster. Great Britain: Wildwood House.

<sup>3</sup> Bhagwati (2004). *In Defence of Globalization*. Oxford University Press.

### 3. Global Sustainability

As stated by the International Institute for Sustainable Development<sup>4</sup>: “The relationship between the environment and globalization — although often overlooked — is critical to both domains<sup>5</sup>. The environment itself is inherently global, with life-sustaining ecosystems and watersheds frequently crossing national boundaries; air pollution moving across entire continents and oceans; and a single shared atmosphere providing climate protection and shielding us from harsh UV rays. Monitoring and responding to environmental issues frequently provokes a need for coordinated global or regional governance. Moreover, the environment is intrinsically linked to economic development, providing natural resources that fuel growth and ecosystem services that underpin both life and livelihoods. Indeed, at least one author suggests that “the economy is a wholly-owned subsidiary of the ecology<sup>6</sup>.”

Despite the more recent focus on sustainable development, economic growth in Africa is been largely driven by the mining (primary) sector, often at the direct and indirect cost of environmental quality and human welfare. Historically, this has been due to a lack of a comprehensive understanding of the direct impacts related to mining and it was often assumed that nature would look after itself and clean itself up after mining ceased. The legacy of this attitude is visible in the various un-rehabilitated mining operations dotted across the South African and greater African landscapes. Globally, the historical trend is little different, especially in developing countries. This trend across the world and across all industries resulted in the motivation for sustainable development, which is rooted in the high degree of ecological degradation and the impacts thereof on the directly affected people.

The standard practice in today’s business environment is that the impact of the destruction of natural capital is not considered in the preparation of financial accounts and the eventual requirement for the replacement thereof is thus disregarded. Profits derived from operations are usually reinvested in the operations or are attributable to shareholders. While it is now legislated in most countries across the world that mining companies provide environmental guarantees specifically related to environmental rehabilitation of their physical footprint or directly impacted area, these provisions are often insufficient when considering the actual rehabilitation costs. Estimations regarding the insufficiency of such provisions (guarantees) vary widely across the industry, due to various factors including distance from readily available supplies and services, operational controls and thus the level of diffusion of contaminants, the minerals mined and so forth. However, these guarantees cater only for the physical disturbances caused by the mining activities itself and do not cover costs related to ecosystem functions such as clean air. This is largely due to these costs being amorphous in nature and nearly impossible to calculate – let alone attribute to individual companies. As an example, it was recently calculated that the treatment of the 200 Mℓ / day Acid Mine Drainage water emanating from coal mines, would cost R438 000 000 per year<sup>7</sup>. This will only cover the treatment of the water itself – in other words, rehabilitation of the direct impact only. The definition and cost of remediation secondary impacts that have been ongoing for many years, remains undetermined as yet. Who should be footing the bill for this cleanup

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<sup>4</sup> International Institute for Sustainable Development (2005). *Environment and Globalization; Five Propositions*: Ministry of Foreign Affairs of Denmark.

<sup>5</sup> Speth, J.G. (ed.) (2003). *Worlds Apart: Globalization and the Environment*. Washington D.C.: Island Press.

<sup>6</sup> Nelson (2002). Popularly attributed to Paul Hawken.

<sup>7</sup> M. Liefferink (2009). *Submission to the Director General of the Department of Water Affairs*. The Federation for a Sustainable Environment

operation? The coal mining companies, national & local government, the directly affected communities, or all those that have benefitted from the cheap supply of coal? This would include the whole of South Africa, including all its citizens past and present all businesses as well as any international role players who benefitted from the cheap coal and its corresponding environmental degradation. What mechanism could be used to recover these 'lost costs'?

The answer is simple – there is no current solution to this one issue – let alone for globally shared and correspondingly degraded resources / ecosystem functions.

Behind the new wave of international concern over environmental and sustainability issues lie two pressures:

- The limits of the natural resources will in time constrain business operations, realign markets and negatively impact on human health and wellbeing. Take water as an example. What would the bottom line impact be on your business, if all raw water had to be extensively treated prior to use?
- Companies face a growing spectrum of stakeholders who are concerned about the environment and vote with their wallets. In the July 2009 publication *High Net Worth*, it was reported that 34% of High Net Worth Individuals (HNWIs), were likely to purchase only environmentally responsible products as a direct result of their experience of the recession<sup>8</sup>. In addition, charitable giving was the second last aspect that HNWIs were willing to cut back on. Education spending was last. This trend cannot be underestimated, especially in the diamond industry.

Are we as the mining industry, living on borrowed time? Is what we are doing unsustainable? Will we, as all other industries, including the financial markets, be forced by conscious consumers and dwindling resources to change our ways?

True sustainability, including the whole spectrum of direct and indirect impacts as well as direct and indirect cost, has not been practically defined in the context of a globalised economy. How, when and by whom this will be determined and quantified, remains a rhetorical question.

#### 4. The Way Forward

The alternative to current business models, can however not only be based on the conservation and improvement of the natural environment (including all physical and bio-physical components) but has to consider economic sustainability. ANY alternative could be regarded as sustainable in the event that appropriate corrective action is taken. For example; it is proposed by Smulders<sup>9</sup> that production requires the transformation of the material extracted from the environment (natural capital) and that this is regarded as unsustainable when more resources are extracted than what can be regenerated by natural processes fed by the flow of solar energy. In the event that this description of sustainability is accepted, current economic

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<sup>8</sup> High Net Worth (2009). *Tomorrow's Philanthropists*. Ledbury Research.

<sup>9</sup> Smulders, S. (1995). *Environmental Policy and Sustainable Economic Growth, an endogenous growth perspective*. Faculty of Economic and Centre, Tilburg University.

activity in Africa is regarded as unsustainable and that both economic and environmental quality will decline until such time as natural capital is liquidated. In order to mitigate this:

- Significant capital expenditure for the development of cleaner technologies and remediation activities to address the impact of current and future development activities will be required.
- Ecological services will have to be replaced by mechanical alternatives (e.g. replacing the water cleaning function of wetland with water treatment plants).
- After the mineral reserve is liquidated, significant capital input will be required for the immediate economic transformation of the region.

Because methodologies, technologies and a myriad of support systems are yet to be developed to define and quantify true sustainability and then correspondingly allocate cost recovery to the appropriate contributing parties, the best this industry can do, is to contain and treat environmentally degrading agents at point source. Although this is a fundamental principle of environmental management as a discipline, its importance is often overlooked and has resulted in an exponential increase in cost when considering containment and point source treatment, versus post contamination event clean up costs. Apart from making sense in the sustainability circles, it also makes perfect business sense.

The mining industry has so often been the fertile grounds in which new business practice has developed. Isn't it time that we again be the leaders in developing new methodologies, technologies and systems to determine the true cost of our activities and correspondingly give back what we've taken? There are various vehicles that can be used to 'give back' – *inter alia* off-set programs, premium on product, establishment of truly sustainable social capital through appropriate development programs. The possibilities are endless. The corresponding financial resources however, may not be – and therefore a fine balance will be required as the economy cannot survive without business and business cannot survive without a healthy environment.

Diamonds especially have had a tough time in the negative public perception domain and this is well documented and reflected in the diamond price trends – especially in the primary market – America, blood diamonds and the questionable of the effectiveness of the Kimberley Process.

The worldwide recession has made people re-evaluate their value systems, both as individuals and as a society. As has been the experience in the sustainable development field, consumers are increasingly demanding more transparency, accountability and responsibility from global business. If consumers continue at its current pace and trend of demands and these practices are implemented, a repeat of the conditions that led to the economic crisis is unlikely.

Although the financial world is only now catching up in terms of long term sustainable business practices, is stepping up to challenges concerning true, globalised sustainability, not our only way forward for all business?

We propose that this intricate balance between profit and responsibility – is indeed – the answer. Sustainability can no longer be regarded as a luxury or a grudge, it has now become a necessity, not only to ensure that future generations have natural resources available to them, but also in order for our generation and businesses to survive in a world not too different from what we know today.

### **The Authors**



#### **Lizelle Prosch, Consulting Manager, Marsh (Pty) Ltd**

##### **Stakeholder Engagement Exxaro (2009)**

Managing stakeholder engagement as part of the mining application and environmental assessment process, Belfast

##### **Environmental Consulting Services Robor (Pty) Ltd (2009)**

Responsibility: project leader *General Environmental advice and application*

##### **Royal Bafokeng Nation Strategic Environmental Assessment**

###### **Royal Bafokeng Holdings (RBH)(2009)**

Responsibility: Project Leader

MES has been appointed by RBH to undertake a Strategic Environmental Assessment for the land owned by the Royal Bafokeng Nation. The purpose of the assessment is to (1) determine the current state of the environment, (2) identify development trends and its potential effect on the environment and (3) evaluate current, and propose future initiatives with the intend to achieve sustainable development. The overall aim of the assessment is to integrate environmental and sustainability considerations in strategic decision-making.

##### **North West Province Environment Outlook**

###### **North West Department of Agriculture, Conservation and Environment (NWDACE) (2008)**

Responsibility: Project Leader

The North West Provincial Environment Outlook Report 2008 is a detailed analysis of the past and present state of the environment, as well as the development of possible future scenarios for North West (NW). The purpose of undertaking scenario planning is to inform decision-makers of possible alternative options relating to the environment going forward.

##### **PPC Secondary Materials Co-Processing Programme – Environmental Impact Assessment**

###### **PPC Cement Company (Pty) Ltd (2005-2009)**

Responsibility: Project Manager

Marsh Environmental Services (MES) has been appointed by Pretoria Portland Cement (PPC) to conduct the Environmental Impact Assessment relating to the proposed use of secondary materials to supplement the coal supply for the firing of the cement kilns.

**Sheba's Ridge Site Selection**

***Sheba's Ridge Platinum (2007)***

Responsibility: Project Consultant

MES undertook a site selection process to determine the sites best suited for the proposed Sheba's Ridge Smelter, thereby minimizing potential impact and managing mitigation measures required.

**Pixley Prospecting and Mining Operation – Environmental Screening Report**

***DMC Coal Mining (2008)***

Responsibility: Project Manager

MES undertook a site sensitivity analysis (Environmental Screening Analysis) of the area proposed for future mining of coal and torbanite to establish the environmental risks and associated cost relating to the mitigation of significant impacts. As part of the process, Marsh further undertook a stakeholder engagement process to assess community, NGO and public concerns. The assessment included a due process review for the approved prospecting rights.

**Environmental Feasibility Analysis**

***Various clients***

The initial investigation of identified land portions to recommend feasible land use to promote sustainable development and possible required environmental approval processes that should be undertaken.

***OTHER ENVIRONMENTAL PROJECTS***

- Environmental Feasibility Investigation for Wadeville Industrial Development – *Cavaleros Group*.
- Environmental Management Plan for Wemmerpan Residential Development.
- Various Environmental Impact Assessments for Residential Developments – *Krisp Properties*.
- Leeuwpoot Development Project – *Urban Dynamics*.
- Visual Impact Assessment for the proposed new diamond mine in the Central Kalahari Game Reserve – *Internal Specialist (Client Gem Diamonds)*.

Visual and Landscape Character Analysis of the Royal Bafokeng Region – *Internal Specialist (Client: RBH)*.



**Anneli Botha, Group HSSE Manager, Gem Diamonds Technical Services**

Anneli has extensive experience in environmental risk and impact assessment and quantification, specifically pertaining to the mining industry. Her experience further includes

project management and execution of substantial Environmental Management Programmes / Plans and Integrated Water and Waste Management Plans for various mines. She has completed several stand alone environmental remediation plans and liability quantifications, due diligence investigations and has successfully managed a number of large turnkey environmental projects. She currently heads up the health, safety, corporate social responsibility and environmental management division for the Gem Diamonds Group and is responsible for corporate reporting and assurance in this field, setting group standards and strategies and focuses on developing and implementing management systems.