

Editors Column

Welcome to the 4 edition of our newsletter for this year. In this edition, we look at Black Crystal and what we are doing in terms of Social Responsibility. Do you know that plastic micro beads are found in a lot of our daily personal products but do you realize the huge negative impact they are having on the environment and our food.

Environmental sustainability is important for us to improve our chances of a good environment in the future. Find out how you can make your business more environmentally sustainable and what residents in Budiro are doing to preserve a wetland in their suburb. Read how one of our most iconic trees, the baobab, are being protected and find out about the innovative environmental projects that the Sunshine Group are carrying out. Lastly, we have an interesting poster on Carbon and how it is affecting our environment.

We welcome your comments and environmental contributions to the Editor on infor@blackcrystal.co.zw. If you no longer wish to subscribe to the Crystal then please email us with this instruction.

Thank you and happy reading!



Environmental Consultants
Caring for the environment beyond today

Black Crystal Consulting is one of Zimbabwe's leading reputable companies offering a quality service in environmental and socioeconomic consultancy services. Black Crystal Consulting believes in ***caring for the environment beyond today*** to ensure that biodiversity is maintained and that natural resources are not depleted for the next generation.

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Black Crystal and Social Responsibility

Social Responsibility is the continuing commitment by organisations to behave ethically toward everyone including staff, local communities and society as a whole, to the environment and to also contribute to economic and social development. It extends beyond statutory obligations and allows organisations to voluntarily take further this action.

Black Crystal is very aware of its social responsibilities and since 2005 we have contributed to the preservation of our natural environment and cultural heritage through our involvement in several Committees and Trusts. So far this year we have undertaken the following social responsibility initiatives:

Science Fair - since 2011 Black Crystal has supported Chisipite Girls Senior School by being one of the Judges at the annual Science Fair which is aimed at increasing women in the field of science (in Africa the percentage is less than 3%). Fostering scientific innovation is one of the key elements to driving sustainable development.



Students at the 2017 Science Fair

Enactus World Cup – In 2016 Black Crystal donated tee shirts and caps for the Zimbabwe team represented by Chinhoyi University of Technology when they participated in the Enactus World Cup, the world's largest business innovation competition for social impact a global competition where students develop and implement innovative and sustainable solutions to some of the world's biggest challenges, Zimbabwe were one of the top 8 teams. In 2017 Black Crystal trained Enactus students on the environment, recycling and the contents of Goal Number 12 of the Sustainable Development Goals.



Sharon Waterworth addressing the Enactus students



Enactus students

Black Crystal continues to be actively involved and sit on the following committees: the Business Council for Sustainable Development Zimbabwe, Biodiversity and Climate Change Technical Committees, the National Trust of Zimbabwe Executive Council, BirdLife Zimbabwe and International Union for the Conservation of Nature (Crocodile specialist group).

We are committed to our making our vision a reality: *'Caring for the environment beyond today'.*

How to make your business environmentally sustainable

It is not easy being green, but more and more businesses are finding that it makes good business sense. Many studies find that customers prefer companies that are able to establish and demonstrate their environmentally conscious credentials. In fact, more than half of consumers are willing to pay more for products and services provided by environmentally conscious companies. This preference for companies to do the right

thing by the earth has driven big companies to do all they can to prove their green credentials. Some are even 'green-washing' to find favour with the consumer.



Andrew Woodward, communications director at Sustainable Business Australia, said that the desire to buy with environmentally sustainable businesses was rising. "More and more customers are looking for businesses that are making an effort with sustainability," he said. "People like to be seen to be doing the right thing. When they can, they'll gravitate toward companies that are doing the right thing." He added companies want to reduce their carbon footprint not just to appeal to customers, but because it's the right thing to do. "Businesses at all levels are behaving more responsibly and doing the right thing, even though it may not deliver a financial result," said Woodward. "That's just the business environment these days. It costs no more to behave responsibly."

So how does a business reduce its carbon footprint?

Four areas to look at Woodward suggested that businesses of all sizes could benefit from reviewing the following areas:

i. Travel

Woodward said businesses of all sizes should reconsider the need for travel given the increasing availability and sophistication of conferencing technology. "Previously, the easiest thing to do was to jump on the plane and go to Sydney for a meeting. That's not time efficient or environmentally sound – and now you can do it from your desk," he said.

ii. Printing

The rise of paperless document storage has proved to be a game-changer for businesses, not just in the ability to not waste paper but in efficiency. "With the technical

capabilities of hardware and software these days, you don't need to print," said Woodward." "All of the paper that has been collected by organisations over the years can be digitised, which makes it searchable and eliminates storage costs." Searching a shoebox for that vital invoice is a lot more time-consuming than looking through a digital record.

iii. Your supply chain

You may be on the path to carbon neutrality, but are your suppliers? "Have a look outside your organisation, said Woodward. "What are the environmental policies of your suppliers? How do they stack up? "If you really are committed to sustainability, are you comfortable buying from them?"

iv. Your energy supply

With energy prices on the east coast starting to bite, it could be worth investigating more environmentally friendly sources of energy supply. "If yours is an established business with owned property or a long-term lease, then it is very much worth your while looking at solar and battery solutions," said Woodward. "The net cost is probably about the same over a decade, but you will be using the sun instead of coal." He added that businesses in leased premises could ask the question of their landlord.

What can you do today?

The path to environmental sustainability can be long, but there are things you can do immediately that will make a difference. The simplest thing, Woodward said, was to buy carbon offsets for your business. "Just as you can buy carbon offsets for flights, you can buy them for you, your family, your car and your business," he said. "For an individual, you can be 'carbon neutral' for about \$250 a year. This goes into things that produce green energy or carbon capture." He said he used South Pole Carbon, a service which invests in green projects and assesses your potential contribution to them based on your business' energy use. From there, business owners can look to make more substantive changes, like looking into their premises and equipment, as well as their policies and procedures.

Source: <https://www.myob.com/au/blog/how-to-make-your-business-environmentally-sustainable/> (Article by James McGrath)

Microbeads

Microbeads are manufactured solid plastic particles of less than one millimeter in their largest dimension. They are most frequently made of polyethylene but can be of other petrochemical plastics such as polypropylene and polystyrene. They are used in exfoliating personal care products such as facial scrubs, make-up, exfoliants and toothpastes. They may be added to over-the-counter drugs. In biomedical and health science research microbeads are used in microscopy techniques, fluid visualization, fluid flow analysis, and process troubleshooting. Some are visible to the naked eye, but others are as tiny as one micrometre.



Countries which include the United Kingdom, United States of America, Ireland, Netherlands and Canada have or are in the process of banning the use of microbeads and are encouraging companies to replace the microbeads with natural replacements like walnut shells which were used before. This is because microbeads can cause plastic particle water pollution and pose an environmental hazard for aquatic animals in freshwater and ocean water. In the US, the Microbead-Free Waters Act of 2015 phased out microbeads in rinse off cosmetics by July 2017. Microbeads are washed down the drain, can pass unfiltered through the sewage treatment plants and make their way into rivers and canals, resulting in plastic particle water pollution.



A variety of wildlife, from small fish, amphibians and turtles to birds and larger mammals, mistake microbeads for their food source. Their stomachs are full after ingesting the plastic beads but they are literally dying from starvation. Higher up in the food chain, humans are now eating particles of plastic beads as they are contained in some of them fish that we eat.

This ingestion of plastics introduces the potential for toxicity and harmful chemicals thus transferred include hydrophobic pollutants that collect on the surface of the water such as polychlorinated biphenyls (PCBs), DDT, and polycyclic aromatic hydrocarbons (PAHs). You can help by acting a responsible smart consumer and not purchase products with plastic micro beads contained in them. For more information on Microbeads, you can watch this video on YouTube - https://youtu.be/uAilGd_JqZc.

Source: <https://en.wikipedia.org/wiki/Microbead>

Baobab Protection Project

Gonarezhou National Park, the second largest park in Zimbabwe, has a number of spectacular Baobabs trees which provide a habitat and food source for a wide range of bird species; they are also a major iconic feature of the landscape.



Some of the trees are many thousands of years old. The trees are rich in moisture and sugar, making them popular food source for elephants but the soft, fibrous structure of the trees allows elephants to gouge out large chunks of their stems. With the successful conservation of elephants, the park now has one of the highest densities of elephant in Africa. Unfortunately, the increased population of elephants has led to an increase of Baobabs being damaged and eventually being felled and lost forever.



The remains of a collapsed Baobab tree

As Ecologists know, elephants do not like to stand on an unstable substrate and so they devised three simple strategies for the protection of the trees:

- 1) Packing large fallen branches/logs in a 3-4 metre circle around a tree.
- 2) Placing a single layer sharp rocks in a 3-4 metre circle around a tree.

- 3) Wrapping the bottom part of the trunk with a heavy gauge wire mesh.



In 2015 a Baobab Protection Project was initiated and results to date, kindly provided by Chilo Lodge, reveals the success of each strategy:

	No. of Baobab's protected	% damaged after protection	% fallen after protection
Logs	28	13	8
Rocks	74	9	9
Wire	47	6	0
Fence post	1	0	0

Needless to say the elephants easily removed the fallen logs but the other two strategies, which are very simple and effective, have worked and around 150 trees have successfully been protected. Funding for the project was provided by a combination of generous donations from park visitors, the Gonarezhou Support Group (based in Chiredzi) and the Frankfurt Zoological Society.

In June 2016 the Frankfurt Zoological Society and the Zimbabwe Parks and Wildlife Management Authority signed an agreement for the formation of the Gonarezhou Trust. The Trust is an exciting and innovative new partnership management model for the park, with the aim of achieving the long-term sustainable and effective management of the Park, including expanding the baobab protection project into other areas and establishing

concrete partnerships with communities leading to shared responsibilities and benefits.

References:

www.chalofafrica.com/diary/rocking-baobabs-gonarezhou-conservation-trust-zimbabwe/
<https://fzs.org/en/news/formation-gonarezhou-conservation-trust/>
 Chilo Lodge: www.chilogorge.com

Residents launch ambitious project to protect wetlands



The Environmental Management Agency (EMA) has pledged its support for a pilot project that will see residents of Budiroo identifying a wetland area that will be fenced as a way of keeping it intact and guarding against invasion.

The idea for the project was born during a community meeting organized by the Harare Wetlands Trust in Budiroo, Ward 33. The meeting was attended by Ward 33 residents who are part of the Local Environmental Action Plan (LEAP) programme which is a local plan developed for the management of the environment. Residents who spoke during the meeting blamed politics and abuse of power for wetlands destruction saying politicians were in the habit of using land as a tool to win elections. Lack of knowledge about the the ecolgoical importance of wetlands among local people was also cited as being one the factors leading to wetlands destruction in Harare.

“It is necessary that once we identify wetlands that we need to protect in this area, we should ensure that we put measures that will guard against invasion or any form of

destruction. Fencing such areas is critical to ensure they are not tampered with," said a resident. An official from EMA, Batsirai Sibanda pledged to support the community's efforts in preserving wetlands adding that capacity building trainings were necessary to ensure communities are educated on the importance of wetlands. Wetlands are the major sources of water for Harare and the Zimbabwe National Water Authority (ZINWA) has expressed concern that their destruction has led to water levels drastically falling in Harare.

The Harare Wetlands Trust is currently mobilizing Harare residents to actively participate in wetlands preservation. Ward 33 Councilor, Oddrey Chirombe said community involvement in wetlands preservation was quite critical. "As you might all be aware, Harare is facing serious water challenges and the destruction of wetlands means the problem will worsen if we do not take preventive action. It is thus incumbent upon us as residents to ensure we complement efforts being made to preserve water sources in Harare," said Chirombe. The Harare City Council has also pledged its support towards preservation of wetlands in Harare. Zimbabwe is a signatory to the Ramsar Convention on the protection of wetlands and the country has seven internationally recognized sites. Wetlands are protected under the country's Environmental Management Act.

Source: <http://www.zimbabwesituation.com/news/residents-launch-ambitious-project-to-protect-wetlands/>

International Days

World Habitat Day

World Habitat Day is observed every year on the first Monday of October throughout the world. It was officially designated by the United Nations and first celebrated in 1986. The purpose of the day is to reflect on the state of our cities and towns and the basic human right to adequate shelter. It also aims to remind the world of its collective responsibility for the habitat of future generations. For this year, it took place on the 2nd of October. The theme was Housing Policies: Affordable Homes.

This year's World Habitat Day celebrations in Zimbabwe took place in at Phelandaba Stadium in Gwanda. In a speech read by Provincial Administrator Ms Sithandiwe Ncube on behalf of The Minister of State for Provincial Affairs in Matebeleland South Province, Honorable Abednico Ncube, she said the province has surpassed the required housing stand development target for 2017 which is provided for in the economic blueprint, the Zimbabwe Agenda for Sustainable Socio Economic Transformation (ZIMASSET).

The International Day for Disaster Reduction (IDDR)

IDDR encourages every citizen and government to take part in building more disaster resilient communities and nations. The United Nations General Assembly designated October 13th as the International Day for Natural Disaster Reduction as part of its proclamation of the International Decade for Natural Disaster Reduction. In 2002, by a further resolution, the General Assembly decided to maintain the annual observance as a vehicle to promote a global culture of natural disaster reduction, including prevention, mitigation and preparedness.

In 2009, the UN General Assembly decided to designate October 13 as the official date and also changed the name to International Day for Disaster Reduction. IDDR 2016 saw the launch of the new "Sendai Seven" campaign, which centres on the seven targets of the Sendai Framework, an advocacy initiative to encourage the implementation of key frameworks and systems with the goal of saving lives, reducing disaster losses and improving management of disaster risk. The Sendai Seven Global Targets are:

- (a) Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality rate in the decade 2020-2030 compared to the period 2005-2015.
- (b) Substantially reduce the number of affected people globally by 2030, aiming to lower average global figure per 100,000 in the decade 2020 -2030 compared to the period 2005-2015.
- (c) Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030.

(d) Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.

(e) Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020.

(f) Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this Framework by 2030.

(g) Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030.

More can be read about the Sendai framework here <http://www.unisdr.org/we/coordinate/sendai-framework>

The International Day for Preventing the Exploitation of the Environment in War and Armed Conflict

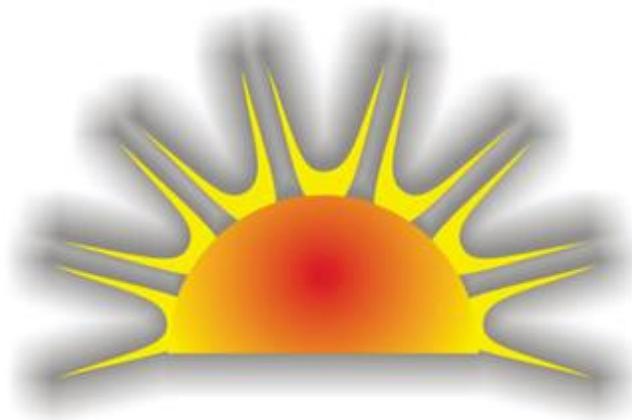
This international day is observed annually on November 6. It was established on November 5, 2001 by the United Nations General Assembly, during Kofi Atta Annan's tenure as Secretary-General. Of this observance Secretary-General Ban Ki-moon has since written, "We must use all of the tools at our disposal, from dialogue and mediation to preventive diplomacy, to keep the unsustainable exploitation of natural resources from fueling and financing armed conflict and destabilizing the fragile foundations of peace." Various calendars found on the World Wide Web reference November 6th in abbreviated fashion as 'World Day to Protect the Environment in War'.

Zimbabwe Sunshine Group

Waste management continues to hamper development in most parts of the world, Africa being the most affected. Declining economies, the rising quality of life and high rates of resource consumption patterns have had unintended and negative impact on the environment, especially in urban areas.

This has resulted in generation of waste beyond the handling capacity of waste management authorities.

African countries face high volumes of waste, low capacity and high operation costs. The lack of proper disposal technologies and methodologies, inadequate resources further worsens the situation. As a result there has been a rise in illegal dumping of household and industrial waste posing serious health and environmental problems.



ZIMBABWE SUNSHINE GROUP

Zimbabwe Sunshine Group (ZSG) is a group of young volunteers people who have chosen and dedicated themselves to promoting, educating and informing the public about environmental issues in Zimbabwe. The group is registered with the Zimbabwe Youth Council and works closely with the Ministry of Environment Water and Climate, Environmental Management Agency (EMA) and collaborate with other players in environmental issues.

They have been working to address some of the environmental and waste management problems by committing themselves to integrated and sustainable development. This commitment can be seen in the efforts they are making through the annual Green, Waste and Energy Expo, clean up campaigns and awareness campaigns as well as the school waste management programme. The organisation also realised the need for sustainable solid waste management through waste minimisation, recovery, collection and world class disposal systems. In March this year Mr Ronny Mbaisa, ZSG Director travelled to Sweden. The aim of the visit was to show how the Swedish government is dealing with their waste so that we can implement the same programme in

Zimbabwe. Sweden creates energy from waste which is used for heating and powering refuse vehicles.



The director visited a number of waste transfer centres and waste to energy companies in Malmo. This visit came at the right time as Zimbabwe faces challenges in proper waste management systems.



The visit was, in a way, complementing the aims of the 2016 Green, Waste and Energy expo which ran under the theme 'Advancing Waste Management and Renewable Energy Technologies' and Maria the Swedish Deputy Ambassador to Zimbabwe challenged ZSG to visit Sweden and see how efficiently they deal with their waste. The 2017 Expo will build on the success of the previous ones as we aim to call for the support of the renewable energy technologies through investment, the 2017 Africa Green, Waste and Energy Expo will run under the theme Develop, Invest, Sustain. The visit to Sweden provided sustainable solutions to the waste management problem. The initiative is helping in the improvement and increased access to affordable energy, enhance energy supply security, contributing to sustainable development and assist in poverty alleviation. The organisation is now in the

final stages of the construction of a model waste transfer at the Harare Agricultural show based on the ones in Sweden.



The centre is meant to serve the Zimbabwe Agricultural Society and surrounding communities, particularly Belvedere, reducing the strain on the local authority while reducing the waste that goes to the dump, illegal or otherwise and in the process reducing the proliferation of green-house gases.

The use of integrated solid waste management has proved effective and the organisation is now embarking on an institutions' programme targeting schools, corporates, governments and non-governmental organisations training them on the exercise and its benefits. Quite a significant number of organisations have taken up the concept, among them UNICEF, UNDP, tertiary education institutions as well as primary and secondary schools.

For more information about Zimbabwe Sunshine Group and their initiatives, you can contact them on:

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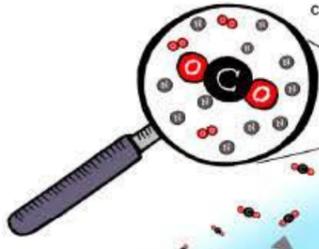
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WHAT IS CARBON? WHY SHOULD WE BE WORRIED?

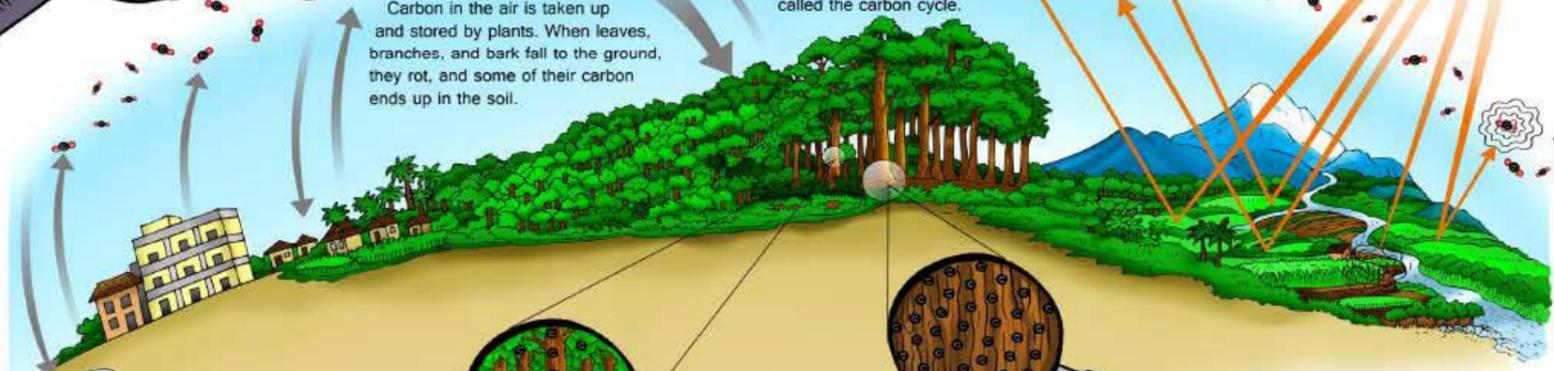
1 Carbon is naturally all around us. Our air naturally contains different gases, including carbon dioxide.

One carbon atom and two oxygen atoms bonded together create an invisible gas called carbon dioxide, CO₂. CO₂, oxygen and other gases form the Earth's atmosphere. Carbon is an element found in every living thing. Oxygen is another element in the air we breathe.



Carbon in the air is taken up and stored by plants. When leaves, branches, and bark fall to the ground, they rot, and some of their carbon ends up in the soil.

Also, carbon is released in the air in a number of ways. This overall exchange process is called the carbon cycle.

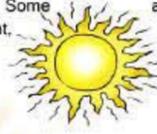


Like forests, oceans also store large amounts of carbon, especially in the deep ocean, partly stored in aquatic plants and partly dissolved in the water.

Plants take in CO₂ from the air, and use the 'carbon' component to make wood, leaves, stems and roots. About half the weight of dry wood is actually carbon. The heavier the wood is the more carbon that is stored. Forests thus store a lot of carbon in trees and soil.

2 The greenhouse effect supports life on earth by keeping warmth from the sun.

Rays from the sun pass through the Earth's atmosphere. Some of these rays heat up the atmosphere, as this heat is trapped by CO₂. Some are reflected to outer space, and this is how the earth loses heat, by radiating called the "greenhouse effect". Without the greenhouse effect, Earth would be too cold for plants or animals to live.



3 Human activities increase the amount of carbon in the air.

Some human activities release CO₂ into the air. CO₂ is released when we burn fuel to run our cars or to make electricity.

People are adding CO₂ to the air faster than the Earth can take it up.

4 Increased carbon in the air puts the greenhouse effect into over drive, changing the climate.

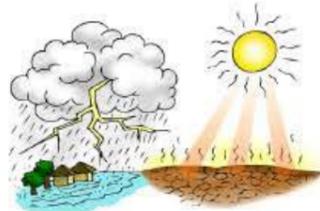
Rising levels of CO₂, and other gases, released by human activities cause the Earth's temperature to increase. This is called 'Global Warming'. Rising air temperatures change weather including where and how often rain falls. As these weather patterns change it is called 'Global Climate Change'.

5 What do these changes mean?



Rising temperatures

The hottest days of the year may become hotter because of rising global temperatures. Hot regions will have more extreme droughts and wildfires. Hurricanes and other tropical storms thrive over warm ocean water, so we may see more of them. As ocean temperatures increase, storms may become more violent.



Changing rainfall and seasons

We may see changes in where, when and how much rain falls, causing too much rain in some places and not enough in others. As temperatures rise, seasons may become harder to predict and floods and droughts may become more extreme.



More crop failure

The production of many agricultural crops in tropical regions may dwindle, because of lower rainfall and hotter temperatures. This will have major impacts on food availability. Diseases and crop pests may come to thrive in areas where farmers have never faced them before. Droughts, floods and storms may cause additional problems.



Rising sea levels

Rising global temperatures cause water, currently frozen in ice caps and glaciers, to melt. This water causes the ocean water level to rise. Many low lying and coastal areas will flood, and small islands may completely disappear.

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Thank You!!!