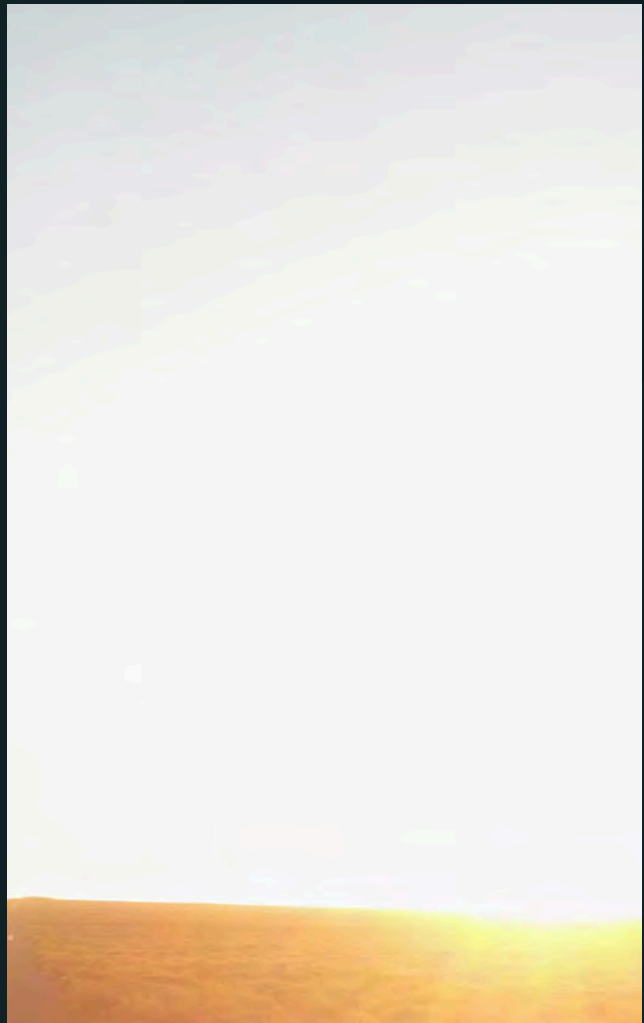


Greening Border Control Posts

Balancing Security with
Sustainability in Africa





Contents

Balancing security with sustainability	3
But why?	4
Tangible efficiencies	5
<i>Renewable energies</i>	5
<i>Sustainable water management</i>	6
<i>Waste management</i>	7
<i>Lighting</i>	8
<i>Shade and cooling</i>	8
<i>Sustainable building</i>	8
<i>Training</i>	9
Setting priorities	9
Recommendations for governments	10
Summary	11

Balancing security with sustainability

As Africa's economic landscape continues to evolve, the establishment of the African Continental Free Trade Area (AfCFTA) is set to drive a significant increase in intra-African trade.

To facilitate trade, many countries have begun to implement One Stop Border Posts, where administration is handled jointly by the neighbouring countries, and this has already shown dramatic improvements in processing transit times.

However, there is the potential for further efficiencies in the "greening" of border posts (whether one- or two-stop).

While such environmental sustainability may seem unimportant in the face of security and logistical challenges, the truth is that adopting eco-friendly practices at border crossings can have widespread, positive impacts on the efficiency of the border post as well as the local economy and environment.



Border points rely heavily on a consistent energy supply to maintain lighting, regulate temperature, power computers, and support other essential functions. In remote locations where connection to the national grid is unavailable or unreliable, diesel generators are often the go-to solution. However, this comes at a steep cost, both financially and environmentally. Even when border posts are connected to the grid, frequent power outages can lead to prolonged delays and diminished efficiency, ultimately hindering the flow of goods and people.

The ripple effects of inadequate energy infrastructure extend beyond the immediate confines of the border post. The lack of a stable power supply hinders the development of thriving border communities that could offer vital services to travellers and facilitate trade between nations.

Furthermore, poor waste management practices and limited access to clean water compound the challenges faced by these communities, stifling their potential to evolve into vibrant commercial centres.



But why?

It's clear that Africa is standing on the precipice of being economic community that can sit at the table with the other economic powers such as the US, the EU, China and India. This increased inter-continental trade will be underpinned by increased intra-continental trade, so the importance of fostering sustainable border communities cannot be overstated.

But why should governments prioritise the greening of border posts amidst a myriad of competing concerns? How can this investment yield tangible benefits for the nations that embrace it?

The answer lies in recognising that sustainability is no longer a luxury, but a necessity in an era marked by climate change and resource scarcity. By adopting green practices, border posts can generate positive impacts across five key areas: the environment, reliability, cost savings, public health, and national image.

An environmental impact

1 Border facilities consume large amounts of energy in their activities. They generate waste from paperwork, packaging inspections and informal trade. And then there are the emissions from idling traffic. All of which have an effect on the natural and working environments.

A reliability impact

2 Many border posts are in remote locations where the electrical grid may be unreliable if existent at all. On-site renewable energy like solar panels can provide a more dependable power supply. Improved water and waste systems will also make border posts more self-sufficient and resilient.

A cost impact

3 Lowering energy and water usage translates to both lower operational costs for border control agencies, while waste recycling can offer opportunities to generate revenue.

A health impact

4 Proper waste management, careful sanitation and access to clean water is important for protecting the health and wellbeing of border officials, traders, truckers and others who spend time there.

A public image impact

5 By showcasing green design and by educating those who work at and pass through border posts, governments can demonstrate their environmental commitment to their country.



CUSTOMS

Tangible efficiencies

How will this benefit the nations that do this? There are several ways that border posts can be made more efficient and effective.

Renewable Energies

There are many different sources of renewable energy that provide a cost-effective alternative to diesel generators, reducing fuel costs and ensuring a steady power supply for lighting, cooling and equipment.

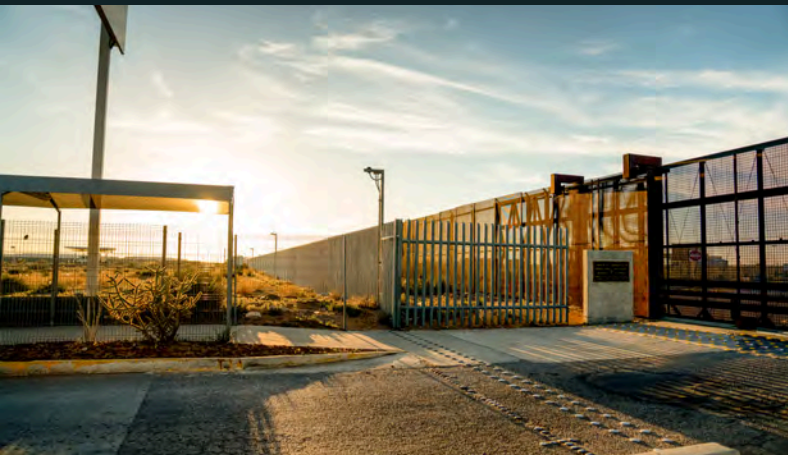
For African countries that are blessed with sun, this offers great opportunities for solar power. For those that have access to hills and flowing water, there are also opportunities for wind power and micro-hydroelectric power. And for border point crossings with high vehicle and foot traffic, there is the opportunity for piezokinetic power: the use of compression points on paths and roadways to create an electric charge.

Depending on the amount of energy produced, these power sources are able to supply not only the border posts themselves but can also contribute to the local community or be returned to the (national) electricity grid, making them (in time) net contributors to both the border posts and the local economies.



The use of renewable energy systems and batteries also minimises disruptions and allows for extended operating hours. This has been evidenced by the Malaba border post between Kenya and Uganda, where solar panels have cut electricity costs by 80%.¹





The common perception is that initial the investment to install these power generation systems is steep. However, this is not always the case: for example, micro-hydroelectric power plants that can easily generate up to 500kWh have minimal capital demands to develop and operate as long as there is a consistent supply of running water nearby.

For other power sources, one can conduct feasibility studies to assess their potential and benefits, bearing in mind the cost savings that will be made and, possibly, the financial benefit of selling surplus energy back to the national or local grids (as well as the financial benefits of providing local commercial businesses with consistent power supplies).

Sustainable Water Management

Sustainable water management practices, such as rainwater harvesting and the use of water-efficient fittings helps to maintain clean facilities and lower utility bills. The Chirundu border post between Zambia and Zimbabwe installed low-flow plumbing, saving over 3.6 million litres of water annually and ensuring uninterrupted operation during supply shortages.²

The practicalities of sustainable water management are quite simple. Rainwater harvesting systems can capture rainwater from roofs and gulleys and reuse it for non-potable purposes.

Low flow and auto-stop taps and toilets in restrooms can dramatically reduce water wastage.

Landscaping around border points with drought-resistant plants minimises water usage in keeping them healthy and in providing natural shade for travellers and staff.





Waste Management

Waste management not only creates a more pleasant working environment and entry points into the country, but it also provides opportunities for recycling waste and generating revenues.

Key to this is the establishment of efficient waste sorting systems, separating organic waste (food and liquids) and recyclable materials (such as plastics, paper, etc.). There are many businesses hungry for organic and non-organic recyclable materials:

- **Kaze Green Economy**, for example, needs organic waste that can be converted into charcoal briquettes and biomass logs for cooking, thereby helping to reduce deforestation.
- Companies like **Coca-Cola** and **Fanta** are required to use increasing amounts of recycled plastic in their bottles and the demand for recyclable plastic bottles is increasing exponentially.

By partnering with local waste collectors or companies that can use these materials, border posts can also generate income to help manage their costs.

Lighting

Lighting burns through electricity, and as a consequence through generator fuels. But modern LED-lighting is extraordinarily cost efficient compared to tungsten and neon lighting.

By installing these lights in high-traffic areas like inspection zones and parking lots, you create not only a cost-effective solution for night-time operations, but you also reduce reliance on fuels or the grid, and so further contributing to energy independence.

Shade and Cooling

By planting fast-growing, drought-resistant trees around border posts, you provide shade for waiting areas and parking lots, which not only improves air quality for staff and travellers that are waiting to cross. It can be done in phases and involve local communities.

This reduces reliance on artificial cooling systems, lowers energy consumption, and creates a more comfortable environment for staff and travellers, easing tempers and potentially reducing processing times.

Sustainable Building

Using recycled materials in construction projects promotes resource efficiency. For example, bricks made from recycled plastic can incorporate cats' eyes and have a significantly extended lifespan compared to traditional road surfaces.

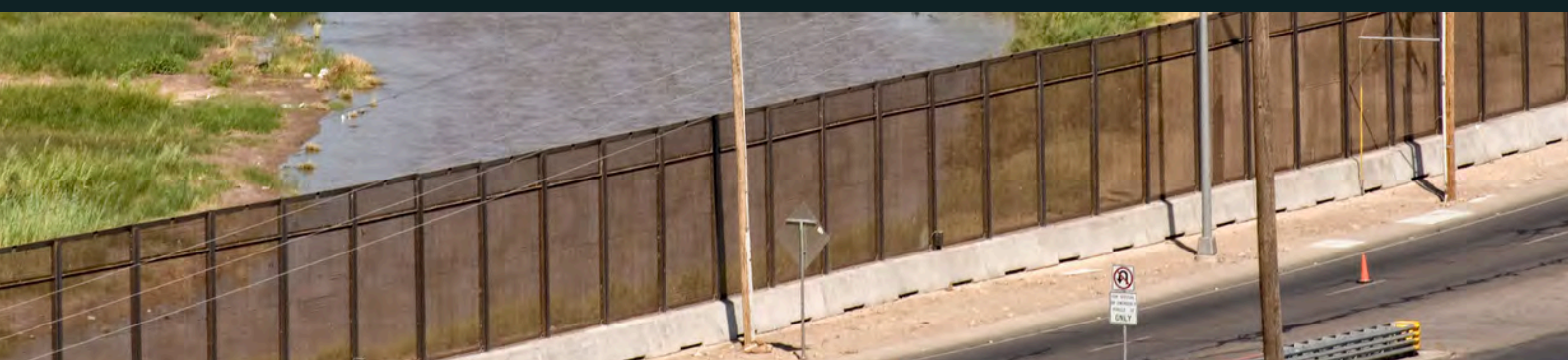
Green building practices incorporating natural lighting and ventilation can create a more energy-efficient and cooling environment.



Training

The cheapest and fastest way to begin this process is by implementing a comprehensive staff training programme on sustainable practices and the benefits that this brings to their work and the local communities. This education goes a long way towards ensuring buy-in from all involved and, as a consequence, proper implementation of green initiatives.

Similarly, by engaging with local communities to raise awareness about the environmental initiatives, and by involving them in tree planting or waste management efforts around the border, more is done to create employment and sustainability in local communities.



Setting priorities

For poorer nations where resources may be limited, prioritisation is key.

Low-cost, high-impact measures like staff training and waste management can take precedence and, as the savings accrue from these initial efforts, they can be reinvested in gradually transitioning to renewable energy sources and water conservation systems.

Moreover, One Stop Border Posts (OSBPs) demonstrate how efficiency and sustainability are intertwined.

As noted in the TradeMark ODI report (Mendez-Parra and Calabrese, 2023), OSBPs in East Africa have slashed border crossing times by 62-87% and transport costs by up to 14% on major trade corridors.

This has been achieved through streamlining procedures, enabling joint operations and investing in modern infrastructure. Incorporating green design principles and technologies into OSBP facilities can only further improve their performance.



Indeed, greening border posts supports environmental goals while ensuring they remain efficient conduits for trade. By streamlining processes and creating a more comfortable work environment, green border posts can significantly improve the efficiency of cross-border trade. Faster, smoother processing of goods and people means more legitimate trade, more revenue for governments, and more economic opportunities for citizens.³

Recommendations for governments

By working on greening border posts, you ...



... demonstrate environmental leadership and commitment to sustainability. With the right media attention and programmes, this can attract positive attention and potentially more international investment and funding.



... reduce long-term costs of operating border posts through energy and water efficiency measures, allowing more budget to be allocated to other crucial areas of border management.



... involve local communities in the green and circular economies, creating businesses and employment, thereby strengthening the formal economy and generating more taxable revenues.



... improve the health and well-being of border staff and local communities by reducing pollution and providing a more comfortable working environment.



... create efficiencies in protocols, allowing trade and people to pass more quickly, thereby generating more opportunities to strengthen the economy.



Summary

The greening of border control posts is not merely a trend or a nice-to-have. It is a strategic imperative, a vital step in Africa's march towards a sustainable and economically vibrant future.

By investing in these green measures, governments are not just improving border operations; they are investing in the health and well-being of their citizens, the resilience of their economies, and the fight against the already tangible and advancing threats of climate change. Each border post that adopts environmentally friendly measures contributes to a larger network of sustainability spanning the continent.

As more nations join this process, the cumulative impact will be profound in creating a cleaner, more prosperous Africa. By embracing sustainable practices, these once cumbersome checkpoints can become catalysts for green growth, propelling Africa forward in its growth and position on the world stage.

Endnotes

1. One-stop border posts in East Africa: Impact on transport costs and issues for further analysis, , Max Mendez-Parra and Linda Calabrese, 2023.
2. Tralac Annual Conference, 2015
3. Effects of One Stop Border Posts (OSBPs) Trade Facilitation Initiative on the Movement of Goods along the Rwandan Customs Posts , Vincent Nkundabaramye, 2021.

At KAGE Advisory, our mission is to empower governments, businesses, and organizations to create a sustainable, green economy for future generations. Our experts are passionate about addressing global environmental challenges and have extensive experience in sustainable development, green finance, and carbon credits.

We believe that sustainability is not only an environmental necessity but also a catalyst for innovation, job creation, and long-term economic growth. By working together, we can unlock the full potential of the green, blue, and circular economies and create a better world for all.

Delphin Kaze

+257 68 09 92 17

d.kaze@KAGEadvisory.com

Burundi

Dominic Parker

+44 78 80 33 40 24

d.parker@KAGEadvisory.com

United Kingdom

Muvirimi Kupara

+44 75 08 07 68 35

m.kupara@KAGEadvisory.com

United Kingdom

This material has been prepared for general informational purposes only and is not intended to be relied upon as accounting, financial, tax, legal or other professional advice. Please refer to your advisors for specific advice.