

Climate change management in Senegal

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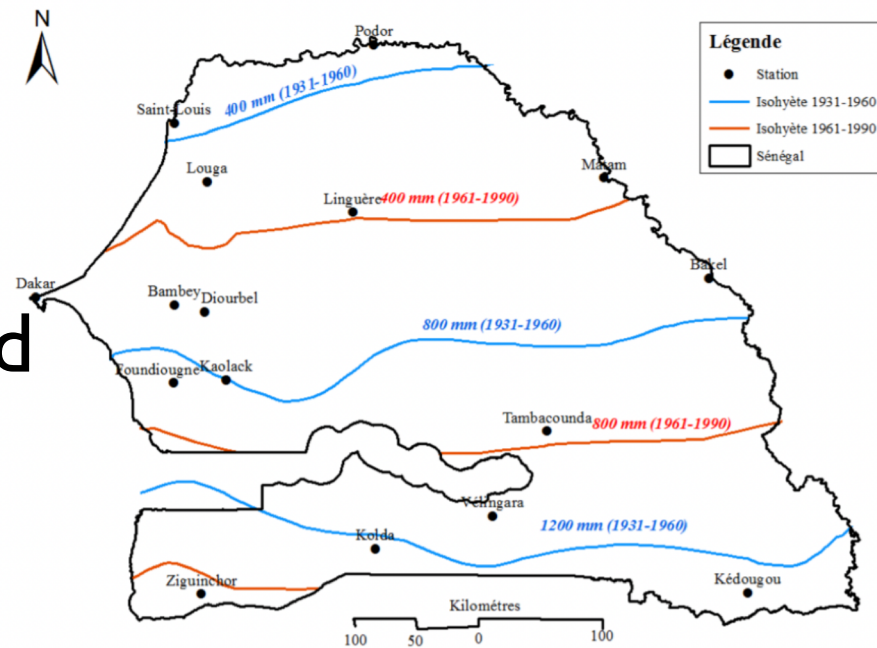


Outline

- 1. INTRODUCTION**
- 2. CURRENT SITUATION OF CLIMATE CHANGE IN SENEGAL**
- 3. GOVERNANCE AND MANAGEMENT OF CLIMATE ACTION**
 - a. Initiatives to address climate challenges
 - b. Institutional and legal framework
- 4. MITIGATION-ADAPTATION OPTIONS**
- 5. CONCLUSION**

Senegal's Presentation

- Climate : alternation of **two seasons** - a rainy season from July to October.
- Rainfall is often **deficient** and generally **poorly distributed** over time and space.
- Senegal continues to rely on **rain-fed agriculture**. Only 5% of the land is irrigated.



© Climate Analytics

Senegal's Presentation

- **Agriculture** is one of the dominant parts of Senegal's economy (17% of GDP).
- Agriculture occupies about **75% of the workforce**.
- **Poor soil, weather conditions, a lack of infrastructure and access to quality seeds and fertilizer.**



<https://ifdc.org/>

USSEIN: an ambitious project to develop agriculture

- Designing curricula programs to **modernize** and **develop** the agricultural sector, to raise awareness on climate change management
- **Creation USSEIN in the Peanut basin**
- A focus on the **agricultural value chain, learning by doing and entrepreneurship**



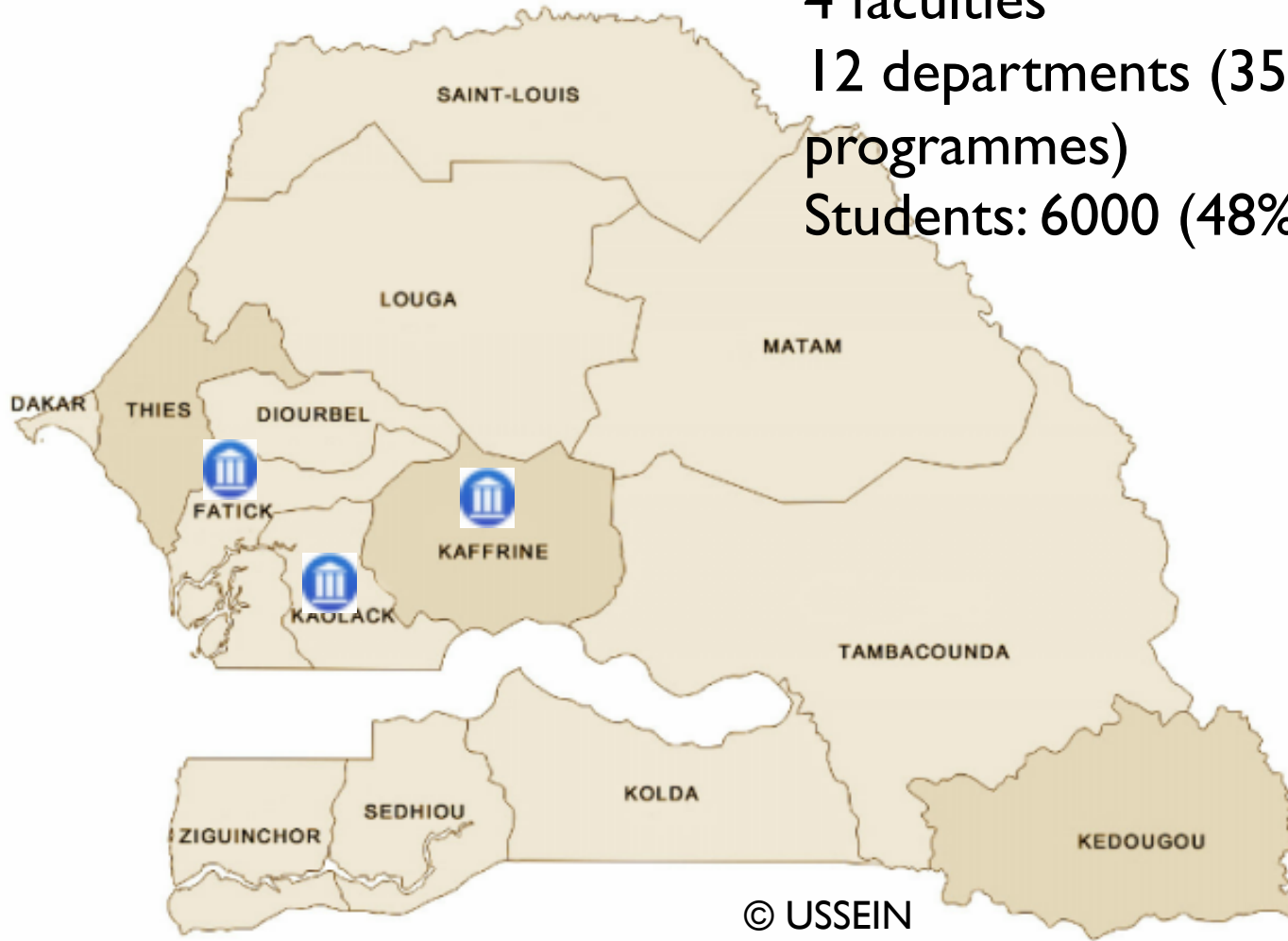
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A multicampus university

4 faculties

12 departments (35 bachelors programmes)

Students: 6000 (48% F – 52 M)



USSEIN' Infrastructures



Library



Administration

USSEIN' Infrastructures



Peanut Institute



Classrooms (500 seats)

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Current and future trends in key climate parameters :Temperature

Current trends	Future trends
<ul style="list-style-type: none">• Global rise in minimum temperatures between 1961 and 2010;• Increase ranging from 0.58°C in Dakar to around 1.88°C in Ziguinchor, which recorded a higher rise in minima than in Tambacounda (around 1.06°C).	<p>Average increase between +1.17 and 1.41°C by 2035.</p>

<https://unfccc.int/sites/default/files/NDC/2022-06/CDNSenegal%20approuv%C3%A9e-pdf-.pdf>

Current and future trends in key climate parameters: Rainfall

Current trends	Future trends
<ul style="list-style-type: none">• Decrease in precipitation from 1951 to 2000 on the reference stations.• Shift in isohyets from the north to the south of the country.<ul style="list-style-type: none">• The 500 mm isohyet which was located on the north-Dakar and Linguere axis between 1951 and 1980 is found in the regions of Kaolack and Fatick.	<ul style="list-style-type: none">• Decrease towards by 2035.• Decrease of 16 mm on average in the northern zone of Senegal compared to the reference period (1976-2005).• The decline would be more pronounced everywhere else, and would be an average of 89 mm

Current and future trends in key climate parameters: Sea level

Current trends	Future trends
<ul style="list-style-type: none">• Over the past fifty years, an average coastline retreat rate of between 1 and 1.30 m/year	<ul style="list-style-type: none">• On all the Senegalese coasts and for a rise in sea level of 1 m by 2100, it was predicted that 55 to 86 km² of beaches would disappear• About 6000 km² of low areas, mainly estuarine areas, would be flooded.• Equivalent to the disappearance of all current mangroves.

Societal consequences of climate change

- **Extreme precipitation and drought events** occurred across the world
 - Negative consequences for soils, surface waters and infrastructure



Floods in Keur Massar – Dakar – Senegal -Sept. 2020

Societal consequences of climate change

Sea level rise: 10 cm

- In Senegal, Palmarin peninsula, in the Saloum estuary

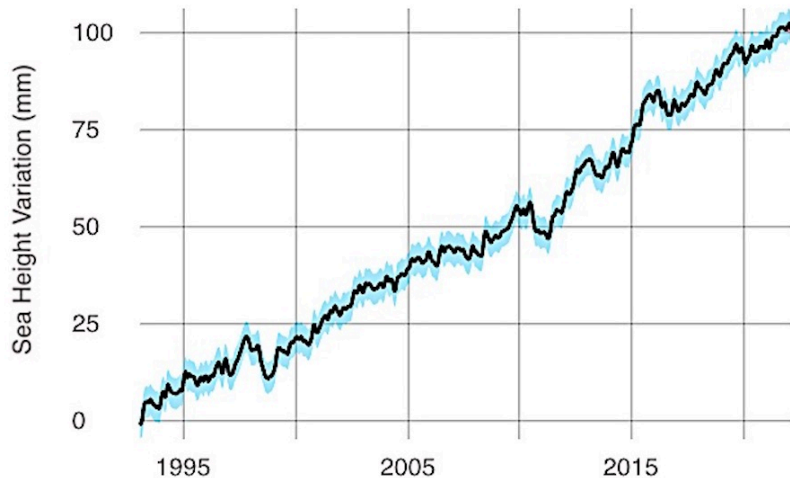
- shoreline retreat rates of **1.20 m/yr in 1982** increase to **2.45 m/yr in 2005–2010**, **2.60 m/yr in 2010–2014** and **3.05 m/yr in 2014–2018**.
Enríquez-de-Salamanca, 2020

**SATELLITE DATA: 1993-
PRESENT**

Data source: Satellite sea level observations.
Credit: NASA's Goddard Space Flight Center

RISE SINCE 1993

↑ 100.8
millimeters

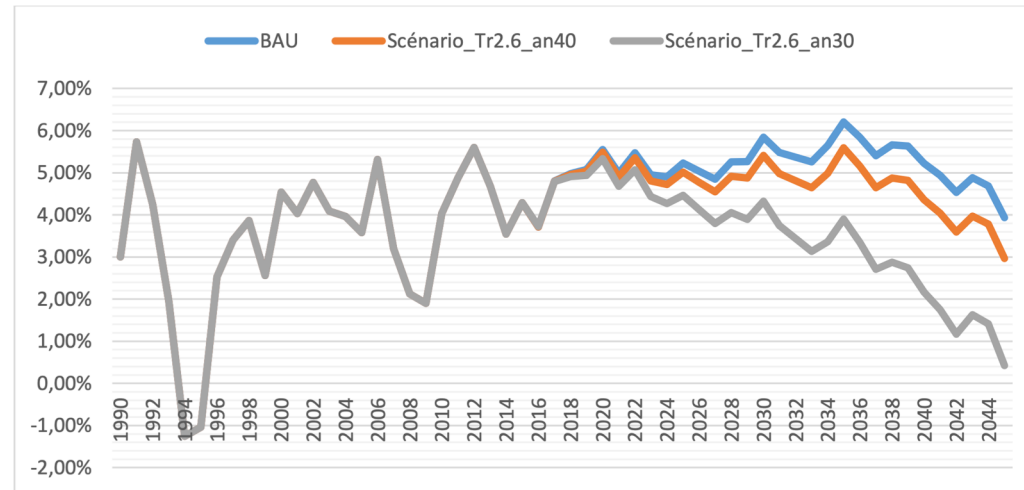


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Impacts and vulnerabilities

- On the economic side, a simulation using the T21 model shows that the increase in temperatures will have a negative impact on GDP growth and will lead to a higher level of poverty in Senegal.



Effects of temperature increase on GDP growth measured by the T21 model

Source : Direction de la Planification (MEFP)

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International climate policy governance framework and tools

- Intergovernmental Panel on Climate Change (IPCC)
- United Nations Framework Convention on Climate Change (UNFCCC)
- Kyoto Protocol (KP) and the Doha Amendment
- Paris Agreement (PA)

Several initiatives to address climate challenges

- **National Action Plan for Adaptation (2006)**
 - Identification of essential needs, activities and urgent and immediate projects that can help communities cope with the adverse effects of climate change
- **National Communications (1997, 2010, 2015)**
 - Inventory of Greenhouse Gas (GHG) emissions as well as mitigation measures and adaptation actions undertaken
- **Nationally Determined Contribution (NDC) in 2015**
 - Senegal's Commitment Document in relation to the Paris Agreement
- **Green Climate Fund (GCF) Country Program**
 - Priority projects and programs to be submitted to the GCF for funding by 2025 and 2030

NDC strategic visions

- **Overall vision:**
 - Ensure a low-carbon and climate-resilient mode of socio-economic development by 2025 and 2030.
- **Mitigation:**
 - Energy transition with the integration of renewable energies and energy efficiency at household level, in industries, etc. ;
 - Sustainable and ecological waste management;
 - Better sustainable management of forests and Improved carbon sequestration.
- **Adaptation**
 - Strengthening the resilience of ecosystems and production activities;
 - Monitoring role on the health, well-being and protection of populations against risks and disasters related to extreme events and climate;
 - Strengthening observation and data collection networks.

Agencies and institutions for implementing climate action and adaptation policies

- **Sectorial ministries**, directorates, departments, agencies, municipal assemblies, and councils
 - plan, implement, and coordinate climate adaptation policies for priority sectors declined in NDC and PNA;
- **Academic institutions**
 - supporting the move from science development to **implementation by addressing impacts of climate change research questions and capacity building for vulnerable communities** and priority sectors for climate action

Agencies and institutions for implementing climate action and adaptation policies

- **Technical and financial partners**
 - resource mobilization, capacity development, and technology development for current and future adaptation action in priority sectors;
- **Civil society organizations (CSOs)**
 - planning, advocacy, education, and awareness raising, evidence-based research, monitoring and evaluation of adaptation efforts
- **Private Sector**
 - driving adaptation and climate risk reduction for priority sectors that achieve Senegal's sustainable development agenda and realize its NDCs to the Paris Agreement;

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Energy mitigation options

Achievement of renewable energy by 2030

- solar of 235 MW
- 150 MW in wind,
- 314 MW in hydroelectricity

Solar photovoltaic system in Malicounda (Mbour). A public-private partnership infrastructure with a capacity of 22 MW



<https://reussirbusiness.com/>

Transportation mitigation options

- Multiplication of **sustainable public transport** (Bus Rapid Transit, Train Express Régional)
- Car fleet renewal



<https://urbasen.com/>

Waste mitigation options

- Promulgation of regulatory **texts** on solid waste management
- Construction of standardized **collect points** and integrated **centers for the management of waste**
- **Waste valorization** in agro-industry



<https://www.promoged.sn/fr/propos-du-promoged>

Agriculture mitigation options

- Dissemination of agro-forestry techniques
- Provide organic manure and compost improved with the production of biogas
- Collection and water storage



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Agriculture adaptations options

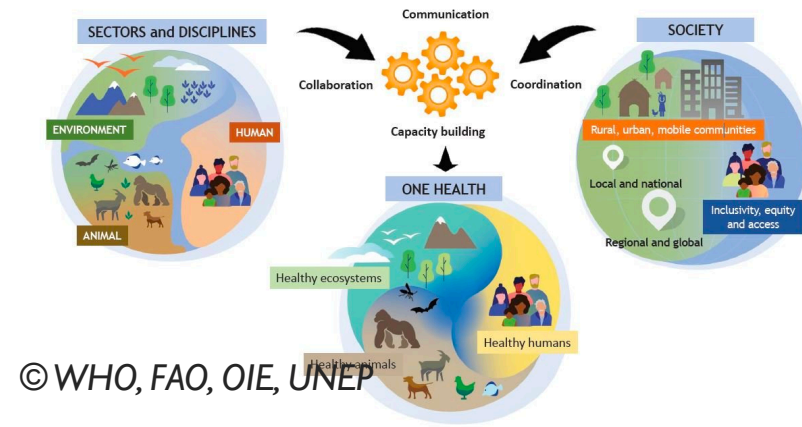
- Use of **adapted varieties** (short cycle and temperature)
- Promotion of **agro-ecological production systems** (integrated agriculture-livestock-agroforestry)
- Reinforcement of resilience by **diversifying production systems** (improving food and nutritional security, etc.)
- **Water control** (Promotion of local irrigation, development of retention basins for supplementary irrigation)
- Promotion and **use of climate information and services**
- **Agricultural insurance**
- **Management of climate-related risks and disasters**

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Opportunities

- Integration of climate risks in the planning of **sectoral development policies** such as in health program (one health approach)
- Integration of **climate change in curricula design**
- Researches undertaken to better understand the challenges and opportunities for advancing climate **solutions focused on local community priorities (Climathon)**



Challenges

- **Inequalities in access to climate financing** between priority adaptation sectors and vulnerable territories;
- **Weakness of technical and scientific capacity** to transfer and take ownership of innovative adaptation strategies with a high impact on communities;
- **Lack of a framework to monitor and evaluate performance** in climate policies implementation, such as the MRV (Monitoring, Reporting, Verifying) system



DANKE!

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SÉNÉGAL

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SENEGAL
One trip, a lifetime of memories

SENEGAL