BRIEF DISCUSSION ABOUT SOUTH SUDAN

Manzu Gerald S. Kenyi

Masters student, The University of Electro-Communications

South Sudan's water resources and Flooding

Brief Background

Sudan got independence from Britain in 1956, becoming the largest country in the African continent. The name Sudan is derived from the Arabic phrase "bilad as-sudan" which means land of the black people. With very distinct cultures, and ethnicities, people and religion, The Sudan boosted of being a much diversified country.

Conflict in the Sudan

But even before the country could become independent, the Southern part of Sudan had demanded equal representation and more regional autonomy, which fell to deaf ears, hence the 1955 mutiny in Torit, a Southern Sudanese district. This led to the first Sudanese civil war also called the Anyaya that lasted until 1972, with the signing of the Addis Ababa agreement. Although the South was granted autonomy, violations of the Addis Ababa agreement and continued marginalization of mostly Southern Sudan and other regions in the Sudan led to the second Sudanese civil war that lasted from 1982 till 2005, becoming Africa's longest civil war. The Comprehensive Peace Agreement signed in Kenya (2005) guaranteed a referendum for Southern Sudan to be part of a unified Sudan or Secede and become a new country. On January 9th 2011, people in Southern Sudan unanimously voted to separate from the Sudan. And on the 9th of July 2011, South Sudan become an Independent country, becoming Africa's 54th country and the worlds' newest and 194th member state.

This is the brief history of the world's newest country, South Sudan.

Geography

With a population of about 11 million people, South Sudan extends over an area of about 640,000 square kilometers, representing approximately 27% of the total area of the Sudan before separation. Geographically, the region expands on the clay plains that extend southward with gradual uphill slopes to the mountains on the Sudan frontier with Ethiopia, Kenya and Uganda; from the borders with the Democratic Republic of Congo in the South west and Central African Republic in the west, passing through low lands of the White Nile Valley and the Sudd wetland to the Ethiopian highlands in the east. Altitudes in South Sudan range from 600 to 3000 meters above sea level. Most of South Sudan has a sub-humid climate. There are two seasons, the Rain season (from April to November) and the Dry season (November to March).

Water Resources in South Sudan

Although South Sudan might be known for being an oil rich country in Sub-Saharan Africa, South Sudan also has very rich water resources.

Much as the River Nile is considered as Egypt's lifeline, it is equally important to the South Sudanese people. The White Nile cuts through South Sudan from the South to the North, before meeting the Blue Nile from Ethiopia, in North Sudan. The White Nile has a number of tributaries in South Sudan, majorly the Sobat River and River Pibor. The waters of the Nile and its tributaries are important to both the pastoralists and agricultural communities living along the rivers.

A number of strategic towns including the capital city of South Sudan (Juba) are located along this famous River and its tributaries.

The Sudd Wetland and its Geographical importance.

According to UNESCO, "The Sudd wetland, with an estimated area of approximately 57,000 km^2 represents one of the largest freshwater ecosystems in the world".

The Sudd Wetland

The size and extent of the Sudd wetland depends on the seasons of the year. During the dry season, gradually reduces to about 42,000 $km^{2.}$. During the wet season, it roughly doubles to over 90,000 km^2

The Sudd is sustained by the flow of the White Nile in addition to rainfall runoff from its surrounding areas.

The Sudan is a scenic landscape of exceptional natural beauty.

The White Nile dissipates northwards from Juba across a shallow depression to produce a network of channels, lagoons and inundated areas, which harness the nutrients of the underlying clay soils. Patterns of flood inundation heavily influence the Sudd's vegetation, which consists primarily of

permanent swamps, river and rain flooded grasslands, and floodplain woodlands. These habitats exhibit strong environmental gradients with pronounced short and long-term variations in biomass production and distribution.

It is internationally recognized for its unique ecological attributes that include various endangered mammalian species, antelope migrations, millions of Palaearctic migratory birds and large fish populations. The Antelope migrations from Ethiopia to the Sudd is the 2nd largest animal migrations in the World, after the Masai Mara migrations in Kenya and Tanzania.

Antelope Migration to the Sudd Wetland from Ethiopia

- The Sudd also has an abundant fish population.

Flooding Conditions

South Sudan's major natural disaster is annual Floods. Much as the Sudd helps in retaining flood water, during the rainy season lots of towns and habitable areas become flooded, sometimes taking weeks or months for the water to subside. In October 2019, Pibor, a town situated along the Pibor River was submerged in flood waters. Schools, homes and hospitals were all submerged.

Flooding in Pibor

In October 2020, Bor town situated along the Nile River was flooded. Even till early February 2021, the water had not completely subsided.

Flooding in Bor town

Flooding normally displaces thousands of people, making them homeless. Yet, in almost all major flooding areas in South Sudan, the communities are mostly pastoralists. This is therefore an annual humanitarian situation that needs lasting solutions.

Strategic Development Goals, GIS and Remote Sensing

The world faces a number of challenges, from poverty and inequality to environmental and climate change. To address these challenges, the United Nations rolled out 17 Sustainable Development Goals, as the blueprint to a better and more sustainable world for all of us.

Goal 17 of the SDGs is about climate change. And surely, the patterns of flooding not only in South Sudan but also in all other Nile Basin Countries including North Sudan, Egypt, Ethiopia, Kenya and Uganda can be attributed to climate change. For example, the levels of Lake Victoria has been raising, and unimaginable floods have been witnessed in both North Sudan and South Sudan.

To be able to address issues of climate change, supportive and enabling policies and tangible projects need to be implemented in line with SDG number 17.

Today, I will focus on Remote sensing, Geographical Information Systems, weather data and the use of social media data, based on Professor Kayoko Yamamoto's Research lab at the University of Electro-Communications, Tokyo.

To mitigate the risks associated with natural disasters like flooding, it is imperative to invest in

Remote sensing technologies,

Utilization of Geographical Information Systems and weather data so as to make precise and informed decisions;

With the important role of Social media, it is necessary to filter through large data sets so as to find important information that can make a difference.

Currently, my research is based on exploring social media data, particularly flood related data posted on Twitter and determining the usefulness of such information to increase synergies between the different partners working together before, during and after floods in South Sudan.

It is my belief, that as we collectively continue to implement the SDGs, the dream for the world to be a better place for everyone is within our reach.

Last but not the least, I think I will be bias if, I do not mention the role the Japanese Government is playing towards the global realization of the Sustainable Development Goals.

However much South Sudan has been engulfed in internal skirmishes and conflicts almost immediately after gaining independence from the Sudan, the country is slowly moving towards realizing peace and tranquility.

This would not have been possible without the generous support of the Japanese Government towards the implementation and monitoring of the Revitalized peace Agreement.

In 2017, the Government of Japan contributed personnel to the United Nations Peace troops in South Sudan.

Throughout the 10 years that South Sudan has been independent, the Japanese Government together with JICA have been one of the most generous towards the Government and people of South Sudan.

Currently, JICA is working on clean water projects for thousands of homesteads in South Sudan, as well as constructing a second bridge across the White Nile in Juba, the capital of South Sudan.

It is also worth mentioning that South Sudanese Olympic team members have been hosted in Maebashi since November 2017, in preparation for the Tokyo 2020 games. The South Sudanese people are very much grateful for these tireless and continuous support.

At the same time, there a number of Scholarships provided to students from Africa, to acquire quality education in Japan, by the Japanese Government.

These are some of the wonderful contributions of the Government of Japan towards the realization of the Sustainable Development Goals.

And finally to the students,

I commend all your efforts in continuing your pursuit for global enthusiasm.

With this spirit, the next generation has so much to offer to the Globe.

(Notes might be slightly different from the real presentation, but no very much. I will present and explain everything within this document, and answer any questions).

Thank you all.

Have a blessed month!