



The UN Sustainable Development Goals

Some examples of how selected sectors can contribute to their achievement in Namibia

FOREWORD



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In September 2015, a historic event took place; an event designed to change our world for the better. Member states of the UN--including Namibia--signed off on an ambitious development agenda. The world agreed on the 2030 *Agenda for Sustainable Development* to guide all efforts over the new fifteen years, to end poverty, to protect the planet, and to ensure prosperity and lasting peace for all.

The Sustainable Development Goals (SDGs) were thus born.

Arriving at these 17 goals was a bottom up and consultative process. The SDGs therefore represent the aspirations of the world. The goals are people's voices, and they symbolize what people view as critical to ensuring sustainable and inclusive development.

The SDGs build on the success of the Millennium Development Goals (MDGs) and aim to go further to end all forms of poverty. The new goals are unique in that they call for action by all countries, poor, rich and middle-income to promote prosperity while protecting the planet. They recognize that ending poverty must go hand-in-hand with strategies that build economic growth and that address a range of

social needs including education, health, social protection, and job opportunities, while tackling climate change and environmental protection.

As Namibia moves forward in accelerating development and eradicating poverty, new partnerships are vital to bring on board knowledge, expertise, innovations, and new technology to address long standing challenges. The UN is well placed to share knowledge, disseminate global best practice and support the process of strengthening partnerships and developing catalytic solutions to national challenges.

The UN recognizes the importance of partnerships for delivering concrete results. As the UN we are committed to remaining Namibia's partner of choice. A partner that believes in Vision 2030: a better world where no one is left behind: a peaceful and industrialized nation, driven by Namibian women, men, girls and boys who are skilled, and healthy in the alleviation of poverty.

We look forward to continued partnership, dialogue, and action to make the ideas of today, into a reality for tomorrow.

Millions of lives and livelihoods depend on it!

INTRODUCTORY REMARKS

Governments from around the world adopted the 2030 Agenda for Sustainable Development at the United Nations General Assembly in September 2015. The Agenda covers 17 Sustainable Development Goals and 169 targets that all member states aim to achieve by 2030. The launch drew extensive media coverage, but since then it has been rather quiet in Namibia regarding the SDGs, even though they will influence our policies and actions over the next decade and a half. This publication aims to raise awareness about the goals and how some selected institutions, business and sectors can contribute to achieving them.

The government plays an important role in achieving these goals and targets, since it is responsible for achieving some of them directly. In addition, it is government's domain to design and implement forward-looking policies and to create the legal framework in order to ensure that we achieve the SDGs. However, as some of the contributions in this publication illustrate, there is much work to be done and already being done by the private sector in support of specific goals and targets. For

instance, businesses are already investing in renewable energy via solar photovoltaic systems and biomass, which will not only reduce Greenhouse Gas emissions (SDG 7 - Clean energy, SDG 13 - Climate action), but because it makes business sense as well. There are other areas where stronger cooperation between the public and private sectors will ensure that specific goals, such as poverty eradication (SDG 1), quality education (SDG 4) and the creation of decent jobs (SDG 8), are achieved by 2030 or even before.

But beyond these two sectors, many targets can only be achieved if the whole population is involved and supports the targets. For instance, target 3.6 aiming at halving the death from road traffic accidents will only be accomplished if we all change our attitude, become more mindful of other road users and stick to basic safety measures and rules. Likewise, every household can back various SDGs including SDG 12 (Responsible consumption), SDG 13 (Climate action) or SDG 15 (Life on land), by simply following the triple R (Reduce, Reuse, Recycle), which does not require financial resources, merely a change of mind-set.

However, besides domestic efforts, regional coordination is needed, since issues such as climate change do not stop at borders. The article on SASSCAL illustrates



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what is already being done in some areas. Furthermore, regional cooperation and integration will support attaining SDG 8 (Decent work and economic growth).

All stakeholders in the public sector, private sector, civil society, etc. will need to identify and prioritise targets within their own institutions and sectors. These targets should then be combined at the national level to set the national SDG agenda with clear priorities, responsibilities and benchmarks. This process has to start now and will ensure that we make steady progress towards achieving the SDGs.

SDGs REINFORCE THE WAR ON POVERTY AND INCOME INEQUALITY

By UNDP with inputs from Klaus Schade

Eradicating poverty in all its forms remains one of the greatest challenges facing humanity today. While the number of people living in extreme poverty globally has dropped by more than half between 1990 and 2015 (1.9 billion to 836 million), too many people are still struggling for access to the most basic human needs.

The new sustainable development agenda, which has the 17 Sustainable Development Goals (SDGs) at its core, is designed to provide development focus until 2030 and calls for global action to eradicate poverty and to save the planet.

Every UN member state, including Namibia has committed to achieving the 17 SDGs. This involves targeting the most vulnerable, increasing access to basic resources and services, and supporting communities affected by conflict and climate-related disasters.

The 2030 Agenda recognises that we can be the first generation to succeed in ending poverty, just as we may be the last to have a chance of saving the planet.

SDG 1 (*No poverty*) aims to end poverty everywhere, in all its forms, by 2030. Although the global extreme poverty rate, (the share of the population living on less than US\$1.25 per day) has been cut in half, there are currently approximately 1.2 billion people globally who continue to live below the poverty threshold of USD1.90 per day.

The challenge in tackling poverty is worsened by factors such as climate change, population growth and migration, which are putting disproportionate pressure on livelihoods especially in rural areas where poverty is entrenched and people often have the least resilience.

Namibia has good stories to tell when it comes to development. By 2010, the number of poor people in the country was reduced from seven (in 1994) to three out of every ten people according to the Namibia Household Income and Expenditure Surveys. Thus, the country has succeeded in halving poverty since the Millennium Declaration was signed in 2000, much ahead of 2015 for which the target was set. It should, however, be noted that the definition of poverty was changed from the food consumption ratio (the share of total consumption that households spend on food) to the basic needs approach. The basic needs approach calculates the value of basic food, clothing and other items that a person/household needs.

Poverty levels are higher in rural areas as compared to urban centres. 27% of households in rural areas were classified as poor and 14% as severely poor in 2010, compared with 10% and 4% respectively in urban areas. Furthermore, female-headed households were more often affected by poverty (22%) than male-headed households (16%). The elderly was more likely to live in poverty (poverty rate of above 24% for persons older than 55 years of age) than younger age groups. Poverty had also a regional profile. While 43% of households in the Kavango region were classified as poor, this was only the case for 5% in the Erongo region. Education plays an important role in addressing poverty. 0.6% of households whose head completed tertiary education were poor compared to 33.9% of households whose head had not completed any formal education.

While Namibia has made progress in reducing poverty, inequality remains still high. The

Gini coefficient of 0.597 in 2010 had hardly changed since 2004 (0.600). It is clear we have unfinished business with SDG 10, which focuses on reduced inequalities.

Namibia's social safety net, in particular the social grants, have contributed to the reduction in poverty. Persons 60 years of age and older in 2016 receive a monthly Old Age Grant of N\$1,100. The grant was increased in 2015 by N\$400 per month to N\$1,000 and in 2016 by another N\$100 per month. The coverage of the grant increased as well from about 101,000 beneficiaries at the beginning of 2002 to about 148,000 in 2014. The grants not only benefit the recipients, but also help children who stay with their grandparents, particularly in rural areas. Hence the grants contribute to alleviating child poverty.

People with disabilities who are older than 16 years of age receive the Disability Grant. The number of recipients had more than doubled from some 11,700 beginning of 2002 to 29,550 in May 2014. Orphans and Vulnerable Children in Namibia are eligible for a Maintenance Grant, Foster Care Grant, Special Maintenance Grant (children with disabilities under the age of 16 years) or Vulnerability Grant. While the grant was set at N\$200 per month in 2000 and increased in 2014 to N\$250, the coverage has increased substantially. In 2003 less than 20,000 children received the grant compared to almost 236,000 in September 2016.

UNDP's contribution to Namibia's development

UNDP Namibia's largest programme is focused on energy and environment, and through this programme we have helped channel over US\$70 million since the mid-90s to this sector and expect to channel an additional US\$33 million over the next five years. UNDP Namibia's overall support includes: strengthening the management of national parks and conservancies, thereby expanding protected areas by over 60,000 sq. km; and enhancing resilience activities to climate change for over 50,000 people, especially women.

UNDP is also implementing the SCORE project that targets SDG 13 (*Climate Action*) and delivers multiple development benefits. Through this project the United Nations De-



Children thrashing millet in rural areas

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velopment Programme (UNDP) and the Government of Namibia are strengthening the adaptive capacity to climate change and reducing the vulnerability of 4,000 households (approximately 25,000 people) to floods and drought.

This is achieved by strengthening smallholder adaptive capacity for climate resilient agricultural production practices, the restoration of wells and enhancement of floodwater pools for food and mainstreaming climate change into national agricultural strategy/sector policy, including adjustments to budgets for replication and up-scaling. 80% of the households that are benefiting are female headed.

Looking forward

UNDP administrator, Helen Clark, in her statement at the International Day of Eradication of Poverty, mentioned that the end of poverty can only be achieved with the end of gender-based discrimination. All over the world, gen-

der inequality makes and keeps women poor, depriving them of basic rights and opportunities for well-being.

Gender inequality remains a key challenge, as does the widespread shortage of decent work. Global health threats, more frequent and intense natural disasters, volatile commodity markets, spiralling conflicts, and violent extremism, terrorism, and related crises have all impacted adversely on the development progress of the recent decades.

Eradicating poverty requires economic growth that is inclusive and sustainable (SDG 8 – *Decent work and economic growth*). It requires well-designed social protection systems that enable people to sustain basic living standards even when shocks occur. These systems also help children stay in school, enable families to get enough nutritious food, and provide a stable foundation on which people can build a better future.

Each country faces specific challenges in its pursuit of sustainable development. The most vulnerable countries and, in particular, African

countries, least developed countries, land-locked developing countries and small island developing states receive special attention, as do countries in situations of conflict and post-conflict countries. There are also serious challenges within many middle-income countries. As Namibia moves forward in accelerating development and eradicating poverty, new partnerships are vital to bring on board knowledge, expertise, innovations, and new technology to address long standing challenges. Effective partnerships require dedicated frameworks, policies and strategies, to help governments and the private sector work together.

SDG 17 (*Partnerships for the Goals*), which calls on us to strengthen the means of implementation and revitalize the global partnership for sustainable development, speaks to global partnerships for achieving the SDGs.

UNDP Namibia remains committed to the continued development of Namibia and all its citizens so that no woman, man or child is left behind. Winning the war on poverty is a difficult, but not impossible, task.

LEVERAGING SCHOOLS FOR HEALTH, REDUCED INEQUALITY AND ZERO HUNGER

In Namibia there are 1,779 government and government-aided schools which provide education to more than 700,000 learners. These schools have teachers, headmasters and premises - some better than others - but they share the characteristic that all the children of Namibia are there for 195 days of the year.

These schools provide the infrastructure to

implement programs which will allow Namibia to achieve many of the Sustainable Development Goals by using the education system. The SDGs that I will focus on are SDG 2 (*Zero Hunger*), SDG 3 (*Good health and well-being*), and SDG 10 (*Reduced inequality*).

Zero hunger (Sustainable Development Goal 2)

Idea:

The Namibian government has introduced a Namibian School Feeding Programme (NSFP) that is funded and run entirely by the Namibian government with technical assistance from the World Food Programme (WFP). It provides a standardized mid-morning meal to more than 330,000 learners in 1,400 primary and combined schools throughout the country at a cost of some N\$104 million. The meal consists of a porridge prepared at schools of a maize meal blend. The maize meal blend is fortified and by weight consists of 63% maize meal, 25% soya protein blend, 11% sugar, and 1% salt. Cooking utensils, fuel and storerooms are expected to be provided by the community and community members usually volunteer to prepare the porridge.

There are, however, significant shortcomings which need to be addressed. The rations contain less kilojoules and a lower fat content than what is recommended by the WFP. During 2016, when drought conditions prevailed,

the programme was suspended in some schools due to a scarcity of maize within the country and also due to maize prices which have increased drastically since December 2015.

Records of a private school, which runs a school feeding programme at a cost of N\$5 per day, show that two nutritious meals can be provided to each learner at school. This will amount to some N\$680 million per annum if meals are provided to all learners in public schools for the 195 school days. In this one step, all of the following results are obtained according to a WFP report on school feeding programmes:

- Alleviate short-term hunger
- Improve school enrolment, attendance and reduce drop-out rates
- Improve students' learning, cognitive functions, in-class behaviour, academic performance and ability to concentrate
- Provide a vehicle for micro-nutrient supplementation
- Contribute to children's psychological well-being
- Alleviate some of the cost of children's schooling
- Act as an effective platform for other needed inputs
- Mobilize and build capacity of national governments and other partners
- Work as an effective tool against HIV/AIDS
- Create jobs and private sector opportunities



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Implementation:

Policy intervention with strong political will behind it is needed to address these concerns. Schools have to be provided with adequate cooking supplies and cooks and cleaners have to be employed. This can be done in collaboration with the private sector. In South Africa, a private sector company in co-operation with the South African government, is responsible for feeding 1.1 million school children daily. A similar framework could be adopted in Namibia to ensure successful implementation.

Healthcare (Sustainable Development Goal 3)

According to the Global Competitiveness index, Namibia ranks 122nd out of 138 countries in the Health pillar. The areas where we rank worst are tuberculosis incidence and HIV prevalence and the accompanying business impact thereof.

Idea:

Set up a primary healthcare clinic next to every school. This way, schools become the point of basic primary healthcare provision to children and the rest of the community. This means that school infrastructure and the fact that all children are there every day is used by the Health Ministry to address basic health, sexually transmitted diseases and teenage pregnancy.

Implementation:

The primary healthcare clinic can be responsible for the vaccination of children and to be a point of first intervention if a child has a fever or diarrhoea. Tuberculosis testing can also be done and treatment provided immediately and regularly if required.

Schools can be used to provide advice on teenage pregnancy prevention to teenage girls, together with long-acting reversible contraceptives (LARCs), including intrauterine devices (IUDs) and hormonal implants. There has been real success in providing LARCs to teens elsewhere.

A study in 2014 in the New England Journal of Medicine found that, in a cohort of teenage girls and women for whom barriers to contraception (lack of knowledge, limited access, and cost) are removed and the use of the most effective contraceptive methods is encouraged, a large percentage opted to use LARC methods. The rates of pregnancy, birth, and abortion in the cohort of the study were below both the most recent corresponding national rates and the goals set for the project.

Madame Monica Geingos, the Namibian First Lady, is a champion of Start Free, Stay Free, AIDS Free, an agenda to put the world on a Super-Fast-Track to end AIDS among children, adolescents and young women by 2020. School health clinics can be used to attain the



New school buildings

goals of the Global Competitiveness Index.

Start free: A comprehensive sexuality education curriculum is needed in school classrooms. Each school should have a social worker to provide essential support to children who have questions that are not addressed at home. HIV testing can be done, so that all young people know their status. Post-exposure prophylaxis needs to be taken within 72 hours of exposure to HIV and having this available at schools can make it accessible.

Stay free: The global aim of the programme Madame Geingos is involved in is to provide voluntary medical circumcision for HIV prevention to 25 million additional men by 2020, with a focus on young men (aged 10–29 years). The service for boys to be circumcised can be provided and encouraged at these school clinics.

AIDS free: Anti-retroviral treatment can be made available at school for children who need to take it. Effective monitoring can be done to ensure that it is taken on time and regularly.

Namibia already has institutions which assist with the services mentioned above. We can use these institutions, like the Namibia Planned Parenthood Association who have experience in Namibia since 1996, in order to roll the services out on a large scale in schools. It is very important to understand that it is crucial that if these proposals are to be implemented it has to be done with qualified, trained staff, quality pharmaceuticals and clear political will.

Reduced inequality (Sustainable Development Goal 10)

If all children are fed and have access to quality healthcare as proposed, we would have already made major progress towards reducing inequality. Furthermore, early childhood development and quality, relevant higher education training in every region is the key to reducing inequality.

According to the Global Competitiveness Report, Namibia performs poorly in the quality of the mathematics and science education and in the management of schools. In contrast, Namibia scores well in terms of on-the-job staff training. This knowledge from the private sector can be leveraged to make training relevant for the labour market.

We must ensure every school in every region has internet access and qualified teachers. Each constituency should offer schools with an option for students to choose vocational training streams. In this way, learners who choose the vocational stream can leave Grade 12 with an Namibia Qualifications Framework qualification. There does not have to be massive capital outlay for this, we can leverage what we already have. We can train teachers in every region by connecting a teacher's training college to a school in that region. Similarly, we can train nurses in every region by connecting a nurse's training college to a hospital in the region. If necessary, we should bring in international experts to run each of those colleges to ensure the quality. The Vocational Education and Training levy fund and private sector corporate social investment can be used to construct a small but effective vocational training college in each region.

Conclusion

All of the above can only be achieved if resources are allocated to schools and implemented effectively. This will require competent people in every constituency with full support from the Ministries of Health and Education and partnering with the private sector. This might mean that some expertise would have to be brought in from outside Namibian borders and for that we would require the co-operation of the Ministry of Home Affairs and Immigration as well. It is not impossible though. There is already so much to work with if we just choose to collaborate.

SASSCAL - PROMOTING KNOWLEDGE-BASED POLICY- AND DECISION-MAKING IN SUPPORT OF ATTAINING THE SDGs

Weather and the atmosphere ignore national boundaries, as do fluxes of water, food and migrating people. Many ecological processes and mechanisms link neighbouring countries functionally. The fate of downstream riparian communities may depend on decisions taken by upstream communities in a different country; similarly, fire, drought and epidemics are accompanied and partly controlled by trigger mechanisms, tipping points and cascading effects at a regional or even larger scale. Numerous transboundary agreements, institutions, commissions and governance instruments have been or need to be installed to jointly manage important resources and ecosystem services. These include measures to adapt to climatic and other environmental changes, and to improve economic and societal development and integration at multinational scale.

All the above examples strengthen the notion that, in addition to the local grass-roots level and the national priority of political decision-making, it is essential to also address the regional dimension of environmental change. Regional Science Service Centres aim to achieve such a regionally integrated approach to adapting to and mitigating climate change and its consequences, based on robust scientific data, and politically defined by the needs and demands of regional stakeholders.

If African policy-makers are to formulate in-

formed, tested and scientifically sound decisions within the framework that is provided by the United Nations *2030 Agenda for Sustainable Development* and that take due account of local conditions, quality data must be collected by way of demand-driven research, and support tools and scientific capacities must be developed. The role of science in this context, must be understood as a service to those societies that are most severely affected by climate change.

Following the recommendations of the African Union to have a coordinated network of climate service institutions established that share scientific information for policy adjustments and the design and implementation of appropriate adaptation and mitigation actions, Angola, Botswana, Namibia, South Africa, Zambia and Germany established the **Southern African Science Service Centre for Climate Change and Adaptive Land Management (SASSCAL)** with seed funding from the German Federal Ministry of Education and Research (BMBF). The regional SASSCAL office to coordinate the activities is based in Windhoek.

The objective of SASSCAL is to enhance the capacity of policy- and decision-makers to provide science-based solutions for current problems and future risks, in particular with regard to climate change and the associated land management practices. To this end, the Centre will contribute to strengthening existing and developing new capacities for application-oriented scientific research and science policy consultations on climate change, adaptive land management and sustainable development.

SASSCAL has three interconnected functions, namely research management, capacity development and service brokerage.

Examples of SASSCAL's activities during the period 2013 to 2017 include the establishment of a science portfolio with 88 research tasks that are managed within the thematic areas of water, agriculture, forestry and biodiversity, with climate as a cross-cutting theme. SASSCAL supports the development of several remote sensing applications for flood risk management, mapping services, for example, on changes in land coverage, and the development of a user-friendly regional climate modelling system. A number of studies are conducted to improve knowledge on trans-

boundary groundwater flow, water quality and quantity variations and the understanding of groundwater-related processes that are needed for water management purposes.

Other scientific activities are concerned with the establishment of plant and vegetation databases, baseline inventories and biodiversity observatories, and with the monitoring of agricultural ecosystems. Research is conducted on methods for rangeland rehabilitation, the effects of bush encroachment, methods to improve soil fertility as well as on the effect of climate variations on the sowing date of principal food crops.

Additional research tasks deal with forest resource assessments, human-wildlife interactions in agro-ecosystems and with the cultivation, value addition and marketing of climate-smart emerging crops to improve food security.

Of importance is the establishment of a weather observation network. In cooperation with the national weather authorities, SASSCAL installed 50 Automatic Weather Stations (AWS) to contribute to the national meteorological networks. The number of AWSs has been increased to more than 150 stations across the region. Some of these have been installed by SASSCAL, while others are maintained and monitored by SASSCAL on behalf of national agencies. All AWSs send measurements in near real-time via cell phone networks or satellite to the SASSCAL server and the meteorological services. Increasingly, partners are linking their AWSs to the SASSCAL website. Processed results are available in open access on the website, allowing for comparison of stations and periods.

An Open Access Data Centre (OADC), which is the fundamental data and information network within SASSCAL, linking researchers and data providers with the SASSCAL National Nodes and Regional Secretariat into an information sharing network, is being established in Windhoek with support infrastructure in the remaining four African National Nodes. The OADC plays an important role in assuring that information that is fed into the SASSCAL system is standardised, verified and monitored. The data aggregated in this way are transformed into knowledge products that form the basis of the services brokerage function of SASSCAL. User-friendly tools for policy- and decision-makers in the form of dashboards, maps, policy briefs, etc. are developed and distributed. The OADC will soon be transformed into a Competence Centre with the responsibilities for data collection, data analysis,



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knowledge and technology transfer, and Science Communication to focus on translating all these services and products for the stakeholders' use at all levels.

Capacity development interventions include capacity building interventions for communities on natural resource management and monitoring as well as the general enhancement of regional research capacity. Formal MSc courses deal with Applied Science on Earth Observation, Geographic Information Systems and Remote Sensing; Applied and Environmental Geology; and Dryland Forestry. Diploma courses are offered on Meteorology and Climatology as well as on Climate Change Awareness.

So far, almost 100 students at various graduate levels have successfully completed their studies within the SASSCAL research projects, while 130 students are currently registered with SASSCAL. In addition, a significant number of non-SASSCAL-funded students at all graduate levels are currently involved in SASSCAL research projects.

Some €24 million (Euro) have been invested in a research programme that is supported by more than 70 research and academic institutions with inter- and multidisciplinary teams. In total, more than 460 individuals are involved in SASSCAL's research and capacity development activities, which are aimed at enhancing the decision-making capacity within the Southern African region for the attainment of the Sustainable Development Goals (SDGs).

It is the objective of SASSCAL to align its work with the development goals of regional, continental and global umbrella organisations, as can be seen from the range of activities that SASSCAL is engaged in. SASSCAL contributes towards the attainment of the various development plans of the Southern African Development Community, as well as towards the African Union's 2063 Vision and Action Plan. At the highest level, SASSCAL derives its global mandate from SDG 13 (*Climate action*). SDG 13 makes the commitment to "strengthen

resilience and adaptive capacity to climate-related hazards and natural disasters". It is the mission of SASSCAL to contribute towards the eradication of poverty in general through specific actions in the fields of food and water security and the sustainable utilisation of natural resources and terrestrial ecosystems. The following select sub-goals of the SDGs illustrate SASSCAL's commitment to support sustainable development in line with the UN resolution:

- SDG 1 (*No poverty*) aims at building "the resilience of the poor and those in vulnerable situations and reduc[ing] their exposure and vulnerability to climate-related extreme events ...".
- SDG 2 (*Zero hunger*) seeks to "by 2030, ensure sustainable food production and incomes of small-scale food producers, in particular women ...".
- SDG 6 (*Clean water and sanitation*) has set the goal "to implement integrated water resources management at all levels, including through transboundary cooperation".
- SDG 15 (*Life on land*) calls for the protection, restoration and promotion of terrestrial ecosystems, for the sustainable management of forests, and for reversing desertification, land degradation and halting the loss of biodiver-

sity.

For its new Science Plan (2017 to 2021), SASSCAL identified the following five Research Priority Areas (RPAs), namely i) food insecurity, ii) water insecurity, iii) declining and threatened biodiversity, iv) deforestation and degradation of forests and v) reliable climate services in the SASSCAL countries. To finance this second phase, the BMBF has pledged an additional €10 million. Within this integrated framework, SASSCAL-supported research will improve the understanding of climate and land management change impacts, on the natural and socio-economic environment in all identified RPAs. This will equip SASSCAL to provide services and develop products as needed by end-users.

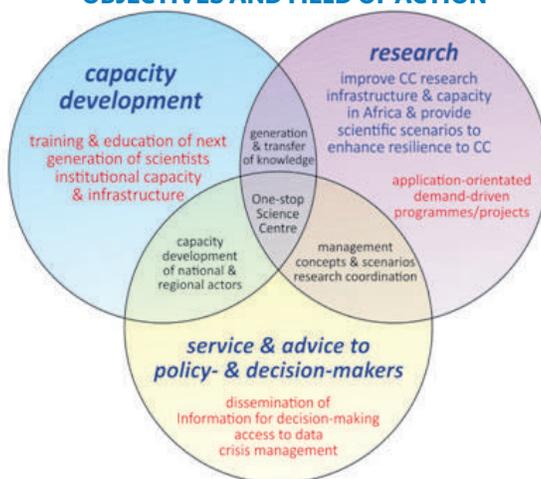
While SASSCAL will not be able to resolve the issues associated with climate change, the Centre is well-placed to contribute meaningfully to the provision of a scientific knowledge-base on which informed decisions and policies in favour of the attainment of the SDGs can be made. By way of targeted capacity development interventions, SASSCAL will ensure that a new generation of African scientists will generate data and produce knowledge that is of relevance to the SADC region.

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OBJECTIVES AND FIELD OF ACTION



HOW CAN NAMIBIA'S MINING SECTOR CONTRIBUTE TO SUSTAINABLE DEVELOPMENT?

When the terms 'mining' and 'sustainable development' are used in conjunction, it raises some rather perplexing questions and issues given the strong juxtaposition in their meanings. Mining in its absolute nature is a

finite activity with an expected time frame of operation, whereas sustainable development refers to a process which ensures that economic activity focuses on meeting the needs of current and future generations,

through mechanisms which will see natural resources and ecosystems to continue meeting such needs.

Over the past decade, sustainable development has taken centre stage in policy debates, and has become even more critical in this arena since the adoption of the Sustainable Development Goals by UN member states in September 2015. Given the

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depleting nature of the mining and minerals industry, companies in the sector have thus been called upon to actively take steps to ensure that the livelihoods of communities dependent on their operations continue to thrive and operate following mine closure. In reality, however, this is a tough feat given the terminable nature of mining operations just explained.

Adding weight to the recent focus on mining operations and sustainable development is the sad reality that historically, mining companies in Africa generally do not have a convincing track record of responsible and sustainable mining approaches, leaving proceeding generations and governments with unrehabilitated mining sites and revenue gaps to fill. Mineral resources have also been the source of many conflicts in African countries, hindering the maximisation of economic benefit from these endowments and thus contributing very little to poverty eradication. The question then arises: how can extractive industries contribute to sustainable development?

In response to some of these challenges and

critical sustainable development issues, the African Union launched the African Minerals Development Centre in December 2013. The Centre aims to increase the economic benefit accruing to countries through the implementation of the African Mining Vision, which focuses on integrating the mining industry with other sectors of the economy, and looks at how mining can contribute to local development.

Contrary to popular belief and perception, mining companies in Namibia do not quite engender to this stereotype, and have in fact acquired a strong social licence to operate. An example of such efforts is the far-reaching education programmes implemented by Rio Tinto's Rössing uranium mine. Since the early 1990s, the Rössing Foundation has worked closely with government to pursue initiatives that have strengthened the capacity of teachers and provided learner support, especially in the areas of Mathematics and Science. This is exemplary of the many ways in which mining companies can contribute to the sustainable development of a country, and in particular to SDG 4 (*Quality education*), through their Corporate Social Responsibility (CSR) programmes.

More recently, a common focus in the of area of CSR intervention has been on environmental protection, conservation and awareness through the recognition of positive implications such programmes can have for later rehabilitation of mining sites, the tourism industry and the preservation of the country's natural wildlife and habitats.

In Namibia, environmental concern in mining is regulated by two pieces of legislation, the Minerals (Prospecting and Mining) Act of 1992 and the Environment Management Act of 2007. Both pieces of legislation require mining companies to provide detailed studies on the potential impact of the operation on the surrounding environment, how these will be mitigated and rehabilitation plans for mine closure, before the company is issued with a mining licence. Robust legislation is thus also imperative in ensuring responsible mining activity and minimising environmental harm on land which could be utilised for other commercial purposes, such as tourism or farming, once mining operations have ceased.

In local policy arenas, there has been a shift in the role of the mining sector in the structural transformation of Namibia's economy and sustainable development, primarily through calls for increased value addition to the country's extracted minerals by mining companies. A few definitions in the mining value addition chain warrant explanation here. Raw materials are regarded as unpro-

cessed ore derived from the mining operation for direct shipment. Beneficiation or value added in the mining sector is referred to as part of the mineral processing value chain after mining. The complete value chain involves the extraction of ore from underground or open-pit operations; mineral processing to produce a concentrate; smelting and finally refining. Namibia's mining sector is already producing minerals with significant value added, such as special high grade zinc, copper cathode and blister copper. Furthermore, the majority of Namibia's minerals are exported in concentrate and not as raw materials as commonly perceived.

While opportunities do exist for further beneficiation of Namibia's minerals within the mining value chain, there are a number of challenges which need to be addressed first. The current and medium term supply of domestic minerals is not sufficient to warrant the construction of capital, water and power intensive facilities. Thus, a lack of economies of scale has been identified as one of the main obstacles for further investment decisions in this sector.

There are also significant opportunities for value addition in manufacturing activities for Namibia's minerals. However, for beneficiation in manufacturing activities, competitive advantage is the key driver of investment decisions, not comparative advantage. Such activities require unique skills and craftsmanship, cost competitive production and access to markets, which are all areas in which Namibia is currently experiencing significant bottlenecks. Consequently, value addition activities to Namibia's minerals in manufacturing should not be proposed as an immediate contributor or strategy to the economy's sustainable development before such issues are adequately resolved.

Despite such challenges, significant economic opportunities do exist in the upstream and side-stream linkages created by the sector, which could be a key factor in contributing to Namibia's structural economic transformation process and hence to SDG8 (*Decent Work and economic growth*). The mining industry creates a number of linkages through the critical mass it provides. Up-stream linkages arise through its demand for locally supplied inputs and services. Examples of these range from financial services to capital inputs. Dundee Precious Metals Tsumeb recently identified an economic opportunity to produce sulphuric acid, a major primary input for two mining operations in Namibia, which prior to the local production thereof, was being imported



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from other countries.

The sector is also rich in side-stream linkages. By way of explanation, these include the support services required for the mine to function effectively, ranging from transport services to power, water, skills, research and development, logistics, communications and financial services. In Namibia, such services and side-stream inputs are provided by the public and private sectors. A railway network, for example, linking a mining operation to a port, could later be leveraged to connect the port to other trading hubs once mining activities have ceased. Namibia is currently looking to pursue such strategies

through the envisioned Trans-Kalahari railway and its national Logistics Master Plan. While the notion of mining as a sustainable activity was altogether refuted at the beginning of this article, the longevity and livelihood of the sector is dependent on exploration endeavours being undertaken. It is recognised that although such investment decisions, which involve a high degree of risk, are largely dependent and influenced by external forces, they are also influenced by the regulatory environment and policies governing them.

In the last five years, Namibia has managed to attract investments of approximately US\$3 billion into the mining sector, ow-

ing primarily to an attractive environment through a favourable regulatory framework. In the last year, however, the positive investor sentiment has reversed as a result of certain policy proposals that would be detrimental to the growth of the mining and exploration sectors if affected.

It is thus not the responsibility of the mining sector alone to ensure that their activities contribute to the sustainable development of the country. It is rather through effective partnerships and understanding between the public and private sectors that mining activities can thrive and continue to contribute to the country's development in a sustainable manner.

PUBLIC DEBT AND PUBLIC INVESTMENT

The Sustainable Development Goals (SDGs) are a comprehensive and ambitious set of targets designed to support sustainable economic and social transformation between now and 2030. In Namibia, there have been, over the years, many ambitious sets of development targets, including the recent *Haramee Prosperity Plan*. In such situations, one of the most important roles for an economist is to ask the question, "How will we pay for this?" Additionally, the economist must look beyond the immediate future and ask, "Can we afford this in a sustainable way?" SDG 8 (*Decent work and economic growth*) seeks to promote inclusive and sustainable economic growth, and public debt levels play a crucial role in this: while a swift rise in public debt can stimulate an economy in the

short-term, this is quite different to the lasting, structural changes required for meaningful and sustainable economic development. Furthermore, other SDGs rely on fiscal stability to finance investment in areas such as agriculture, education, renewable energy, water and sanitation.

The earlier questions are relevant to the current situation in Namibia. Namibia's public debt has risen substantially in the past five years, from approximately 17% of Gross Domestic Product (GDP) in March 2011 to 40.1% of GDP by March 2016. Public debt exceeds the government's current target of 35% of GDP. With the government finding it increasingly difficult to borrow on the domestic market, it is becoming clear that public debt has reached the upper limit of sustainability.

It is often assumed that a developing economy should be unconcerned with running a persistent budget deficit, i.e. spending more than it receives from revenue, year after year. This argument points to the considerable investments in infrastructure still needed in a country like Namibia. It states that, in theory, we can borrow money to quickly develop this infrastructure, thereby improving the growth potential of the economy, and repay those debts from the increased tax revenues yielded by this healthy economic growth.

In reality, many governments run large deficits to finance consumptive public expenditure, such as civil service wages, social grants and operational transfers to parastatals, as opposed to funding economically friendly infrastructure investment. This is less likely to be sustainable in the long term, as this type of expenditure tends to yield less improvement in economic growth, and therefore impacts adversely on the government's ability

to service and repay public debt.

There are other dynamics that tend to encourage public borrowing. In many countries, political forces create a strong incentive for deficits and debt levels to stay persistently high. Although many politicians might publicly disagree with the notion, a politician's top priority when taking decisions in government is to remain in power via re-election. This gives them an incentive to satisfy the immediate demands of their voters before the next election, often at the expense of fiscal sustainability several years later. Empirical analysis suggests* that such political deficit cycles are more likely to occur in new democracies, i.e. countries that have gained their independence relatively recently. This may be because voters are less experienced in judging the sustainability of a prospective government's fiscal strategy, or because voters in new democracies tend to have less information with which to assess fiscal sustainability at election time.

Small economies are also by nature, price takers in the global financial markets, meaning that their cost of borrowing can be influenced by developments in the world's major economic powers. Therefore, external economic forces, such as low global interest rates and favourable exchange rates, can foster temporary conditions in which accumulating large foreign-currency debts is a much more attractive proposition.

Specifically, in the last eight years, interest rates have been kept at historically low levels in the United States and Europe, resulting in investors from these countries investing more heavily in developing economies in search of higher returns. This abundance of new funds has allowed many African governments to borrow internationally for the first time, with countries such as Ghana, Zambia and Angola borrowing large amounts in US



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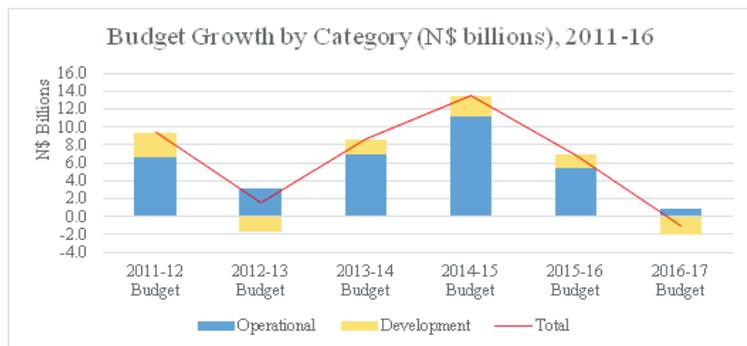
dollars (US\$) on the international markets. Namibia has followed this trend, having borrowed a total of US\$1.25 billion from international investors via two Eurobonds, issued in 2011 and 2015 respectively.

But in terms of how pro-growth this borrowing has been, Namibia's record in recent years is mixed. During the past five years, as public debt rose relative to the size of the economy, most of the increase in public expenditure was in the operational parts of the budget, such as civil service wages, other overheads including supplies and travel allowances, and transfers to state-owned enterprises.

For example, in the 2014/15 financial year, when the budget increased by N\$13.5 billion (or 28.8%), the operational budget increased by N\$11.2 billion (28.4%), whereas the development (capital investment) of the budget increased by N\$2.2 billion (30.6%). Historically, the development portion of the budget has always been less than the operational, so that although it increased by more in percentage terms in some of the recent years than the operational portion, most of the increase in absolute terms went to the operational budget. However, it should be noted that there has been recent large-scale public investment in sectors that are likely to boost economic growth, including port and road infrastructure.

Another consideration, is the quality and composition of the expenditure financed through new debt. In the right circumstances, operational expenditure can have a pro-growth effect, for example via hiring more teachers whilst concurrently improving educational standards and outcomes. The composition of development expenditure has varied from the very productive (e.g. expanding the container terminal at Walvis Bay port) to the less productive (e.g. constructing new office buildings for purely administrative or regulatory public institutions).

Through improving the effectiveness of public capital expenditure, a government can enhance economic performance using the same finite resources. The *Harambee Prosperity Plan* envisages large-scale public investment in energy and water supply, roads, land servicing, housing and Information and Communication Technology (ICT) infrastructure. If, as the plan envisages, this is to be done while also reducing public debt to 30% of GDP by March 2020, a change of approach will be needed. For this to happen, the Namibian government will need to reduce ex-



Source: *Estimates of Revenue and Expenditure, Ministry of Finance*

penditure growth without seriously compromising GDP growth, an unenviable task that will necessitate getting a much better 'bang for our buck' from public investment.

In a 2014 research paper for the World Bank, Cavalcanti, Marrero and Le examine the impact of debt-financed public investment on African economies (Ghana, Tanzania, Zambia and Ethiopia) that have recently borrowed from the international bond markets. Their model highlights that improvements in public investment management can enable debt to be better translated into productive public capital. This in turn implies that better public investment management makes it easier to maintain debt sustainability while borrowing to invest.

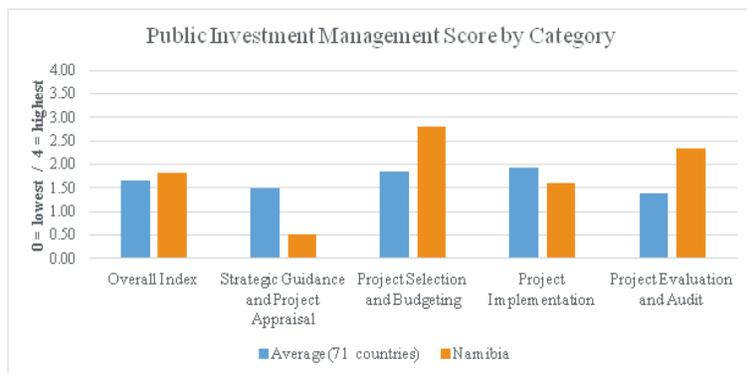
The same paper references the Public Investment Management Index, which was compiled for 71 developing countries by the

of 0.50 out of 4.00 in the latter (relative to an average of 1.49).

Among the areas in which Namibia is deficient, the Public Investment Management Index highlights:

- A lack of broad strategic guidance for public investment decisions, and a lack of sector strategies with cost estimates;
- Insufficient medium-term planning and budgeting for public investment; and
- Very limited or non-existent parliamentary scrutiny of projects prior to their receiving funding.

Taking these findings collectively, it appears that there are opportunities for efficiency gains in Namibian public investment activities, and that these are likely to improve the sustainability of Namibia's public debt portfolio. Effective project appraisal, prioritisation within the budget, medium-term plan-



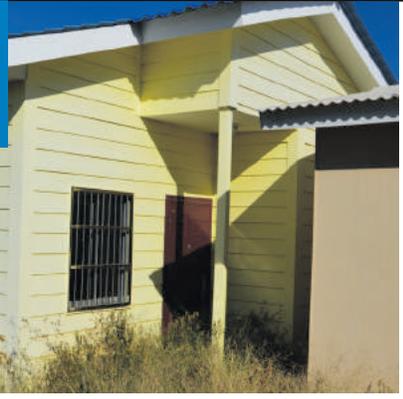
Source: *World Bank – Actionable Governance Indicators Data Portal*

World Bank in 2010, to highlight areas in which such improvements in public investment management are needed.

Of the countries surveyed, Namibia scores relatively well on project selection and budgeting, and project evaluation and audit. Conversely, Namibia scores below average for project implementation, and in strategic guidance and project appraisal with a score

and efficient project implementation would allow Namibia to accelerate economic development without compromising the macroeconomic stability that has long been one of the country's great strengths. Ensuring sustainable levels of public debt will not only contribute to achieving SDG8, but will lay a foundation for progress in many other SDG areas.

HOUSING AND SUSTAINABLE URBAN DEVELOPMENT IN NAMIBIA



Alternative building material

It is estimated that by 2030 about 60% of the world's population will live in urban areas. The developing world in particular, has seen a huge increase in rural to urban migration. This is especially evident in many African countries, Namibia being no exception. Based on data from the 2011 Namibia Population and Housing census the percentage of people living in urban areas increased from 27% in 1991 to 33% in 2001 and to 43% in 2011. This is an indication that Namibia will transit from being a mostly rural society to a mostly urban one within the next two decades, with a third of the country's population projected to be living in the Erongo and Khomas regions. The huge increase in people living in informal settlements in and around towns is the main symptom of this trend.

Sustainable Development Goal 11 (*Sustainable cities and communities*) aims to make cities and human settlements inclusive, safe, resilient and sustainable by the year 2030. Ensuring that urban spaces are safe and sustainable entails providing safe and affordable housing available to all, and upgrading informal settlements. This also includes providing basic services like sanitation, electricity and water. SDG11 also aims to minimise the en-

vironmental impact of urbanisation, provide affordable public transportation and provide universal access to green and public spaces. To achieve these goals an integrated urban development plan is essential.

In the past, many have argued that housing is a by-product of economic growth. After an economy has grown, people will be able to afford housing and conditions will improve as wealth increases. However, more recently opinion has shifted to the fact that housing is an important catalyst to economic growth. In fact, some have claimed it an essential prerequisite for growth.

A lack of quality housing can have severe negative effects on people's sanitation, ability to learn and overall wellbeing and health. This in turn has consequences for economic productivity. Unavailability of low-income housing is also a restrictive factor in the mobility of skilled and unskilled labour. If housing is not affordable or available for the general working population, which include teachers, nurses and cleaners, then this will have an impact on the productivity of a place as labour cannot be attracted and retained where it is required.

It is also of vital importance that urban development integrates residential areas, offices, light manufacturing, service centres and recreational areas in order to reduce travel distances, and encourage environmentally friendly modes of transport such as walking and cycling.

Housing also plays a significant role in economic development due to its forward and backward linkages to other areas of the economy. These include the construction sector, financial intermediation sector and the retail sector. Most importantly the construction of housing creates employment, not only in the construction sector itself, but because of many off-site activities including land surveying, draughtsmen, building materials production and marketing and distribution of construction materials and

equipment. Research in other parts of the world has found that for every job created in the construction industry, two are created in other sectors.

The Namibian housing market faces a large mismatch between supply and demand, and many find it difficult to afford housing. To date the national housing backlog is estimated at over 100,000 housing units, which is growing at an annual rate of about 3,700 units.

According to the May 2016 First National Bank Housing Index, a median housing unit costs N\$800,000 by a private developer, while a small-sized property costs N\$280,000 by a public developer (Namibian Housing Enterprise). At current interest rates a household would have to earn about N\$11,500 a month to be able to afford a mortgage for a small house, and roughly N\$32,500 for a medium house. A worrying fact is that the same median home cost only N\$450,000 five years ago, representing a 78% increase.

Seeing as almost 90% of the population earn less than N\$7,000 a month, the majority of the population cannot afford mortgaged housing in urban centres. Some of the factors contributing to the increase in house prices include shortage of serviced land in the face of increasing demand, increases in the costs of building materials and the use of auctions by local authorities to distribute land. The limited availability of serviced land is mainly due to a lengthy and outdated approval process for proclamation, surveying, subdivision and registration of land.

Government introduced a number of national policies and has been allocating financial resources to facilitate access to housing among low income and ultra-low income households. The Mass Housing Development Programme - launched and implemented by the Government in 2013, but suspend-



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1 NO POVERTY

END POVERTY IN ALL ITS FORMS EVERYWHERE

Although extreme poverty rates have been cut by more than half since 1990, people around the world still do not have access to their basic needs. Poverty is more than the lack of income and resources to ensure a sustainable livelihood. Its manifestations include hunger and malnutrition, limited access to education and other basic services, social discrimination and exclusion as well as the lack of participation in decision-making. Economic growth must be inclusive to provide sustainable jobs and promote equality.

2 ZERO HUNGER

END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE

It is time to rethink how we grow, share and consume our food. If done right, agriculture, forestry and fisheries can provide nutritious food for all and generate decent incomes, while supporting people centred rural development and protecting the environment. A profound change of the global food and agriculture system is needed if we are to nourish all of the world's people.

3 GOOD HEALTH AND WELL-BEING

ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES

Significant strides have been made in increasing life expectancy and reducing some of the common killers associated with child and maternal mortality. Major progress has been made on increasing access to clean water and sanitation, reducing malaria, tuberculosis, polio and the spread of HIV/AIDS. However, many more efforts are needed to fully eradicate a wide range of diseases and address many different persistent and emerging health issues.

4 QUALITY EDUCATION

ENSURE INCLUSIVE AND QUALITY EDUCATION FOR ALL AND PROMOTE LIFELONG LEARNING

Obtaining a quality education is the foundation to improving people's lives and sustainable development. Major progress has been made towards increasing access to education at all levels and increasing enrolment rates in schools particularly for women and girls. Basic literacy skills have improved tremendously, yet bolder efforts are needed to make even greater strides for achieving universal education goals.

5 GENDER EQUALITY

ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS

Women and girls continue to suffer discrimination and violence in every part of the world. Gender equality is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous and sustainable world. Providing women and girls with equal access to education, health care, decent work, and representation in political and economic decision-making processes will fuel sustainable economies and benefit societies and humanity at large.

6 CLEAN WATER AND SANITATION

ENSURE ACCESS TO WATER AND SANITATION FOR ALL

Clean, accessible water for all is an essential part of the world we want to live in. There is sufficient fresh water on the planet to achieve this, but due to bad economics or poor infrastructure, every year millions of people, most of them children, die from diseases associated with inadequate water supply, sanitation and hygiene. Water scarcity, poor water quality and inadequate sanitation negatively impact food security, livelihood choices and educational opportunities.

7 AFFORDABLE AND CLEAN ENERGY

ENSURE ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN ENERGY FOR ALL

Energy is central to nearly every major challenge and opportunity the world faces today. Be it for jobs, security, climate change, food production or increasing incomes, access to energy for all is essential. Sustainable energy is opportunity – it transforms lives, economies and the planet. It is important to ensure universal access to modern energy services, improve efficiency and increase use of renewable resources.

8 DECENT WORK AND ECONOMIC GROWTH

PROMOTE INCLUSIVE AND SUSTAINABLE ECONOMIC GROWTH, EMPLOYMENT AND DECENT WORK FOR ALL

The creation of quality jobs will remain a major challenge for almost all economies well into the future. Sustainable economic growth will require societies to create the conditions that allow people to have quality jobs that stimulate the economy while not harming the environment. Job opportunities and decent working conditions are also required for the whole working age population.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

BUILD RESILIENT INFRASTRUCTURE, PROMOTE SUSTAINABLE INDUSTRIALISATION AND FOSTER INNOVATION

Investments in infrastructure - transport, irrigation, energy and information and communication technology - are crucial to achieving sustainable development and empowering communities in many countries. It has long been recognised that growth in productivity and incomes, and improvements in health and education outcomes require investment in infrastructure.

10 REDUCED INEQUALITIES

REDUCE INEQUALITY WITHIN AND AMONG COUNTRIES

The international community has made significant strides towards lifting people out of poverty, however inequality still persists and large disparities remain in access to health and education services and other assets. There is growing consensus that economic growth is not sufficient to reduce poverty if it is not inclusive and if it does not involve the three dimensions of sustainable development – economic, social and environmental.

11 SUSTAINABLE CITIES AND COMMUNITIES

MAKE CITIES INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE

Cities are hubs for ideas, commerce, culture, science, productivity, social development and much more. At their best, cities have enabled people to advance socially and economically. However, many challenges exist to maintaining cities in a way that continues to create jobs and prosperity while not straining land and resources. The future we want includes cities of opportunities for all, with access to basic services, energy, housing, transportation and more.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS

Sustainable consumption and production is about promoting resource and energy efficiency, sustainable infrastructure, and providing access to basic services, green and decent jobs and a better quality of life for all. Its implementation helps to achieve overall development plans, reduce future economic, environmental and social costs, strengthen economic competitiveness and reduce poverty. Goal 12 aims at "doing more and better with less."

13 CLIMATE ACTION

TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS

Climate change is now affecting every country on every continent. It is disrupting national economies and affecting lives, costing people, communities and countries dearly today and even more tomorrow. It is a global challenge that does not respect national borders. It is an issue that requires solutions that need to be coordinated at the international level and it requires international cooperation to help developing countries move toward a low-carbon economy.

14 LIFE BELOW WATER

CONSERVE AND SUSTAINABLY USE THE OCEANS, SEAS AND MARINE RESOURCES

The world's oceans drive global systems that make the Earth habitable for humankind. Our rainwater, drinking water, weather, climate, coastlines, much of our food, and even the oxygen in the air we breathe, are all ultimately provided and regulated by the sea. Throughout history, oceans and seas have been vital for trade and transportation. Careful management of this essential global resource is a key feature of a sustainable future.

15 LIFE ON LAND

SUSTAINABLY MANAGE FORESTS, COMBAT DESERTIFICATION, HALT AND REVERSE LAND DEGRADATION, HALT BIODIVERSITY LOSS

Deforestation and desertification – caused by human activities and climate change – pose major challenges to sustainable development and have affected the lives and livelihoods of millions of people in the fight against poverty. Efforts are being made to manage forests and combat desertification.

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

PROMOTE JUST, PEACEFUL AND INCLUSIVE SOCIETIES

Peace, stability, human rights and effective governance based on the rule of law are important elements for sustainable development. We are living in a world that is increasingly divided. Some regions enjoy sustained levels of peace, security and prosperity while others fall into seemingly endless cycles of conflict and violence. This is by no means inevitable and must be addressed.

17 PARTNERSHIPS FOR THE GOALS

STRENGTHEN THE MEANS OF IMPLEMENTATION AND REVITALIZE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT

A successful sustainable development agenda requires partnerships between governments, the private sector and civil society. These inclusive partnerships built upon principles and values, a shared vision, and shared goals that place people and the planet at the centre, are needed at the global, regional, national and local level.



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ed in 2015 - aimed at increasing investment in the affordable housing sector to increase the production of the housing stock and significantly increase the supply towards meeting the demand for housing in the country. Furthermore, the Mass Land Servicing Programme aims to increase the availability of serviced land by 200,000 plots. Additionally, the government has resolved to amend the land servicing process in accordance with an agreement reached with the Affirmative Repositioning Movement to fast track land delivery.

The issues faced in the Namibian housing market are well known and have been acknowledged by government. However, looking back at the track record for institutions like the National Housing Enterprise, which has only delivered 450 houses per year since 2003, we can only hope that the new measures are more successful.

When considering the issue of housing in Namibia, it should be noted that both the public and private sector have a role to play in the effective delivery of affordable mass housing. The ideal situation would be if housing construction and finance were primarily borne by the private sector, with the public sector subsidising and supplementing with finance and planning where needed.

During the course of the last few years a few alternative housing solutions have been suggested. The Namibian MOME modular home has been a very interesting proposal. These homes are built almost entirely from fibreglass. They offer a flexible, prefabri-

cated two-bedroom home, with integrated water and electricity solutions.

The material is fireproof and has a tensile strength comparable to mild steel, and acts as insulation from the Namibian heat. It is also lightweight and can easily be transported. The process uses no water, making it an ideal solution in Namibia's current water shortage and giving it a distinct advantage over brick and mortar. The construction process is also quite fast, taking on average five days to produce a unit. One home is expected to cost between N\$74,000 and N\$150,000.

One can also visit the Habitat Research and Development Centre (HRDC), which has aimed to be the centre of research for alternative building materials focused on sustainable low-cost housing in Namibia. The centre is a monument to what can be achieved using relatively unskilled labour and low cost materials including earth bricks, compressed earth, sandbags, soil-filled tyres and cob, recycled steel beams and corrugated metal.

Urban areas are often particularly vulnerable to the impacts of climate change due to their geographic location and their structural density. The use of renewable energies and energy efficient construction methods reduces not only emissions and prevents serious consequences of climate change, but also cuts the operational costs of houses.

Institutions like the Shack Dwellers Federation of Namibia (SDFN) have played a pivotal role in alleviating housing shortages. The SDFN is a network of community-led savings groups, which is subsidised by gov-

ernment and supported by private sector companies.

The SDFN comprises of 620 housing groups and provides members with loans ranging from N\$8,000 to N\$26,000. The loans are repayable within a period of 11 years at an interest rate of 0.5% per month, and require a 5% deposit. After the land is purchased by the SDFN, the individual members are collectively involved in clearing the land, as well as undertaking other manual labour during the construction phase. This helps to reduce construction costs to as little as N\$705 per square metre. So far 3,488 houses have been completed by the members themselves.

Furthermore, some private companies have taken it upon themselves to provide lodgings to their employees. A notable example, among others, has been ship repair company Elgin Brown & Hamer (EBH) Namibia, which purchased 10,000 hectares of undeveloped land for the sole purpose of building 220 houses for its employees. First time home-owners employed by EBH Namibia, who have previously not had access to affordable housing, will be given first option to purchase the houses directly from the developer, via bank-approved loans.

In summary, housing is an extremely important goal for sustainable development, but the way in which houses are constructed influences the achievement of other SDGs as well. Despite various public and private sector initiatives, the situation still needs serious attention if we are to reach our Vision 2030 goals of providing affordable housing to all, and to do so in a carefully planned and sustainable manner.

THE CONSTRUCTION SECTOR'S POTENTIAL CONTRIBUTION TO ACHIEVING SOME OF THE SDGs

The construction sector has been one of the drivers of economic growth over the past few years. The sector grew by 35% annually on average between 2013 and 2015, resulting in 19% more jobs in the sector in 2014 compared to 2013. And construction works and buildings accounted for 58.5% of all Gross Fixed Capital Formation (Investment) assets in 2015. Due to its linkages with other sectors, such as manufacturing and transport, the sector's strong performance had further positive economic and labour market impacts.

A strong economic performance, however, often translates into environmental challenges. Construction activities in particular impact directly on the environment in various ways,

ranging from the construction site and the loss of flora and fauna, to the building materials that are being used, to the way in which buildings are constructed and the impact on future operational costs and maintenance costs.

Globally, sand as a major input into construction activities is becoming a scarce commodity resulting in illegal sand-mining, even in Namibia, and seabed mining. Illegal mining activities leave areas unrehabilitated that are then lost for other activities such as farming. Some countries, such as Singapore, are already importing sand, since domestic resources are no longer sufficient in meeting the demand.

The potential environmental impact of the construction of office blocks and houses for

residential purposes has led to the establishment of the Green Building movement and the Namibian Green Building Council under the umbrella of the World Green Building Council. Green building or green construction refers to both a structure and the using of processes that are environmentally responsible and resource-efficient throughout a building's life-cycle: from siting to design, construction, operation, maintenance, renovation, and demolition.

The use of local building material such as stones, wood, grass/reed, clay or sand, rather than imported material reduces Greenhouse Gas (GHG) emissions since it cuts transport distances. The Habitat Research and Development Centre (HRDC) in Katutura showcases various forms of environmentally friendly building materials sourced locally. Locally available material is usually also less

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Alternative building materials at Habitat Research & Development Centre / Katutura

expensive and hence makes housing more affordable to the population. If local material is used responsibly it will contribute to achieving Sustainable Development Goals 13 (*Climate action*) and 15 (*Life on land*), since it reduces GHG emissions and protects the soil from degradation. The construction of flats rather than stand-alone houses reduces the use of land and hence land degradation and leaves space for a green environment and for recreational purposes.

Furthermore, the design of buildings will impact on the future ecological footprint. In Namibia for instance, facing large window fronts to the north will harvest the sun during winter, while smaller windows facing the south and west shaded by trees will reduce the heat in

summer. In addition, double-pane windows will reduce the loss of heat during winter and prevent outside heat from entering during summer. Furthermore, using white roof paint reduces heat absorption. All of these considerations when constructing buildings will reduce the demand for energy to either cool or heat the building.

Government's cabinet directive in 2007 to use solar water heaters (SWH) in new government buildings and to replace electric geysers with SWH when they have reached their life span, has set the direction. However, this directive should in practice be applied to all new buildings, since Namibia has the best solar radiation in the world. Although such measures will increase the upfront costs of new buildings, they will reduce the operational costs over the life span of the building and result in substantial savings. In addition, every new building could be equipped with solar panels, in order to harness solar energy and reduce the demand for conventional electricity during daylight hours, and hence the GHG emissions from coal- or diesel-fired power plants. These measures will directly con-

tribute to achieving SDG 7 (*Affordable and clean energy*) and specifically target 7.2 (Increase substantially the share of renewable energy) and 7.3 (Double the rate of improvement in energy efficiency) and consequently to SDG 13.

Furthermore, SDG 12 (*Responsible consumption and production*) commits everyone to the efficient use of natural resources (target 12.2) and to the reduction of waste among others through recycling and reuse (target 12.5). The construction industry can play its role by recycling and or reusing building material when buildings or parts of buildings are being demolished.

The Green Building Council has developed rating criteria for new buildings that are already applied to some buildings in Namibia. These criteria include energy efficiency, water recycling, elimination of volatile compounds and use of recycled material. The new FNB building has received a 4-star rating, the only one in Namibia so far. Other buildings are in the process of being certified. This trend indicates that architects, quantity surveyors, planners, and building owners, to mention a few, are becoming more aware and more conscious about green buildings. It also makes perfect business sense since it reduces the operational and maintenance costs of buildings and creates a more favourable working environment that reduces the sick building syndrome and hence sick leave.

However, more needs to be done in order to create awareness and to establish construction and building standards. The Ministry of Works and Transport, in particular, has been mandated by the Namibian government to address the formulation and implementation of technical regulations in building design, building materials, construction, inspection and maintenance of infrastructure. It is also responsible for Professional Coun-

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Alternative building materials at Habitat Research & Development Centre / Katutura

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cils in the architectural, quantity surveying, and engineering disciplines, representing the interests of the Technical Committees as appointed by the Namibian National Standards Institute (NSI). In particular,

NSI's Technical Committee 6 receives support from the Ministry and the Green Building Council of Namibia in the standardization of sustainable products and processes. Since government went ahead in 2007 with the SWH directive, it could take the next step by applying Green Building stan-

dards for all new public buildings, including buildings for State-Owned Enterprises. This would underline government's determination to achieve the SDGs by 2030, would result in a shift towards a greener construction sector and would set the path for the private sector and private households to follow.

TRANSPORT AND LOGISTICS' ROLE IN ACHIEVING SUSTAINABLE DEVELOPMENT



Transport and logistics is essential for trade, industrialization, social-economic development and regional integration. Over the past 20 years the Government of Namibia has invested in transport infrastructure development (roads, rail, maritime and ports, and aviation) in order to both meet the national demand, as well as position Namibia as the gateway to the Southern Africa Development Community (SADC). Accordingly, a Logistic Master Plan was unveiled in 2015 to guide Namibia into becoming a Logistics Nation by 2025. In terms of importance, the transport and logistics sector employs 25,600 persons (2014), which is about 3.7% of the country's total employed persons, and contributes 2.7% to Gross Domestic Product (2015).

The Role of Transport and Logistics

The *Fourth National Development Plan* (NDP4) and the *Harambee Prosperity Plan* (HPP) identify transport and logistics as a strategic sector in achieving Namibia's social-economic transformation. The successor, NDP5, is

likely to retain transport and logistics as a priority sector. Given its facilitation role in the economy, transport and logistics are strongly linked to achieving both Vision 2030 and the Sustainable Development Goals (SDGs) of the global 2030 Agenda for Sustainable Development. The transport and logistics sector can play an important role in achieving in particular the following SDGs.

SDG 3 (*Good health and well-being*) refers to ensuring healthy lives and promoting well-being of all at all ages. SDG 3 target 6 aims at halving the number of deaths and injuries from road traffic accidents. Namibia has one of the highest rates of fatal road traffic accidents in the world. The rate stood at 23.9 in 2013, but increased to 24.6 in 2015 based on accident statistics from the Motor Vehicle Accident Fund. In comparison, Germany had a rate of 4.3 in 2013. Trucks were involved in 6% of all road accidents in 2012, but in 7% in 2015 according to statistics from the Motor Vehicle Accident Fund. Trucks are

also increasingly involved in accidents than other vehicles. 1.8% of all registered heavy load vehicles were involved in accidents in 2014 compared to 1.2% of other registered vehicles. The fact that the share of trucks involved in fatal accidents is higher than the share of trucks involved in total accidents indicates that accidents involving trucks are often more severe than other accidents.

Furthermore, target 3.9 aims at reducing the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution. Namibia's mining sector is heavily reliant on the transportation of chemicals to separate the minerals, such as uranium or gold, from their ores. Most of these chemicals are transported by road because of the dilapidated state of the railway infrastructure, including rolling stock. The railway accident near Walvis Bay end of 2015 involving hazardous chemicals illustrates the risks in-

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herent in the transportation of these goods. Therefore, the transport sector plays a crucial role in achieving various targets of SDG 3. The transport industry has taken already the first step and intends to establish a self-appraisal system. The system will certify members that adhere to industry standards such as driving and resting times, speed limits and maximum loads. Government has also pledged to ensure the safety of all road users as well as preventing traffic deaths and injuries in the Moscow Declaration and the UN Decade of Action for Road Safety 2011-2020. In addition, the ministry of Works and Transport intends to finalise the development of a Plan of Action for the implementation of regulations regarding hazardous goods for the road and railway sector by the end of 2016. The transport sector is globally the third largest contributor to Greenhouse Gas (GHG) emissions behind the energy sec-



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tor and agriculture and forestry. The sector contributed about 14% to GHG emissions in 2010, to large extent through the road transport sector, and in particular the passenger transport sub-sector. Due to long transport distances and a lower degree of industrialisation, it is expected that the share in Namibia exceeds the global average. Therefore, the transport and logistics sector plays a role in achieving SDG 13 (*Climate action*), namely combating the impact of climate change. The use of fuel-efficient trucks and cleaner fuels and the switch to electric forklift trucks at warehouses and electric delivery vans in towns that are recharged using solar energy will contribute to achieving SDG 13. However, the efficiency of the transport system at large needs to be improved. It is estimated that about 45% of all roundtrips by trucks involve one empty trip. The establishment of load boards as well as sharing more information regarding available cargo and load capacity can increase the efficiency of the transport sector and reduce its impact on the environment.

Transport and logistics play a crucial role in the fight to *end hunger, achieve food security and improved nutrition, and promote sustainable agriculture* (SDG 2). Official estimates for 2016 indicate a total of 595,839 people are food deficit in Namibia. It is also estimated that 48% of children aged 6-59 months are anaemic while 23.8% and 13.4% of Namibian children are estimated to be stunted and underweight respectively. Given this context, eliminating all transport barriers and bottlenecks will have direct effect on reducing hunger and ensuring access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year around by 2030 (Target 2.1). Equally, an integrated and efficient food logistics and supply chain management system is critical to "double the agricultural productivity and incomes of small-scale food producers, in particular women..." (Target 2.3), as well as to "ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality" (Target 2.4).

Increasing access to markets is one of the most compelling ways to promote sustainable agriculture, which would in turn open up significant value in the food supply chain for improved nutrition and food security. Food logistics management is relevant to the HPP agenda of "no one should feel left behind"

and to the Namibia Agriculture Policy that provides a clear framework for all stakeholders to devise interventions that contribute to the sustainable development and growth of the agriculture sector.

Equally important is SDG 9 (*Industry, innovation and infrastructure*) that is in line with Namibia's Vision 2030 of becoming an industrialised and prosperous nation. For example, the success of Namibia's industrialisation strategy will require, in tandem with Target 9.1, that we develop quality, reliable, sustainable and resilient transport and logistics infrastructure, including regional and trans-boundary infrastructure (e.g., one-stop border posts, intermodal facilities, an efficient railway system, etc.) to support economic development and human well-being, with a focus on affordable and equitable access for all. Efficient transport and smart logistics systems would also facilitate the meeting of Target 9.3, i.e., to integrate small-scale industry into global value chains and markets. Similarly, the ability of Namibia to become the preferred gateway and Logistics Hub for the SADC region as envisioned in the Logistics Hub Master Plan is hinged on developing a sustainable and resilient transport and logistics infrastructure (Target 9.1) that can in turn support and increase Namibia's capacity to enhance scientific research, upgrade the technological capabilities of industrial sectors by 2030.

With respect to SDG 12 (*Responsible consumption and production*), the role of well-functioning logistics and transport networks in facilitating sustainable management and efficient use of natural resources (Target 12.2), as well as reducing food losses along production and supply chains, including post-harvest losses (Target 12.3) cannot be overemphasised. Africa's poor rural (transport) infrastructure is one of the biggest impediments to increased productivity, because it makes investment in new agricultural technologies very risky for farmers and other agricultural entrepreneurs. Storage and transport costs are high, as are postharvest losses.

In conclusion, transport and logistics directly and indirectly influence national and regional growth, poverty reduction and improvements in health care, education, agricultural production and the wellbeing of vulnerable groups. Transport infrastructure and services facilitate the participation of rural and urban communities in economic opportunities and provide access to essential service such as education and health. Like most other sectors, when designed to be inclusive, transport and logistics is a strong driver of economic growth and poverty reduction.

THE NAMIBIAN BALANCE OF PAYMENTS, FOREIGN EXCHANGE RESERVES AND THE CURRENCY PEG.

As a small open economy, Namibia's balance of payments is arguably the single most important indicator of the health of the local economy. This is particularly true of Namibia, where a currency peg and twin deficits (current account and fiscal) present a form of "impossible trinity" if continued in perpetuity. In this vein, should a twin deficit situation exist for an extended period of time, an economy is likely to be forced to undergo a structural change (such as a currency peg decoupling), which can undermine the country's ability to generate inclusive and sustainable economic growth (*Sustainable Development Goal 8 - Decent work and economic growth*), and as a result, sustain social development.

A country's balance of payments is the net of all imported and exported goods, services, financial capital and financial transfers. Thus, it represents a summation of demand for the country's currency, and the country's demand for foreign currencies. In the balance of payments, sources of funds for a nation, such as exports or the receipts of loans and investments, are recorded as positive or surplus items and uses of funds, such as for imports, are recorded as negative or deficit items.

The balance of payments is made up of two accounts, namely the current account, and the capital and financial account. The current account consists of the balance of trade

and cash transfers - payments or receipts for goods and services - while the capital account illustrates the net change in ownership of national assets.

Simply put, however, the balance of payments reflects goods and capital changing hands into and out of a country.

The Namibian balance of payments is determined by a handful of key factors as follows: On the side of the current account, the balance is largely determined by merchandise trade, with trade in services playing a smaller role, while on the capital account side, the overall balance is determined by portfolio flows into and out of the country, and foreign direct investment inflows, primarily.

At present, Namibia faces challenging times with regards to the balance of payments. There are a few reasons for this. From a merchandise trade perspective, Namibia historically relied on primary sector outputs for export earnings, particularly diamonds, uranium, gold, meat, fish and grapes. Through the commodity super cycle of the early 2000s, export prices were broadly favourable, especially for commodities. More recently, however, commodity prices have taken a dive, which has resulted in lower export earnings for Namibia, at least in hard currency terms. This has been partially offset by a weakening Namibia Dollar vis-à-vis major currencies, as well as some growth in sales volumes, particularly with regards to gold. Added to this risk is the ever-present possibility of drought, and the resultant negative impact on agricultural exports, particularly beef exports.

At the same time, Namibia's economy has grown admirably over the past half-decade. As a result of this, household incomes have expanded dramatically, and with the major growth seen, particularly in the middle class, has come major growth in demand for relative luxuries. As Namibia does not produce very many luxury products, these goods must be sourced externally. As money flows out of the country to purchase these goods, it reflects as a negative on Namibia's current account. At the same time, Namibia has been through a sizable construction boom since 2011, which has added fuel to this fire. Some of this construction has been externally funded, particularly in the mining sector, while the rest has been funded do-

mestically. Once again, little construction material is domestically produced, and as such these products have been imported.

As a result, Namibia has experienced ever larger merchandise trade deficits over the past five years, as illustrated below.

The merchandise trade deficit has historically been funded from three major sources: firstly, within the current account, via net inflows from tourism activities as well as inflows from the Southern African Customs Union (SACU); secondly from capital and financial account surpluses, primarily driven by inward foreign investment; and of late, by foreign public debt issuance.

However, in the recent past, SACU receipts have started to come under increasing pressure, as regional and global trade, the taxes from which form the bread and butter of the SACU revenue pool, has declined, taking with it SACU receipts. 2016/17 has been particularly harsh in this regard, as Namibia has been required to refund an overpayment made to the country in prior years, and as such the SACU inflow has been particularly weak. However, this situation is not likely to change dramatically in the immediate future, and SACU inflows are likely to remain under pressure. Thankfully, a weak Namibia Dollar, thanks to the goings-on in South Africa, has helped to make it relatively cheap for foreigners to visit Namibia. As such, the local tourism sector is booming, bringing with it foreign earnings.

On the other hand, capital flows have not been favourable of late, driven, particularly, by commodity price weakness. While historically much of our foreign investment came in the form of direct investment into the mining sector, this has now all but stopped, as the commodity price cycle turns against the country, like so many countries on the continent. In addition to this, policy uncertainty, particularly with regards to the New Equitable Economic Empowerment Framework/Bill, and the new Investment Promotion Act have also put local and foreign investors on the back-foot, with anecdotal evidence suggesting that these may be reducing foreign and domestic investment in the local economy. This is, of course, not to say that these policies are without merit, but rather to say that the uncertainty that currently surrounds them and their implementation, presents a challenge for foreign and local investors.

What all this means is that the current year, and in all likelihood, the next few years, are likely to prove challenging to the local bal-



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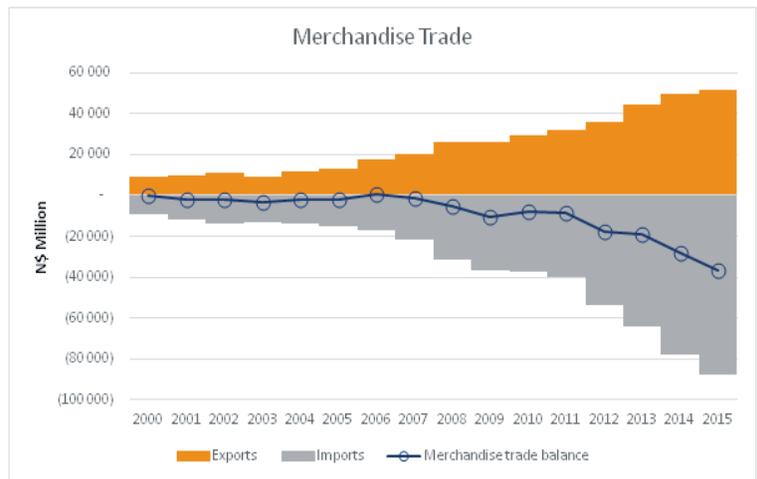
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ance of payments, and all things being equal, deficits can be expected.

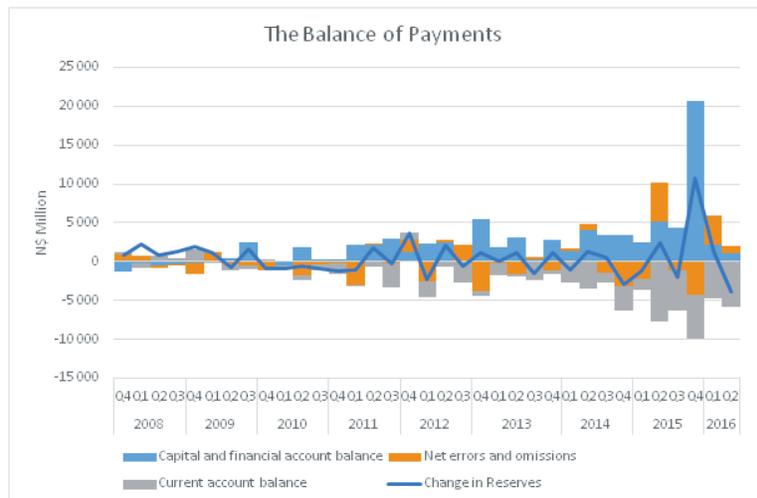
The "last resort", if you will, for the funding of the deficit is the stock of international reserves held by the central bank – the result of the accumulation of historic surpluses. In the event of on-going deficits, this stock of foreign reserves will be called upon to "settle the bill", and a reserve drawdown will thus be incurred. While a reserve buffer is important to ensure that Namibia honours its foreign commitments, it is equally important to protect the currency peg with the Rand. As the Namibia Dollar can't depreciate in the event of large domestic demand for foreign currency over the Namibia Dollar, the Common Monetary Area Agreement stipulates that Namibia must maintain sufficient reserves to cover Namibian currency in circulation, thus enabling the country to honour all external obligations to the South African Reserve Bank, the ultimate guarantor of the one-to-one currency peg.

At present, Namibia has approximately N\$20 billion worth of foreign reserves, more than four times the amount required to protect the currency peg. However, not all reserves are created equal. Approximately half of Namibia's reserves have direct liabilities associated with them, making these funds accessible, but their use inadvisable. Nevertheless, for now, and despite the expected deficits, Namibia is still very capable of defending the currency peg with the Rand.

The good news is that Namibia remains a net-creditor to the rest of the world from a stock perspective, particularly due to large contractual savings pools that sit outside of the country. This situation creates a buffer for Namibia's balance of payments, as if the country is in a desperate situation, these



Source: Bank of Namibia



Source: Bank of Namibia

funds can be recalled to avoid a balance of payments crisis. However, these funds are finite in nature, and if not carefully man-

aged once returned to the country, it will take little time for the outflows to once again commence.

BUSH ENCROACHMENT TURNING A PROBLEM INTO AN INDUSTRY



Bush encroachment in Namibia is defined as the densification and rapid spread of native bush and shrub species, resulting in an imbalance of biodiversity. In addition to native species, invasion of exotic tree or shrub species such as *Prosopis* also pose a threat.

This bush encroachment phenomenon is said to be caused by a number of inter-linked and potentially compounding factors, including overgrazing caused by historically high stocking rates; preference of grazing livestock over browsers (such as goats); increased atmospheric CO₂ levels, which favour growth of bush over grasses; suppression of regular high-intensity fires;

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prolonged drought periods followed by high rainfall years; fewer periods of frost; and perhaps other factors that have not yet been fully understood. However, one thing is certain: if we do not actively control bush encroachment in Namibia, it will soon become an insurmountable economic, social and environmental problem. The latest estimates indicate that bush encroachment affects up to 45 million hectares of land in Namibia. To give some perspective, this encroached area is equivalent to the entire surface areas of



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Germany, Belgium and Switzerland combined. Furthermore, it has been estimated that bush encroachment in Namibia is increasing each year by approximately 3.2%, regardless of any ongoing efforts to extract the bush. This means that bush encroachment is growing faster than our national population. Simply stemming this spread of bush encroachment each year would require de-bushing and biomass harvesting activities across 1.4 million hectares per annum, while substantially reducing bush encroachment over Namibia's rangelands is a far greater challenge. Currently, our national concerted de-bushing and harvesting efforts are optimistically estimated at a mere 200,000 hectares per year (0.5% of the total national area potentially available for de-bushing).

However, with Vision 2030 fast approaching, it should be emphasized that the utilisation of the resultant biomass from bush encroachment will have significant benefits in line with a number of Sustainable Development Goals (SDG) pivotal to achieving Vision 2030. These SDGs include SDG 2 (*Zero hunger*), SDG 7 (*Affordable and clean energy*), SDG 8 (*Decent work and economic growth*) SDG 9 (*Industry, Innovation and Infrastructure*) and SDG 15 (*Life on land*).

Impact of Bush Encroachment

Bush encroachment is a silent killer of our agricultural and associated sectors, substantially suppressing our economy. It is slowly suffocating our productive land, sucking our soils dry and driving out our ecological diversity. If business as usual continues, all of Namibia's most productive lands will be blanketed in bush, hindering our very important socio-economic contributors, like the beef and small stock production industries, our tourism industry and our game farming and hunting industries, to name but a few.

The current level of bush encroachment is causing substantial agricultural productivity losses through land degradation and the subsequent drastic reduction in stocking rates. This productivity loss alone is estimated to be costing the local economy approximately N\$2 billion per year. These losses will undoubtedly continue to increase, in line with the spread and worsening of the bush encroachment problem. It is now commonplace for once productive land to be so densely bush-encroached that the movement of animals, livestock and wildlife alike, is impaired.

Ground water recharge is also significantly affected by bush encroachment. A single 2.5 metre tall *Senegalia mellifera* (Black Thorn or Swarthaak) bush is estimated to draw up over 60 litres from the ground into the air each day through evapotranspiration. And given the fact that an average bush encroached hectare of land can host over 2,000 bushes of various height classes, loss of soil moisture into the atmosphere is significant. This, in turn, also reduces the available soil moisture for grass growth and for the replenishment of the groundwater systems. Over large areas of bush encroached land, billions of cubic metres of water are thus lost each year due to the bush encroachment problem. The recent drought begs the question: can Namibia spare such a loss of water?

Numerous other sectors are negatively affected by bush encroachment. Consumptive tourism, such as hunting, and non-consumptive tourism, such as wildlife viewing, are both impacted, as the density of wildlife in bush encroached areas is greatly reduced. This affects the level of tourist satisfaction, which may in turn have negative impacts on the future of our tourism industry, an industry intrinsically linked to Namibia's wildlife and scenic beauty. Game farming is equally affected by bush encroachment through reduced stocking rates, and thus reduced offtake capacity.

The big bush opportunity

Arbicides (chemical substances that kill woody plants) have been widely used in Namibia for decades to combat bush encroachment, indicating that the problem has been largely acknowledged. Nevertheless, the idea of utilising the woody biomass is a relatively new concept and bears tremendous socio-economic and ecological opportunity. The charcoal industry is the most developed biomass sector in the country, but it has not always focussed on the use of encroacher bush as its primary feedstock. However, more recently, charcoal production is being used as a means of bush control and it has been successful in that it provides cost recovery for the de-bushing efforts, which the use of herbicides simply cannot. Nonetheless, not all of Namibia's biomass can be converted into charcoal, and therefore new ways of commercialising our biomass resource should be pursued. The enormous potential value that could be unleashed from Namibia's encroacher

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bush biomass is a game changer, including but not limited to the potential for additional taxation revenues of an estimated N\$750 million annually. This commercialisation of the biomass resource will assist in the reversal of land degradation, as well as halting biodiversity losses within Namibia's rangelands, in line with SDG 15. Additional benefits of biomass commercialisation would be to enhance Namibia's food security through the improvement of stocking rates and to promote more sustainable agriculture, in mitigating the further spread of bush encroachment, as per SDG 2.

The lowest hanging fruit is in energy, be it thermal or power. Encroacher bush as a feedstock for thermal energy generation is already gaining traction in Namibia. The Ohorongo Cement plant near Otavi has proven that its thermal energy requirements can be covered almost entirely on encroacher bush wood chips, opening up a market of approximately 80,000 tonnes of wood chips per annum. However, while this market is worth an approximate N\$65 million per year in wood chips, it is still going largely unmet. Namibia Breweries have also recently switched over to a biomass-fuelled boiler, which converts roughly 7,500 tonnes of encroacher bush wood chips per annum into thermal energy for operations at the Windhoek plant. Both of the above markets are substituting fossil fuels for wood chips, shifting from imported, unsustainable fuels to locally sourced, renewable ones, and addressing the encroachment problem in the process. Other benefits from fossil fuel substitution include fewer harmful emissions, foreign exchange savings and additional job creation. However, the above capacities show only a small fraction of the potential that Namibia's encroacher bush biomass holds.

Conversion of our biomass resource into electrical power is the next step and is one that is currently being investigated, both publicly and privately. It has already been determined that, in principle, the establishment of a biomass fuelled power plant of up to 20 Megawatt (MW) scale would be both technically feasible and economically viable. Not only would such a power plant be able to generate renewable energy, but it would also be able to provide base-load power, something that wind and solar Photo Voltaic cannot. A single 20 MW biomass power plant would require approximately 180,000 tonnes of wood chips per

year, equitable to roughly 18,000 hectares' worth of bush encroached land. And while considered a fairly large undertaking in itself, Namibia would require another 70 of these power plants just in order to meet and mitigate the annual increase in bush encroachment. Theoretically, Namibia's total current encroacher bush biomass resource would be able to provide us with 1,400 MW for the next 30 years. This ignores the fact that the encroacher bush would typically regrow at an average rate of about 1.8 % per year after initial harvesting. It is in this light that Namibia's biomass resource can help ensure access to affordable, reliable, sustainable and modern energy for all, as per SDG 7.

The potential biomass industry would not only help to secure the existing 200,000 jobs within the agricultural sector through the restoration of Namibia's rangelands, but it would also directly act to create its own sector-specific jobs. These jobs would be most similar to the mining sector, whereby the majority of jobs would be decentralised, skills would be paramount and would, on average, offer far better income than jobs in the agricultural sector. Furthermore, primary harvesting and production of biomass would lead to new value chains being developed, such as thermal and chemical processing, biofuels, construction materials, services and research and development, yielding even more socio-economic benefits. And while it is difficult to project exactly how many new jobs would be created if the biomass industry were to receive its due

attention and investment, utilising our vast wood-based biomass resource essentially equates it to an extractive industry. Thus, it would be safe to say that the biomass industry could align itself to other primary extractive, or resource-based industries, such as fishing or mining in the next 10-20 years. This potential for large-scale job creation and industrial development will also contribute towards SDG 8 and SDG 9. The sooner we harness this opportunity lying at our doorsteps, the better we can achieve our national goals, such as the *Harambee Prosperity Plan* and *Vision 2030*.

Call to arms

In light of the above challenges and opportunities, the Namibia Biomass Industry Group (N-BiG) was formed through cooperation between the private sector founding members and the MAWF - GIZ Support to De-bushing Project, running from 2013 to 2017. N-BiG is positioning itself in becoming the leading biomass information hub and industry association, build on public-private and academic sector cooperation in Namibia. It aims to support and facilitate growth within this young biomass industry to facilitate the restoration of Namibia's rangelands, recover the costs of de-bushing, and commercialise and exploit the largely untapped encroacher bush biomass resource.

N-BiG membership provides access to relevant information and services, and is open to all.



Debushing in central Namibia

TROPHY HUNTING IN NAMIBIA:

PROVIDING SUSTAINABLE LIVELIHOODS FOR COMMUNITIES,
ENCOURAGING THE PROTECTION OF WILDLIFE POPULATIONS,
AND MAINTAINING NATURAL ECOSYSTEMS



Trophy hunting is always a polarising topic but opposition has been mounting over recent years. Cecil the Lion, the media (in particular the use of social media by animal rights activists), and celebrities have stirred public opinion, much of it negative. This has arguably contributed to the introduction of airline bans on transporting trophies, the hunting ban in neighbouring Botswana, and the EU debate on banning imports of trophies.

However, when trophy hunting is well-regulated and properly managed, it can deliver the triple benefits of providing sustainable livelihood opportunities for communities, encouraging the protection of wildlife populations, and maintaining

natural ecosystems, thereby contributing to a number of Sustainable Development Goals (SDGs). This was explicitly recognised at the recent Conference of the Parties, where the Trophy hunting is always a polarising topic but opposition has been mounting over recent years. Cecil the Lion, the media (in particular the use of social media by animal rights activists), and celebrities have stirred public opinion, much of it negative. This has arguably contributed to the introduction of airline bans on transporting trophies, the hunting ban in neighbouring Botswana, and the EU debate on banning imports of trophies.

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Trophy hunting is a niche part of the wider hunting management system, which also includes shoot and sell and own use. While trophy hunting is a high value activity in it-

self, there are also wider values associated with hunting in general, for recreational, management, commercial, environmental, and livelihood purposes.

Namibia is a case in point.

Encouraging the protection of wildlife populations

SDG 15 (*Life on land*) includes a target to “ensure the conservation, restoration and sustainable use of... ecosystems and their services”. This is mirrored by Article 95(l) of Namibia’s constitution which requires “the maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future...”

In Namibia, hunting is well regulated and species-specific quotas are set annually, ensuring the sustainable use of wildlife. As wildlife populations increase, the sustainable number of animals that can be hunted also increases - this provides an economic incentive to protect and grow wildlife populations. Furthermore, as income and benefits from hunting are channelled back into conservation, a strong and sustainable hunting industry is also beneficial for the protection and restoration of biodiversity and habitat.

Private and communal rights over wildlife

In the 1970s, legislative changes gave freehold farmers economic rights over wildlife, allowing them to profit from hunting, as



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well as wildlife tourism, and sales of live game and game meat. In the 1990s, these rights were extended to rural communities under the Community Based Natural Resource Management (CBNRM) programme.

When farmers and communities have rights over the wildlife on their land, they can derive value from the wildlife, and are therefore incentivised to protect it. If they can earn income from wildlife, e.g. from trophy hunting, farmers and communities tend to be more tolerant of the lions that prey on their livestock and the elephants that eat their crops. Wildlife populations, including elephant, lion, and black rhino, have recovered significantly over recent decades, on both private and communal land, and this is largely attributed to these policy changes. Namibia is now internationally renowned for its wildlife. Consequently, tourism, including hunting tourism, has boomed over the long run.

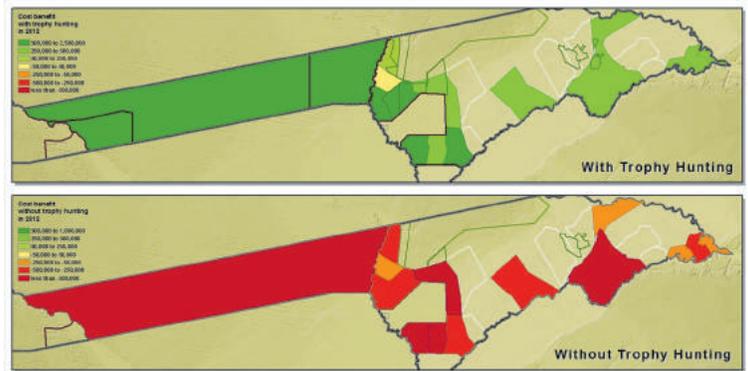
Trophy hunting can also discourage illegal killing and poaching in the same way. If a community is relying on a healthy wildlife population to earn income from trophy hunting, its members are less likely to poach and there is little tolerance for outsiders poaching on their land. Trophy hunting can thus contribute to the SDG 15 targets to “combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities” and “address both demand and supply of illegal wildlife products”.

Funding for conservation

Hunting generates important financing and benefits for conservation activities in Namibia. The Ministry of Environment and Tourism sets quotas and issues permits for trophy hunting. Old males are usually targeted and when hunting flagship or protected species, such as black rhino, elephant, and lion, the individual animal is selected. These are often “problem” animals that have been aggressive towards people or destructive of property, or pose a risk to other wildlife.

The revenue from the sale of trophy hunting concessions goes to the Game Products Trust Fund (GPTF), along with revenue from the sustainable use and sale of other wildlife products, such as head levies on the live export of animals and their products and live auction of game/wildlife. The GPTF then invests the funds exclusively in wildlife conservation, community conservation, and rural development programmes

Figure 1: Cost benefit analysis of Zambezi conservancies with and without trophy hunting



Source: NACSO Natural Resources Working Group

aimed at harmonising the co-existence of people with wildlife. Between 2012/13 and 2015/16, trophy hunting alone raised more than N\$39 million for the GPTF – 68% of the total N\$57 million raised. This does not include the revenue that goes to the hunting operators and employees, land owners, etc. Over the same period, the GPTF allocated N\$70 million to conservation projects. The amount includes unused funds raised in previous years. These projects included anti-poaching and wildlife protection, mitigating human-wildlife conflict, and water supply infrastructure.

This revenue from trophy hunting is particularly important at a time when total funding for biodiversity conservation (both public and private) is falling. Namibia is now classified as an upper middle income country, which has resulted in a drop off in donations and official development assistance. Yet high inequality, public funding constraints, and competing priorities are eroding the public funding that is directed towards wildlife and biodiversity. Real biodiversity expenditure by government, donors, and the private sector is projected to decline by a cumulative 24% between 2014/15 and 2020/21.

Providing sustainable livelihoods for communities

Rural communities primarily benefit from trophy hunting via:

- the jobs created, contributing to SDG 8 (*Decent work and economic growth*),
- the income generated, contributing to SDG 1 (*End poverty*), and
- the meat produced, contributing to SDG 2 (*Zero hunger*).

Community members are employed by hunting operations (e.g. as trackers), hunting lodges, or as game guards, to protect wildlife from illegal hunting and poaching. This increases household income and encourages people to remain in rural areas,

rather than shifting to urban areas.

The Namibian Association of CBNRM Support Organisations estimated that trophy hunting and meat from trophies generated N\$31.5 million for communal conservancies in 2014 – 36% of the total cash income and in-kind benefits for communal conservancies. For some conservancies, such as Nyae Nyae and N=Ja Jaqna, trophy hunting generates the majority of their income. Furthermore, trophy hunting can provide income resilience for both private and communal farmers, through diversification from cattle and small stock farming.

Finally, although the trophy hunter may take the head, horns, or other souvenirs from the animal, the meat is usually distributed to the community, providing an important source of protein and improving food security.

Protecting and maintaining natural ecosystems

More than 40% of Namibia's land area is now dedicated to conservation, sustainable resource management, and biodiversity objectives. This includes communal and freehold conservancies, state protected areas, tourism concessions, and community forests.

The area dedicated to communal and freehold conservancies exceeds 200,000km² – more than half of the total area dedicated to conservation. As mentioned above, these conservancies rely on funding from activities such as trophy hunting to continue their programmes of natural resource management, habitat conservation, and biodiversity protection, thereby contributing to SDG 15. Furthermore, activities such as trophy hunting offer an alternative to agriculture. Agriculture often involves land clearing or results in damaging rangeland management practices, which can be harmful to the ecosystems and landscapes.

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Trophy hunting, on the other hand, can be conducted in the natural ecosystem with little to no degradation.

Without trophy hunting, many of these conservancies, such as those in the Zambezi region, would not be financially viable (see Figure 1). This could see a shift back towards agriculture and less incentive to protect and restore habitats and ecosystems.

The "rural realities of conservation"

In Namibia, hunting is an integral part of

a successful conservation model, which benefits communities, wildlife, and natural ecosystems. The negative international perception of trophy hunting highlights the "gap... between the urban ideals and the rural realities of conservation".

The triple benefits of community livelihoods, wildlife conservation, and the maintenance of natural ecosystems could be put at risk by international pressure to restrict trophy hunting or the import of trophies, which would discourage hunting and/or reduce the willingness to pay for hunting in Namibia. This would result in lost income

and jobs for some of the poorest communities in Namibia, reduce funding for conservation, have the perverse incentive of encouraging poaching and illegal killing of wildlife, and put at threat millions of hectares of communal and commercial conservancies.

Namibia should maintain its strong support for a sustainable, regulated hunting industry, including trophy hunting, and with this the free global movement of trophies, for the benefit of its communities and wildlife and for the achievement of its SDGs.

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