



GLOBE program



RESILIENCE TO LOW RAINFALL IN FERLO, CONTRIBUTION OF THE GLOBE SENEGAL PROGRAM

**GLOBE ANNUAL MEETING, FREDONIA, NEW YORK, 14 JULY 2024
THEME: CLIMATE AND RESILIENCE**

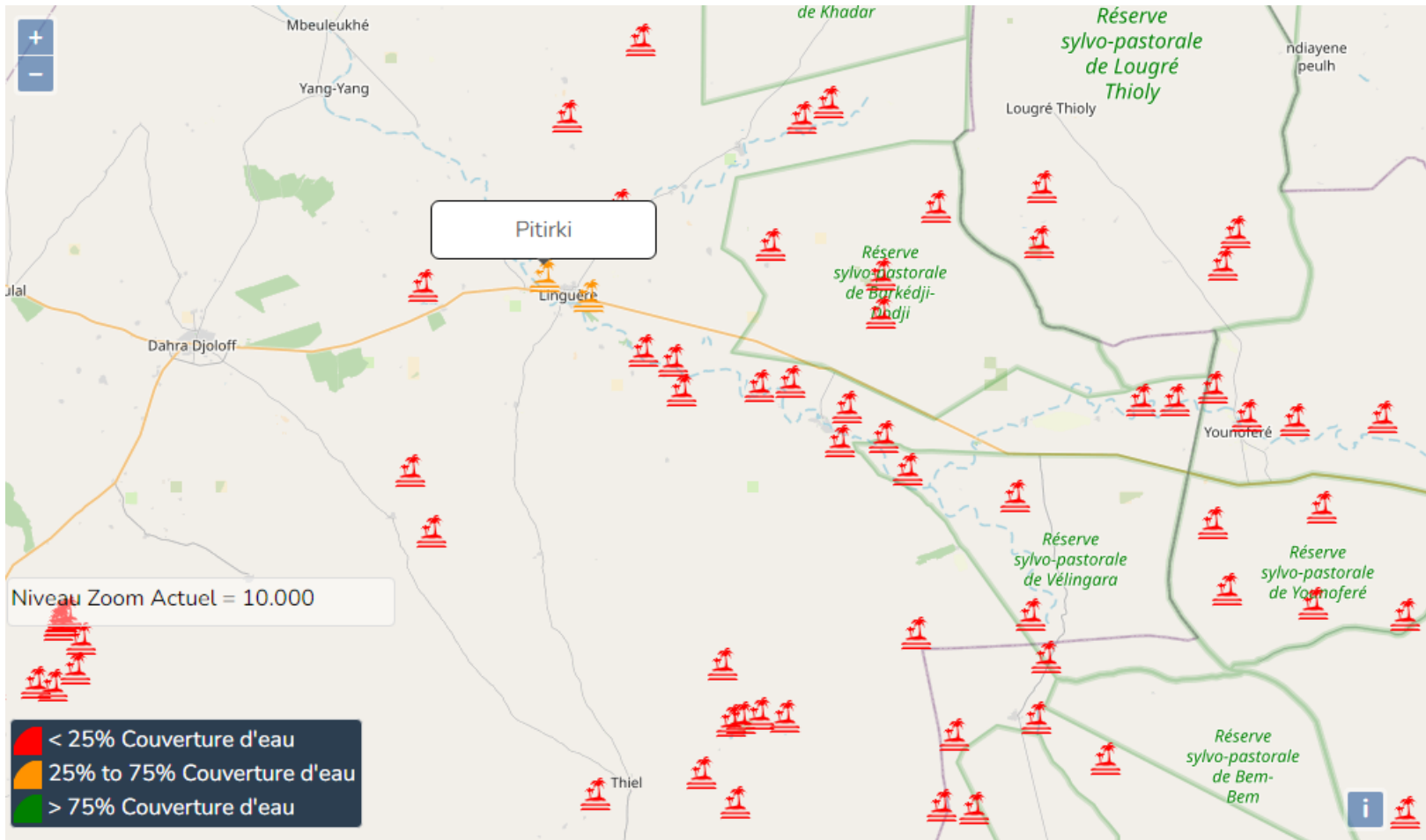
Retention basins: climate resilience

- In the northern zone of Senegal called FERLO, water resources are insufficient. The annual rainfall is between 350 and 400 mm .
- In the rainy season, runoff water converges towards the shallows and forms water points. These water points or temporary ponds represent a significant water potential in the rainy and in the dry season
- The state of Senegal has undertaken a vast program to develop these water points into retention basins to retain runoff water for longer during the dry season, This was the case with basin PITERKI in 1998, GLOBE hydrology site.
- The development of the Piterki pond made it possible to ensure the availability of water throughout the dry season in this area, to diversify socio-economic activities (market gardening, fish farming, livestock) as well as a slight reconstruction of the biodiversity.
- The construction of retention basins is a great example of climate resilience.

WENDOU platform

- Water Environment Dashboard for Observation in support of Users in Ferlo, Senegal
- <https://wendou.csesn.dev>
- In Senegal, the GLOBE program since 2021 in collaboration with SERVIR-AO, has carried out research on the “Monitoring of temporary ponds” through the WENDOU application <https://wendou.csesn.dev> which provides information on the availability of the water and the level of 1300 mares distributed in the area Ferlo.
- Information on mares is accessible directly on the WENDOU platform through the following link: <https://wendou.csesn.dev>, for the general public in general. But for end users such as breeders, the information is made available through voice messages sent to their mobile phones and alerts broadcast by community radio stations.
- The purpose of the WENDOU application is to contribute, among other things, to improving the management of mares and the practice of transhumance. The information provided allows breeders to save time, especially the long distances they travel in search of mares filled with water to water the livestock.

<https://wendou.csesn.dev> basin localisation with water level



Water cover information

Historique

Prévision

Détails

Village

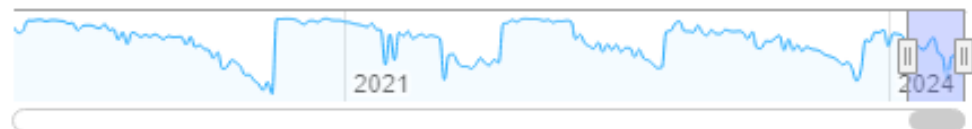
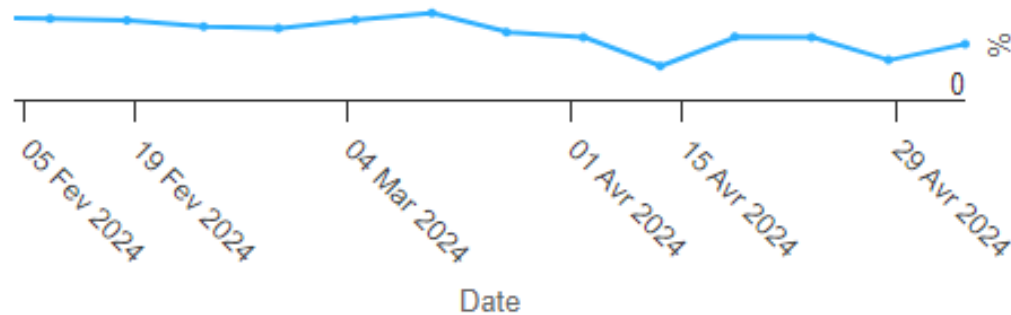
Biomasse

Pourcentage de couverture d'eau à Pitirki (-
15.138,15.396)



3m ▾

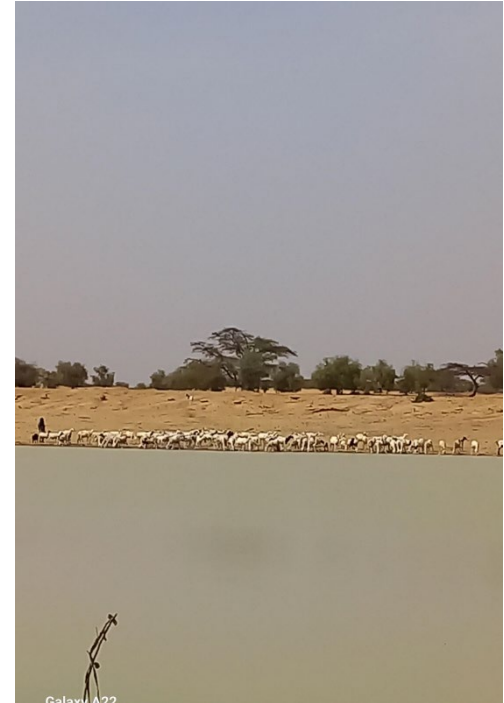
3 Feb 2024 → 3 Mai 2024



Highcharts.com

Réinitialiser la Carte

Piterki, GLOBE hydrology site



The PITREKI water retention basin

Methods

GLOBE protocols



Water pH : the students take periodic data at Lake Guiers and the Piterki basin, using pH paper.



water temperature : students take the water temperature with a water thermometer respecting the protection of water and the environment.



Precipitations : at each solar noon, the students go to the atmospheric site located in the school to measure the amount of rainfall.

Piterki/table of variation of pH and water temperature

Sites	average pH de l'eau					average temperature de l'eau en °C				
	R1	R2	R3	R4	R5	R1	R2	R3	R4	R5
No relevé										
Date	april 2021	may 2021	june 2021	nov. 2023	february 2024	april 2021	may 2021	june 2021	nov. 2023	february 2024
Piterki	7	7	7	6	7	33,3	27.75	28,9	28,5	23.7

GLOBE students outreach visits to the community



- Documents illustrate the local visits of students accompanied by club supervisors to the community to share their research results. They confirmed to farmers and breeders that the physicochemical values of pH between 6 and 7 and water temperature between 23 and 33 °C are indeed compatible with the life of animals and plants. The water from the retention basin can be used all year round.

Learning climate resilience and promotion of STEM



In addition, the practical activities of GLOBE as well as the analysis of data in class allowed us to strengthen students level and STEM skills and improve science teaching-learning and climate change resilience.

Thank