



## Sustainable pathways for resilient economic zones

*Insights from partner experiences within the Natural Resources Stewardship Programme*

### 1. Context

Imagine an industrial park that applies circularity principles, manages waste(water) effectively, creates safe working conditions for its employees, benefits from enhanced regulatory compliance, and consequently is more resilient against risks and disruptions. A lot can be done to make this vision a reality, starting from strengthened cooperation.

Many African economies are adopting industrial park development strategies to attract investments, meet high employment needs and foster societal transformation through economic growth. Promoting industrial activity within economic zones or industrial parks often forms part of this. However, many industries induce negative externalities to natural resources, e.g. through the overconsumption of water or the discharge of untreated wastewater. This not only threatens the health of adjacent communities and the ecosystem, but can also lead to operational and supplier disruptions, higher production costs, failure to adhere to regulatory compliance, brand damage and reduced investments for industries. Therefore, it is in the interest of all stakeholders, be it the public

sector, companies or communities, to promote economic zones that embody resource efficiency, environmental protection, and regulatory compliance.

The Natural Resources Stewardship Programme (NatuReS) enables private-public-civil society partnerships to sustainably manage natural resources like water, soil or biodiversity for improved livelihoods and continued economic development. Risks emerging from the scarcity or endangerment of natural resources are shared by all stakeholders and should be addressed in a manner that encourages knowledge sharing, collective decision-making and problem-solving. This collective responsibility for the protection of natural resources is called stewardship. NatuReS adopts a stewardship approach, enabling private-public-civil society partnerships to jointly develop solutions for the sustainable management of natural resources.

This briefing note provides an overview on sustainable pathways to resilient economic zones, drawing from insights gained during a cross-country learning event between partners



from Ethiopia, South Africa, Tanzania, Uganda and Zambia on October 13<sup>th</sup>, 2021. The brief also shares lessons learnt by NatuReS and partners in supporting sustainability and mainstreaming stewardship principles in the management of industrial parks and special economic zones (SEZ)<sup>1</sup>. This briefing note aims to encourage stakeholders from private, public and civil society to engage in stewardship partnerships for the sustainable management of natural resources. Additionally, it outlines current challenges for SEZs across Africa, highlights existing partner experiences and points towards tools and approaches supporting the transition of Africa's economic zones towards sustainability.

## 2. The landscape and realities of African industrial parks regarding the adoption of sustainability practices

The uptake and adoption of sustainability practices<sup>2</sup> in economic zones around the world and specifically in Africa has been minimal. This suggests that the pursuit of such practices is a complex process that requires enhanced capacity and enabling resources to help navigate aspects like stakeholder engagement, spatial

configuration, management, legislation, bureaucratic impediments as well as the economic, social and environmental value add of sustainability practices. The lack of capacities and resources represents a significant obstacle to sustainable industrial development in Africa. Below is a catalogue of the challenges African countries face in driving sustainability practices in SEZs:

- **Limited institutional and regulatory support systems:** Lack of institutional and regulatory support, e.g. unclear roles and responsibilities between national regulatory authorities, lacking regulations regarding specific sustainability requirements or missing institutional guidance. All these induce obstacles towards the application and implementation of sustainability strategies in Africa's SEZs.
- **Lack of collaboration:** Popescu (2008) and Madanhire, et al. (2018) argue that for eco-industrial strategies to have transformative impact and emerge with critical spill-over effects, such as contributions to local economic development and job creation, collaborations and relationships amongst tenant companies are important. This

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<sup>1</sup> The terms industrial park and special economic zones are used interchangeably for ease of writing. The authors acknowledge that some countries differentiate between the two.

<sup>2</sup> With sustainability practices, this brief intends the enhanced environmental, economic and social performance of economic zones.



includes broad community support and active participation of major stakeholders. However, these collaborations are currently non-existent, partly due to lack of effective engagement of surrounding communities, who are affected by the pollution caused by industries. Moreover, the prevailing ‘enclave model’ of industrial parks, acting as isolated from their surroundings, witnessed in the majority of economic zones across Africa, perpetuates working in silos and the current disconnect between SEZs and regulators.

- **Ineffective planning and designing of SEZ:** Effective early-on planning and design of African SEZs is currently not undertaken. This could include e.g. encouraging eco-industrial development aimed at reducing waste and pollution, which would also increase SEZ’s business competitiveness. Yet, in current worst-case scenarios, industrial wastewater management systems are implemented only after prolonged pollution has already had significant impacts on the environment and surrounding communities. The absence of sustainability concepts in the design and planning stage of SEZs is a critical challenge that needs to be overcome, particularly given that most outlooks forecast a continuous and increasing industrialization across Africa,

which means that more SEZs are to be planned and designed.

- **Lack of infrastructure to pursue eco-industrial practices:** In 2014, the World Bank identified the absence of waste recovery and recycling infrastructure as a significant compromising factor for the economic and environmental viability of engaging in resource use efficiency, cleaner production and industrial symbiosis in industrial parks.

### 3. Sustainability in industrial parks: supporting tools and approaches

Sustainability tools and approaches represent means, which can be leveraged to support industrial parks in their emergence as areas achieving economic, social and environmental objectives in a balanced manner. Several tools and approaches have been developed with this aim. This brief presents **two supportive means: the Eco-Industrial Park (EIP) Framework** and the **Water Stewardship Approach**. Industrial parks and SEZ tenants can explore them to reduce negative externalities stemming from their operations and decouple industrialization from environmental degradation. Importantly, these tools and approaches are flexible in implementation, and as a result can be adopted jointly or sequentially, depending on individual needs and priorities.



- The [International Framework for Eco-Industrial Parks](#) is a jointly developed tool by The World Bank, GIZ and UNIDO, which defines the basic requirements and performance criteria for an industrial park to transform into an Eco-Industrial Park (EIP). An EIP is a community of businesses located on a common property, where businesses seek to achieve enhanced environmental, economic and social performance through collaboration in managing environmental and resource issues (UNIDO, 2022). The objective of the EIP Framework is (i) to assist stakeholders in their development and transition towards EIPs; (ii) to consistently

engage with, encourage, and recognize EIPs; and (iii) to improve the performance, sustainability and inclusiveness of the industrial sector and move towards an international standard on EIP. The framework also supports decision-making for industrial park managers to exceed compliance with local and national regulations regarding environmental and social issues. Regarding to this, it outlines performance requirements for park management under environmental, social and economic criteria. More information regarding the EIP Framework can be found [here](#).



Figure 1: EIP Framework

- [Water stewardship for sustainable water management in industrial parks; beyond the factory fence and catchment-wide:](#) Water risks linked to scarcity and quality as well as a lack of infrastructure continue to top the list of economic risks affecting the viability and prosperity of economic zones. Water stewardship has proven to be a powerful strategy to address water-related risks in a holistic way. The Alliance for Water Stewardship (AWS), the leading global organization promoting water stewardship,

defines water stewardship as a use of water that is socially and culturally equitable, environmentally sustainable and economically beneficial, achieved through a stakeholder-inclusive process that involves site- and catchment-based actions (AWS, 2019). Water stewardship presents opportunities for a park, its tenant companies and the surrounding community to better assess their water use and take informed decisions to manage the available



water more efficiently, responsibly and innovatively.

In 2019, AWS launched the **AWS Water Stewardship Standard 2.0**, a certification process that provides water stewards and industrial parks with a five-step incremental improvement framework, enabling them to commit to, understand, plan, implement,

evaluate and communicate water stewardship actions. The standard focuses on the operational site and its local water catchment but includes indirect water use in the supply chain as well. To learn more about the AWS Standard and water stewardship [click here](#).

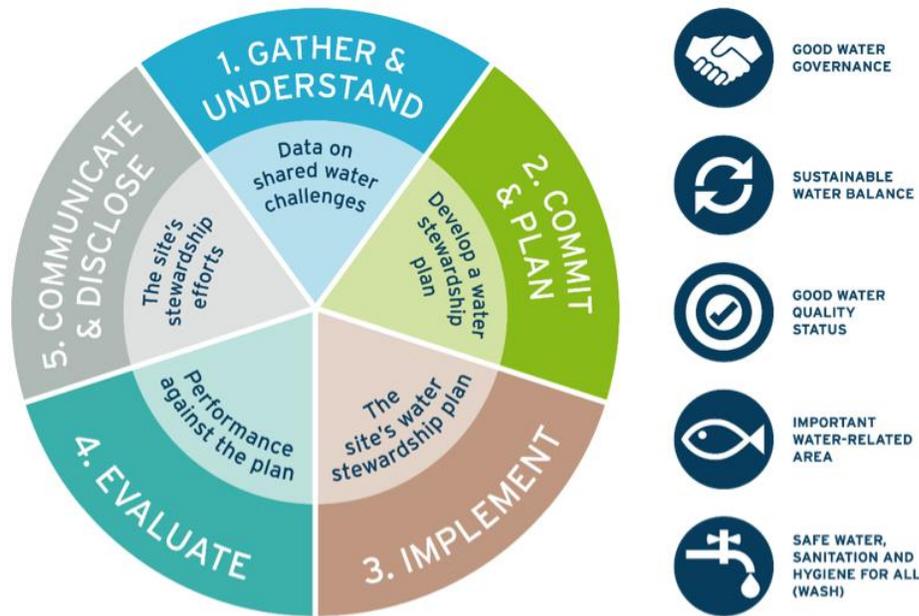


Figure 2: AWS Standard 2.0 and outcomes (AWS, 2019)

#### 4. IPs as sites for sustainability practices – journeys and experiences

Enabling industrial parks to be areas for sustainability practices involves understanding the industrial park ecosystem and reflecting on

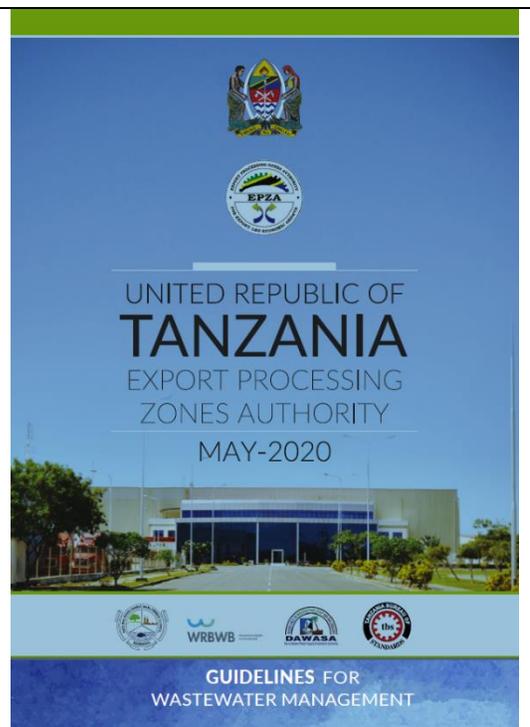
how to foster and structure sustainability practices within its various levels. This section presents different angles, which stakeholders are already enabling and embedding sustainability practices within various industrial park landscapes from.



The examples presented below illustrate that the embedding of sustainability practices in industrial parks can be driven both at national and at site level; either park-wide or by park tenants. Common throughout the examples is the need for a clear motivating factor for pursuing sustainability practices and the necessity for collective action.

## Case Studies: National level approaches to sustainability practices in industrial parks

**Tanzania:** Advance industrialization towards fostering economic development and job creation is a key strategic objective of the Government of Tanzania in its [National Development Plan](#). To achieve this strategic goal, the creation of Export Processing Zones (EPZs) and Special Economic Zones (SEZs) is considered key in attracting foreign investments to drive economic development. However, SEZs and businesses operating therein are facing increasing environmental risks, with water-related risks being a high priority. Since 2019, a multi-stakeholder stewardship partnership with Tanzania's Export Processing Zones Authority (EPZA) jointly develops solutions to reduce these risks in the long-term. EPZA, together with the Wami Ruvu Basin Water Office (WRBWO), the National Environmental Management Council (NEMC), Dar es Salaam Water and Sewerage Authority (DAWASA), and the civil



society organization Shahidi Wa Maji have teamed up to improve water security within Tanzanian SEZs and EPZs. It was deliberately agreed by all partners that there is a need to develop long-term solutions for the management of industrial wastewater and solid waste. One significant challenge that partners observed was the lack of regulatory clarity regarding wastewater management. Therefore, together with its partners, the EPZA developed national industry-specific guidelines on industrial wastewater management, [launched in December 2020](#). The guidelines are drawn up to guide developers and operators of SEZs on how to collect, treat and discharge all wastewater that is generated within a specific SEZ in a manner that conforms with current Tanzanian legislation, respects environmental policies, adheres to national environmental standards and guidelines and ensures long term sustainability of SEZs. To further implement the guideline, an online multi-agency permitting system is



created with the Ministry of Water, through which authorities will be able to issue water use and discharge permits more efficiently and monitor compliance online. The Ministry also intends to take up, adapt and distribute the guideline for use by Basin Water Boards and Water and Sanitation Authorities across the country. Mr. Lamau Mpolo, Director of Planning and Development at EPZA, states: “We have come up with specific guidelines that will ensure that wastewater from the zones we are managing will cause no harm to people and environment; industries will get water at the desired quality and with no negative impacts to the surrounding communities.”

**South Africa:** South Africa is a water scarce country. As a result, all economic sectors with significant water use,

including the industrial sector, are encouraged to optimize and efficiently use the available water resources. Owing to the high concentration of industries in a single space, industrial parks present favorable conditions for the industrial sector to make a significant contribution towards the efficient use of water resources. Recognizing this opportunity, the Department of Trade, Industry and Competition (the dtic) in partnership with GIZ NatuReS developed the national ‘Water stewardship for sustainable water management Standard Operation Procedures for Industrial Parks (Water Stewardship SOPs)’. The SOPs, through a four phased approach, assist users and stakeholders to better manage their water use and improve efficiency in their operations while embracing water stewardship principles. This is critical as it fosters a collaborative approach to water management in industrial parks by encouraging park tenants and



[Click here to access the SOP Document](#)

park managers to proactively understand water use patterns within the factory fence and collectively engage to address shared water challenges both across the park, as well as in catchments beyond the park fences. In light of this, the adoption of the SOPs can unlock diverse economic, social and environmental benefits, which park tenants and park managers can leverage to improve their competitiveness, business continuity and management of water risks. The Water Stewardship SOPs draw from the criteria and indicators within the Alliance for Water Stewardship’s ‘International Water Stewardship Standard’ (hereafter AWS Standard) and from the global Eco-Industrial Framework. Integrating these two instruments provides park managers and tenants with the confidence to internalise the SOPs with the knowledge that they have been informed by internationally recognised frameworks.



## Case Studies: Site-level approaches to sustainability practices in industrial parks

**Ethiopia:** The clothing company PVH started producing garments in the Hawassa Industrial Park in Ethiopia in 2017. To ensure sustainability of the factory, both in terms of natural resources availability and reputation, PVH decided that engaging beyond the fence through a stewardship approach was of paramount importance to the success of the site. With the support of GIZ-NatuReS, PVH was able to build relations with local communities and public sector entities in the Lake Hawassa sub-catchment. The lake is mainly threatened by siltation and pollution. Working together through the 'Protecting Lake Hawassa Partnership', stakeholders and communities have managed to reduce soil erosion flows into Lake Hawassa and have worked towards improving waste management in Hawassa City. Partners cooperated for example in setting up a used plastic value chain, generating jobs while lowering the amount of plastic ending up in the lake, and by renovating a constructed wetland which filters pollutants, including heavy metals, out of the water before entering the lake. Through the partnership, PVH was able to make significant and coordinated contributions to protecting Lake Hawassa, safeguarding aquifers that supply water to the industrial park, businesses, as well as inhabitants of Hawassa City. Parallel to its community engagement, PVH has been working with GIZ-NatuReS towards implementing the Alliance for Water Stewardship (AWS) Standard in the Hawassa Industrial Park and guidelines to ensure the long-term sustainability of SEZs.

For more information, visit PVH website: [Click Here](#)

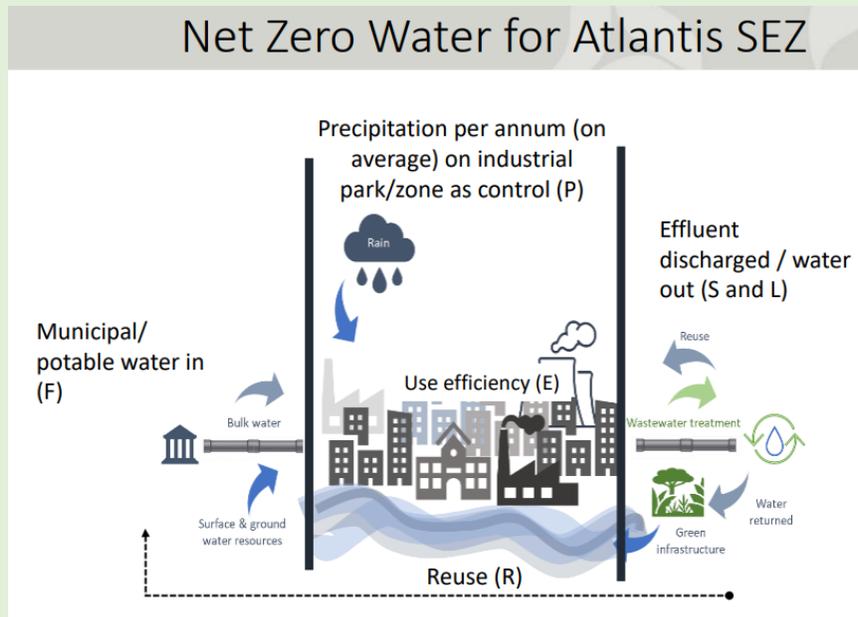


*PVH graphic showcasing stewardship beyond the fence line under the Protecting Lake Hawassa Partnership.*

*Copyright: PVH Corp.*



**South Africa:** The net-zero water approach is emerging as a critical medium to encourage park-wide water use efficiency and optimization. The concept of net zero water can be understood as a combination of actions, which help to maintain a balance between what is consumed, taken out and returned in terms of both quantity and quality of water. The goal of net zero water is therefore to minimize water users' impact on the resource, in terms of quantity and quality, by e.g. using alternative water sources, implementing water efficiency measures, or returning water of acceptable quality to the original water source. The adoption of a net-zero water concept offers environmental and economic benefits to industrial parks, as it enables them to holistically understand their water footprint, allowing them to take corrective measures to efficiently address any negative externalities. The process of efficiently responding to a park's water footprint could present opportunities to reduce its water use, related costs and ultimately enhance competitiveness. With this aim, the Atlantis Special Economic Zone (SEZ) and GIZ NatuReS, supported by the Department of Trade, Industry and Competition (dtic), collaborated on the '**Net-Zero Water Concept and Process Analysis Project**'. The exploration of the concept with Atlantis SEZ as a case study site was beneficial for examining potential actions and opportunities for the SEZ as well as to understand red tape measures linked to the pursuit of net -zero water. The findings were useful for reinforcing the development of Atlantis SEZ's Net Zero Water Strategy and Implementation Plan (currently in progress). In Atlantis SEZ, the full embracement and development of a net zero water strategy and implementation plan also aligns to the site's strategic identity as a GreenTech manufacturing hub embracing eco-industrial principles.



*Illustration of adoption a net-zero water approach at Atlantis SEZ. Copyright: Atlantis*

For more information, visit the Atlantis SEZ website: [Click Here](#)



**Tanzania:** Water, Sanitation and Hygiene (WASH) services are essential for peoples' health. As the Covid-19 pandemic has shown, even simple WASH measures can help protect oneself and others from contracting the virus. Additionally, at the workplace, a lack of reliable WASH services can have multiple adverse effects on business production processes due to workers falling sick. However, the provision of WASH services remains a challenge for both public and private sector. Apart from representing a threat to peoples' health, a lack of WASH services and sanitation systems in and around industrial areas also results in a declining water quality, which poses an operational risk for industries relying on clean water as one of their main production factors.

As described at the outset, the acceptance and adoption of sustainability practices in economic zones is minimal. In order to ensure business continuity in times of pandemic on the one hand, but also to involve surrounding communities in sustainability measures and therefore increase their acceptance of the economic zone on the other, a WASH assessment was conducted as part of the partnership with the Tanzania Export Processing Zone Authority (EPZA).

The local NGO Shahidi wa Maji implemented measures to facilitate and develop knowledge about water and sanitation-related risks for investors and industries on the one hand, as well as measures to actively involve the surrounding population on the other. The assessment was carried out on interest and in close cooperation with the garment manufacturer Tooku Ltd. in the Benjamin William Mkapa SEZ in Dar es Salaam.

It was conducted both at Tooku's production site, as well as at workers' homes in the surroundings of the SEZ, to effectively improve the WASH situation in the area, thereby safeguarding peoples' health, ensuring Tooku's business continuity, as well as protecting water and other natural resources from contamination resulting from a lack of sanitation systems. As the assessment only covered the housing situation of Tooku workers, a wide-ranging awareness campaign was conducted in addition, aiming to educate further population groups on the importance of WASH. The initiative with Tooku is part of wider efforts on institutionalization of water stewardship standards to investors operating under EPZA and is a good example of sustainability measures being implemented by private companies in industrial zones. Although a small step, it is a first step away from the 'enclave model' of industrial parks towards a closer cooperation with surrounding communities.



## 5. Opportunities for industrial parks in mainstreaming sustainability practices

As of 2019, Africa had 250 SEZs, with 51 SEZs still under construction and 53 additional SEZs planned (UNCTAD, 2019). In South Africa alone, there are over 400 IPs, when counting privately-owned and municipal industrial parks. These figures point towards a window of opportunity for the large-scale impact that sustainability practices could have in the ongoing industrialization of the continent. However, beyond the figures it is important to understand

the added value for mainstreaming sustainability practices in industrial parks or SEZs in Africa. A high-level summary on the opportunities/added value for IPs in Africa if integrating and pursuing sustainability practices is following.

- **Enable the establishment of Africa's IPs as centers of high environmental management services and standards:** Sustainability represents one of the megatrends that will guide business investment over the next years. With environmental management representing a



cornerstone of sustainability, IPs with robust environmental management services and standards in place, will be more attractive for investments.

- **Increase capabilities to manage and respond to risks and shocks.** Africa is vulnerable to a myriad of external shocks, including environmental and climate change-related risks, which affect business continuity and investments. The early-on integration of sustainability practices into economic zones represents an opportunity to make these centers of productivity, employment and growth opportunities resilient against the various risks. Reducing risks to business operations will in turn enhance African SEZs' potential to be preferred and globally competitive investment sites.
- **Improve competitiveness of SEZ and IPs in Africa:** Currently, there is a global sustainability trend pushing business to set up operations in areas that embrace sustainability practices. However, there is a considerable shortage of these areas. The adoption of sustainability practices by Africa's IPs will enable them to be key players in the scramble for sustainable business areas, representing a comparative

advantage in global competition for the attraction of investment. Africa's participation in the global value chain is currently small in comparison to other regions. If the continent's SEZs do not adopt sustainability practices, the participation in value chains risks to be further reduced. It becomes of increasing importance to fulfill businesses' needs for attractive areas which will help boost their sustainability indexes.

- **Enhance opportunities for positive externalities and greater integration of SEZ into the surrounding community:** Sustainability approaches such as water stewardship and the EIP Framework encourage SEZs to engage and collaborate with local surroundings. This way, they enable the economic zone to move away from its isolated enclave existence to be more integrated with its surrounding community and economy. This creates a foundation for greater positive spill-over effect both inside and outside the park and significantly reduces conflicts.
- **Increase uptake of technology and innovation in IPs:** The pursuit of sustainability practices in Africa provides an opportunity to adopt several technologies and innovations, which help IPs to be more



sustainable. In parallel, this offers an opportunity for African-led technological innovations to close this gap within and outside the continent. To this end, IPs are well-positioned to act as both the consumers as well as manufacturing sites for these technologies.

## 6. Conclusion

The adoption of sustainability practices undoubtedly presents and unlocks several attractive opportunities for Africa's SEZs and IPs. However, it can also be daunting for these economic sites and African countries. This brief outlined opportunities and tools for African SEZs to utilize in their journey towards sustainability, promoting continued economic growth while safeguarding the natural resources both the SEZs, as well as surrounding communities and ecosystems rely on. GIZ-NatuReS offers a stewardship approach of collective action to overcome the existing challenges and realize the potential of sustainably managed SEZs across African countries. By bringing together stakeholders from the public, private sector and civil society, challenges facing SEZs both at national, as well as on site- and park level can be resolved in the long-run. The tools outlined have proven particularly useful for this aim. Experiences have been built in their application throughout various partnerships supported by

GIZ-NatuReS. Jointly, the potential of African SEZs to become locations of sustainable long-term investment can be realized.

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## 8. Side notes and key considerations

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Registered offices in Bonn & Eschborn, Germany

**Contact:**

Faith Lawrence  
Country Coordinator South Africa  
&  
Ralf Senzel  
Country Coordinator Tanzania

[Faith.lawrence@giz.de](mailto:Faith.lawrence@giz.de)  
[Ralf.senzel@giz.de](mailto:Ralf.senzel@giz.de)

[www.giz.de](http://www.giz.de)  
<https://nature-stewardship.org/>

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