

# The Impact of Environmental and Climate Challenges in the Kingdom of Eswatini

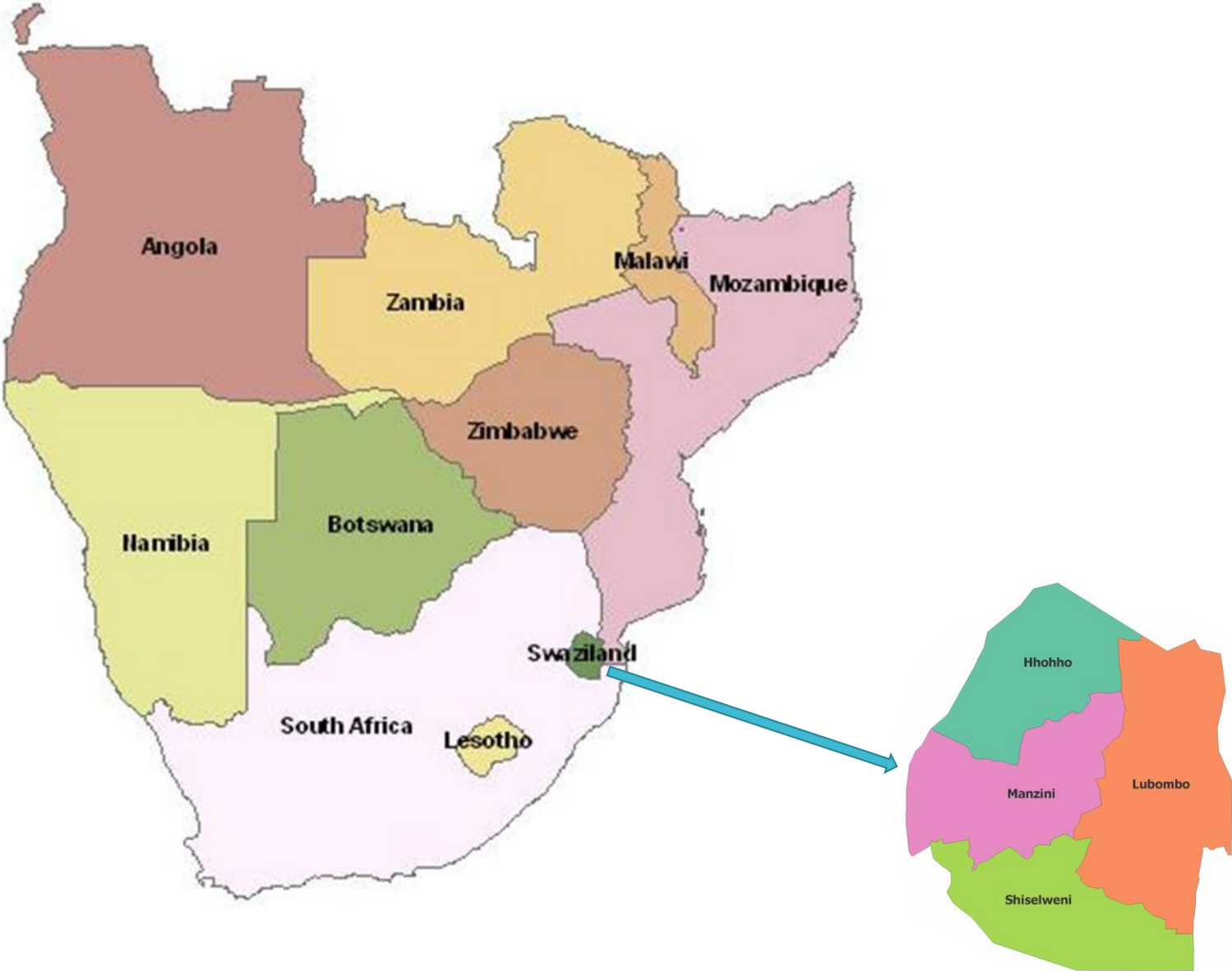
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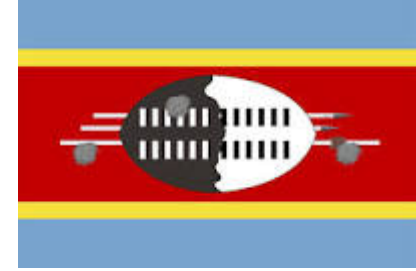
Principal Secretary, Ministry of Agriculture

Kingdom of Eswatini

# Kingdom of Eswatini



# Kingdom of Eswatini



- Situated between Mozambique and South Africa.
- Total area of 17,364 Square Kilometres.
- Population of 1.1 Million people.
- Agro-based economy.

# Kingdom of Eswatini

- Received independence in 1968
- Renamed Eswatini in 2018 during 50<sup>th</sup> Independence celebration





## **António Guterres**

United Nations,  
Secretary – General

### **Geneva, 28 February 2022**

I have seen many scientific reports in my time, but nothing like this.

Today's IPCC report is an atlas of human suffering and a damning indictment of failed climate leadership.

With fact upon fact, this report reveals how people and the planet are getting clobbered by climate change.

Nearly half of humanity is living in the danger zone – now.

Many ecosystems are at the point of no return – now.

Unchecked carbon pollution is forcing the world's most vulnerable on a frog march to destruction – now.

The facts are undeniable.

# Addressing Environmental and Climate Changes



A problem of our making that has already started affecting us and will affect our future generations as well as other inhabitants of planet earth.

# The Impact of Climate Change on Eswatini

Adaptation is the priority in Eswatini, a country that is experiencing the impacts of climate change including **increased intensity and frequency of extreme weather events**. Climate hazards faced by the country include droughts, floods, landslides, heatwaves, wildfires, invasive species, and epidemics.



**Source:** The Kingdom of Eswatini's Initial Adaptation Communication to the UNFCCC

# Mitigation and Adaptation Plans

The government has established **policies, strategies, and action plans** to encourage adaptation action, including the National Climate Change Policy, 2016 and the National Climate Change Strategy and Action Plan, 2015-2020.



**Source:** The Kingdom of Eswatini's Initial Adaptation Communication to the UNFCCC



## The need for an IGIF

All of these policies, strategies, and action plans are in vain without geospatial information because these occurrences take place **somewhere**.



Source: The International Federation of Red Cross and Red Crescent Societies (IFRC)

# The Impact of Climate Change on Eswatini

The following sectors have been prioritized by the Kingdom of Eswatini:

- Water
- Ecosystems and Biodiversity
- Health
- Infrastructure
- Agriculture

# Impact of Climate Change on Water

## Increasing temperature

- Temperature rise leads to greater evaporation rates and plant transpiration, which results in water loss in soil and plants.
- Increased evaporation due to high temperature increases the atmosphere's capacity to "hold" water.
- Increased evaporation may dry out some areas and fall as excess precipitation on other areas.

# Impact of Climate Change on Ecosystems and Biodiversity

## Increasing temperature

- Rising temperatures cause a shift from the normal living conditions of ecosystems, this results in either expansion or a decrease in the **geographical range of specific types of habitats**, both conditions are problematic for ecosystems.
- Rising temperatures also affect the nature of species interactions by changing the requirements of resources. The higher temperatures could also affect the ecosystem functioning by altering species interactions and complementarity effects.

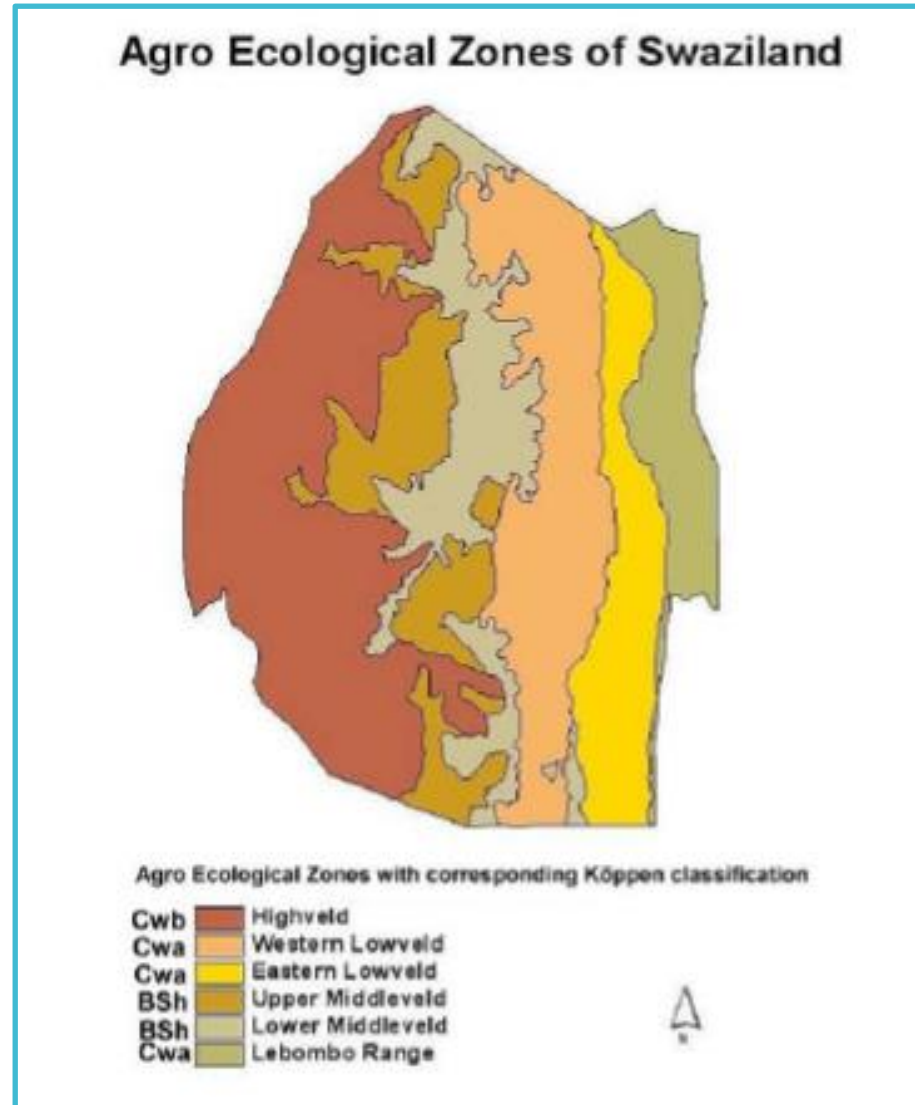
## Impact of Climate Change on Health

Scientific evidence shows an increase in vector-borne and waterborne diseases, which is attributed to poor hygiene and sanitation practices due to extreme weather events (flooding and water scarcity).

**Encroachment of vector-borne disease (malaria) has been evident in the Middleveld,** and this encroachment has been more prevalent in the Lowveld.

Climate-induced mental conditions (influenced by forced migration, displacement, and shifting sector dependency, in terms of agriculture) have been reported in Eswatini.

# The Malaria Scenario



# Impact of Climate Change on Infrastructure

The Eswatini Electricity Company (EEC) has since revealed that over E40 million was spent in 2021 on the repairing of infrastructure that was damaged by storms.



## Impact of Climate Change on Agriculture

- Evidence reveals that the country has experienced **shifts in the planting season**, as well as frequent and unfavourable incidences of food insecurity that were largely attributed to droughts and extended dry spells. **Significant rainfall deficits or cessation at critical stages of crop growth have frequently led to a serious shortfall in crop production**, especially maize, the staple crop in Eswatini (Mhlanga-Ndlovu & Nhamo, 2016).



## Need for subsidized farm inputs

- Cost of maize production calculated to be US\$390 Per Hectare.
- Government subsidized farm inputs by 50/50% last year as it was evident that crop yields will be very low.
- Due to scarcity of synthetic fertilizers the production rate escalated to US\$780.
- Government increased subsidy to 65/35%
- Sustainability of the subsidized inputs is not certain.

# Impact of Climate Change on Agriculture

- Wildfires, reduced rainfall with lengthy dry spells and increased evaporation, **increased frequency and intensity of floods and storms**, and increased temperatures will all negatively impact the agriculture sector of Eswatini, where about 75% of the population is rural and practices subsistence farming.

## Impact of Climate Change on Agriculture

- Prospects for the livestock sector are mixed as the sector continues to be vulnerable to erratic weather conditions, with some areas even becoming semi-arid, and to be impacted by diseases brought by climate change. **The 2015–2016 El Niño event led to a high livestock mortality rate of about 8% in Eswatini**, at an estimated value of SZL 264 million (> USD 20 million; Government of Eswatini, 2016b; Tfwala et al., 2020).

# How do we Implement Mitigation and Adaptation?

- The availability of **geospatial information** is of critical importance.
- **Legal frameworks** must be put in place to safeguard availability and usage of geospatial information.
- **Institutional frameworks** must be setup to ensure data standards, interoperability and accessibility.

## In Conclusion...

- The establishment of an IGIF in developing countries in particular, is a key step towards realizing **economic growth**.
- The observation that the attainment of Sustainable Development Goals would be **hampered** by the lack of an IGIF is a breakthrough and a game changer.
- The nature of geospatial information is **cross-cutting** on most sectors and therefore should be considered before development projects are implemented.