



REPUBLIC OF SENEGAL

Ministry of Water and Sanitation

Water Resources Management and Planning
Department



INBO WEBINAR

«WATER INFORMATION SYSTEMS, GOVERNANCE AND
THE CONTRIBUTIONS OF REMOTE SENSING:
FOR INFORMED MANAGEMENT OF WATER
RESOURCES AT THE NATIONAL LEVEL AND AT THE
BASIN LEVEL»

Tuesday September 15, 2020

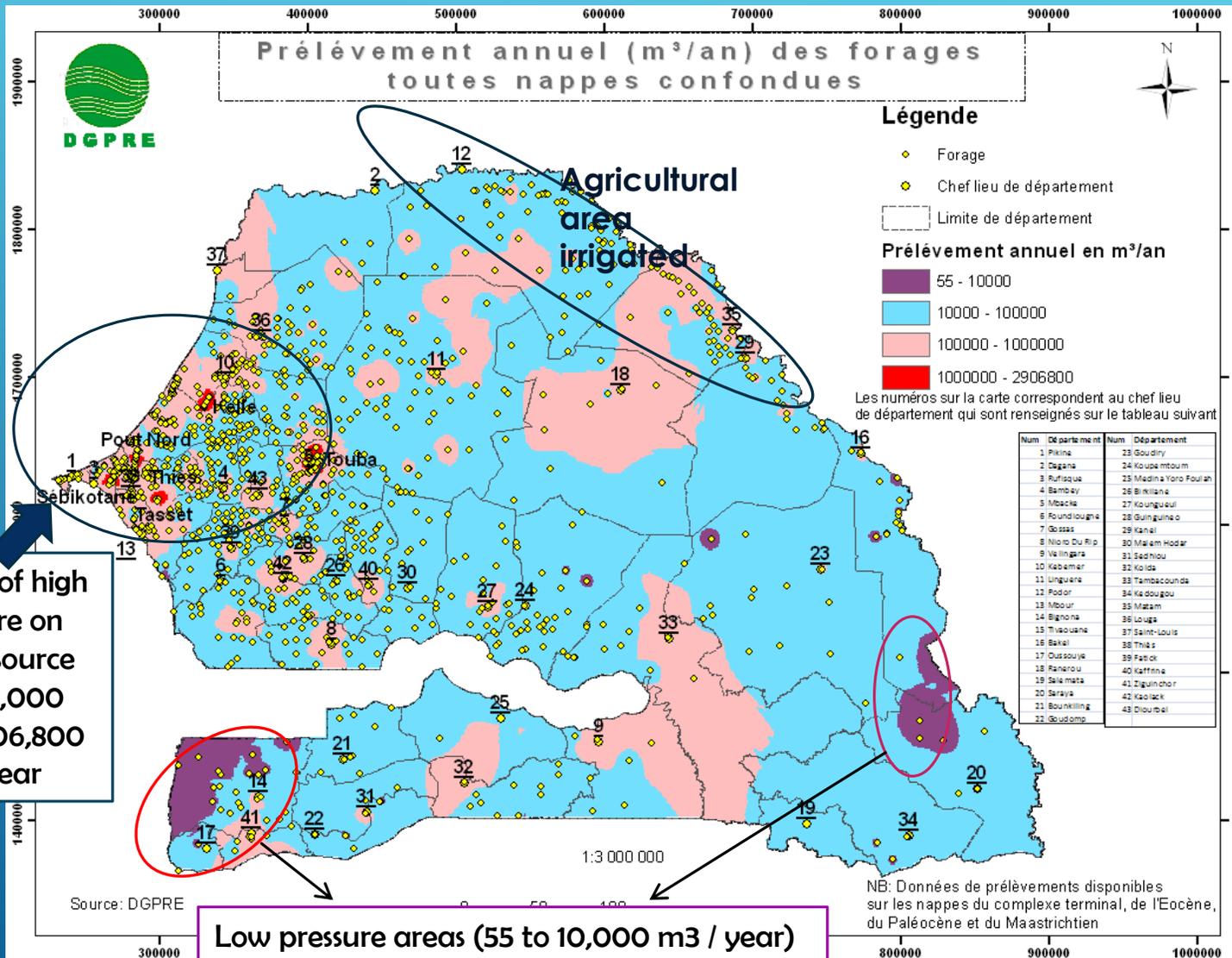


SOMMAIRE

- ❑ PROBLEM OF WATER RESOURCES
- ❑ NATIONAL HYDROMETRIC MONITORING NETWORK
- ❑ PIEZOMETRIC MONITORING NETWORK AND MONITORING AREAS
- ❑ NEEDS TO RESPOND TO REQUESTS FROM DIFFERENT ACTORS
- ❑ THE SOLUTIONS IMPLEMENT BY THE DGPRE
- ❑ SOME WEAKNESSES OF THE CURRENT SYSTEM
- ❑ THE INTEGRATED INFORMATION SYSTEM ON WATER RESOURCES
- ❑ OUTLOOK

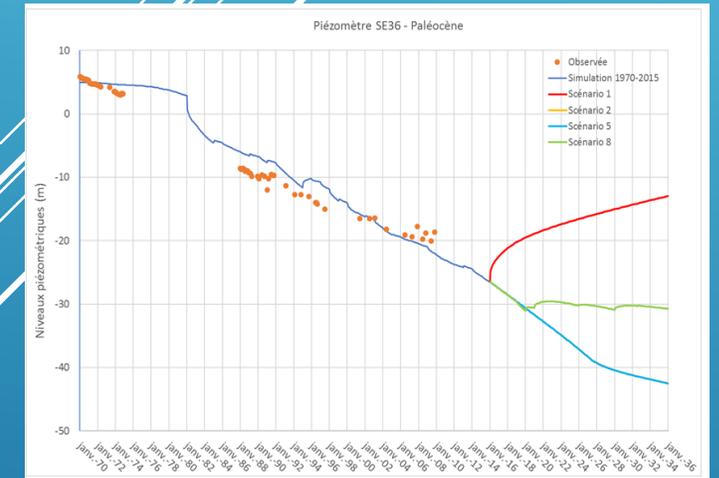
PROBLEM OF WATER RESOURCES

Pressure of different uses on water resources



OVEREXPLOITATION: case of the horst of Diass

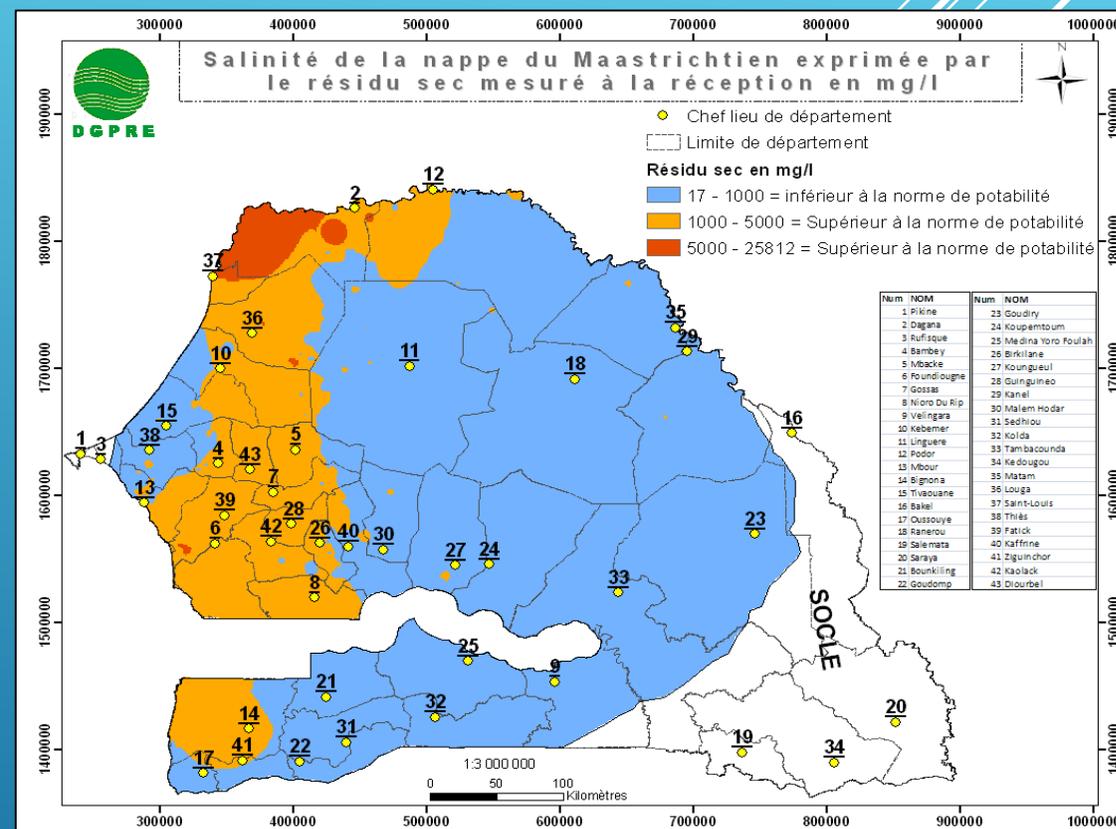
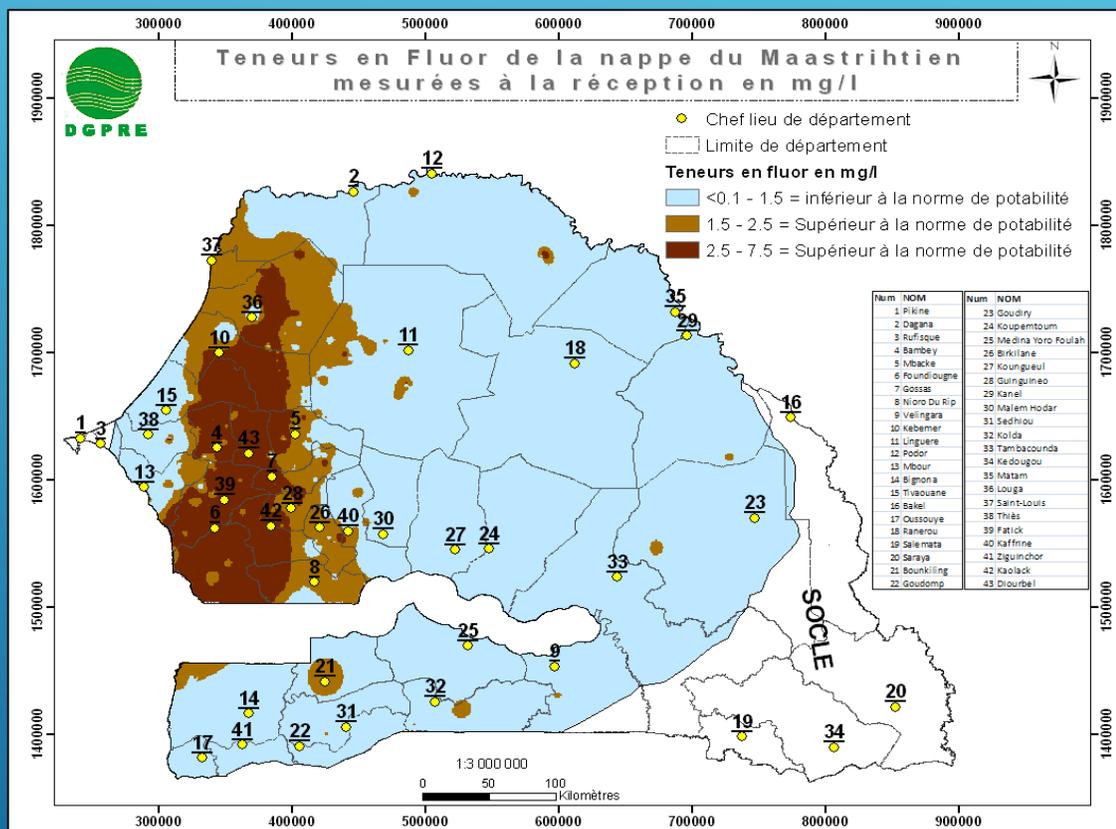
The results of forecasts for the period 2016-2035 have confirmed the continuing downward trend in the level of groundwater



PROBLEM OF WATER RESOURCES

Quality of water resources

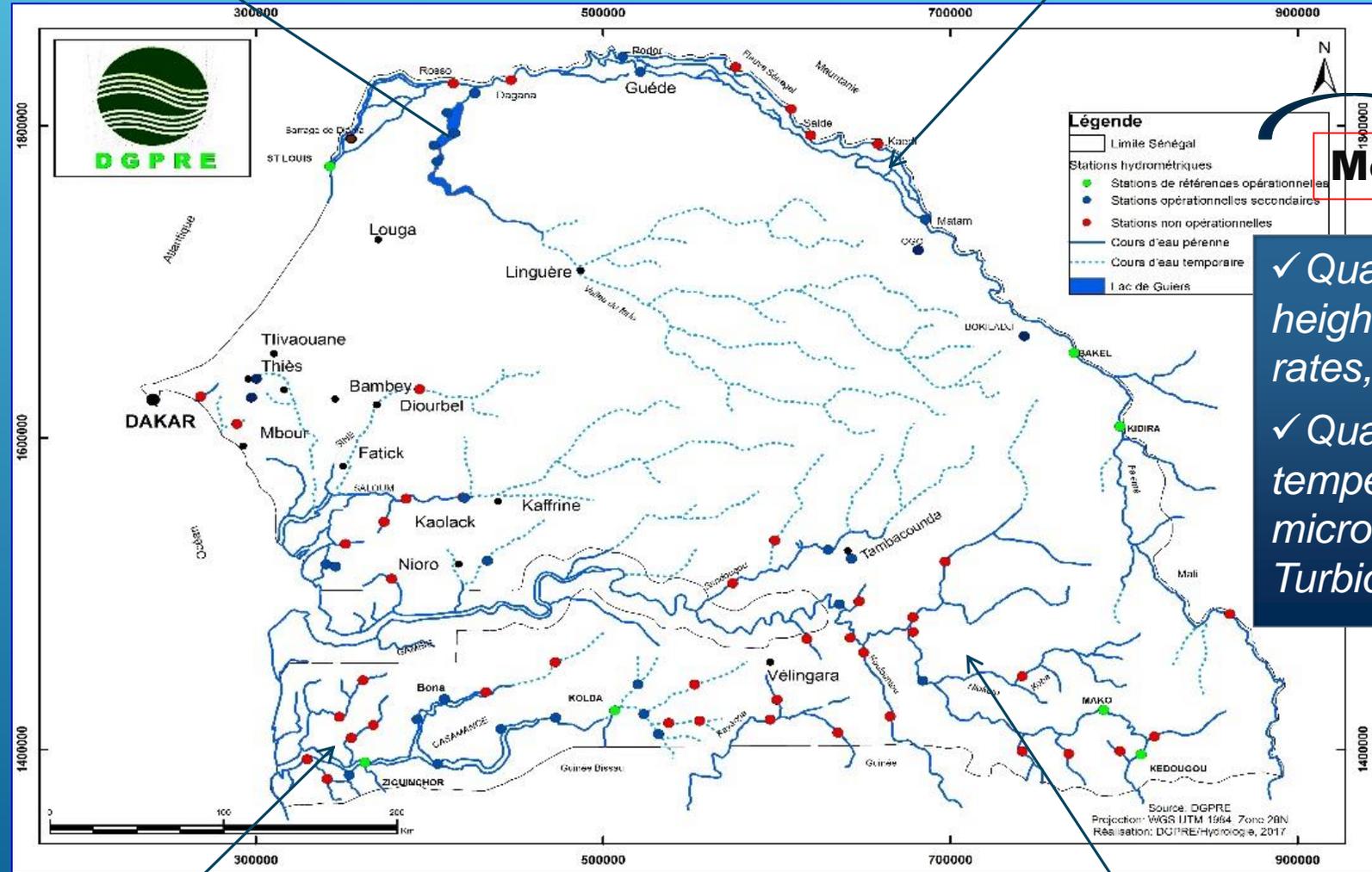
High level of fluoride and salt in the groundnut basin



NATIONAL HYDROMETRIC MONITORING NETWORK

Lac de Guiers

Senegal river



Monitoring

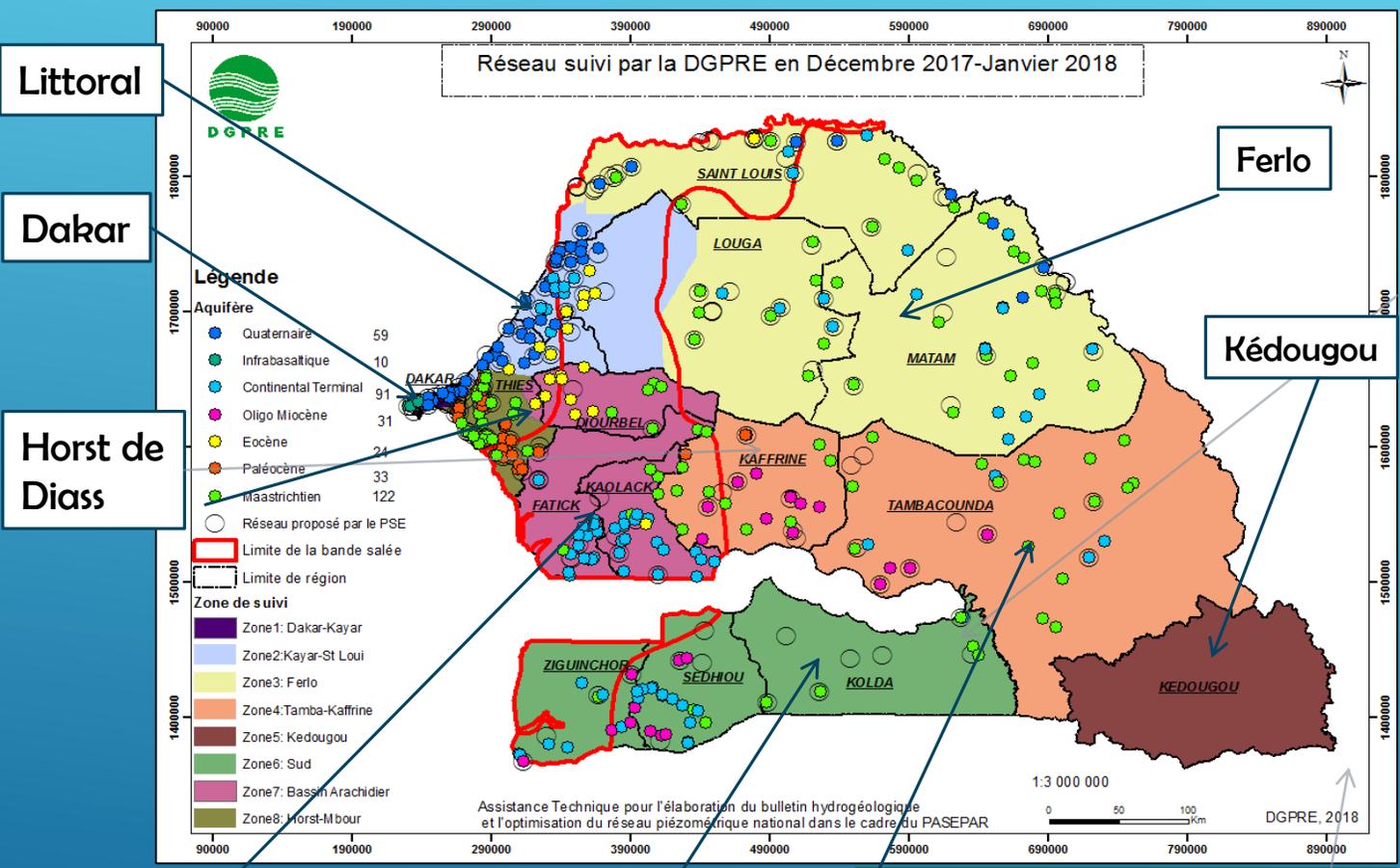
- ✓ Quantitative: heights, flow rates,
- ✓ Qualitative: EC, temperature, pH, microbiology, Turbidity,



Casamance

Gambia river

PIEZOMETRIC MONITORING NETWORK AND MONITORING AREAS



Littoral

Dakar

Horst de Diass

Bassin arachidier

South zone (Ziguinchor-Kolda-Sédhiou)

Tamba-kaffrine

Ferlo

Kédougou

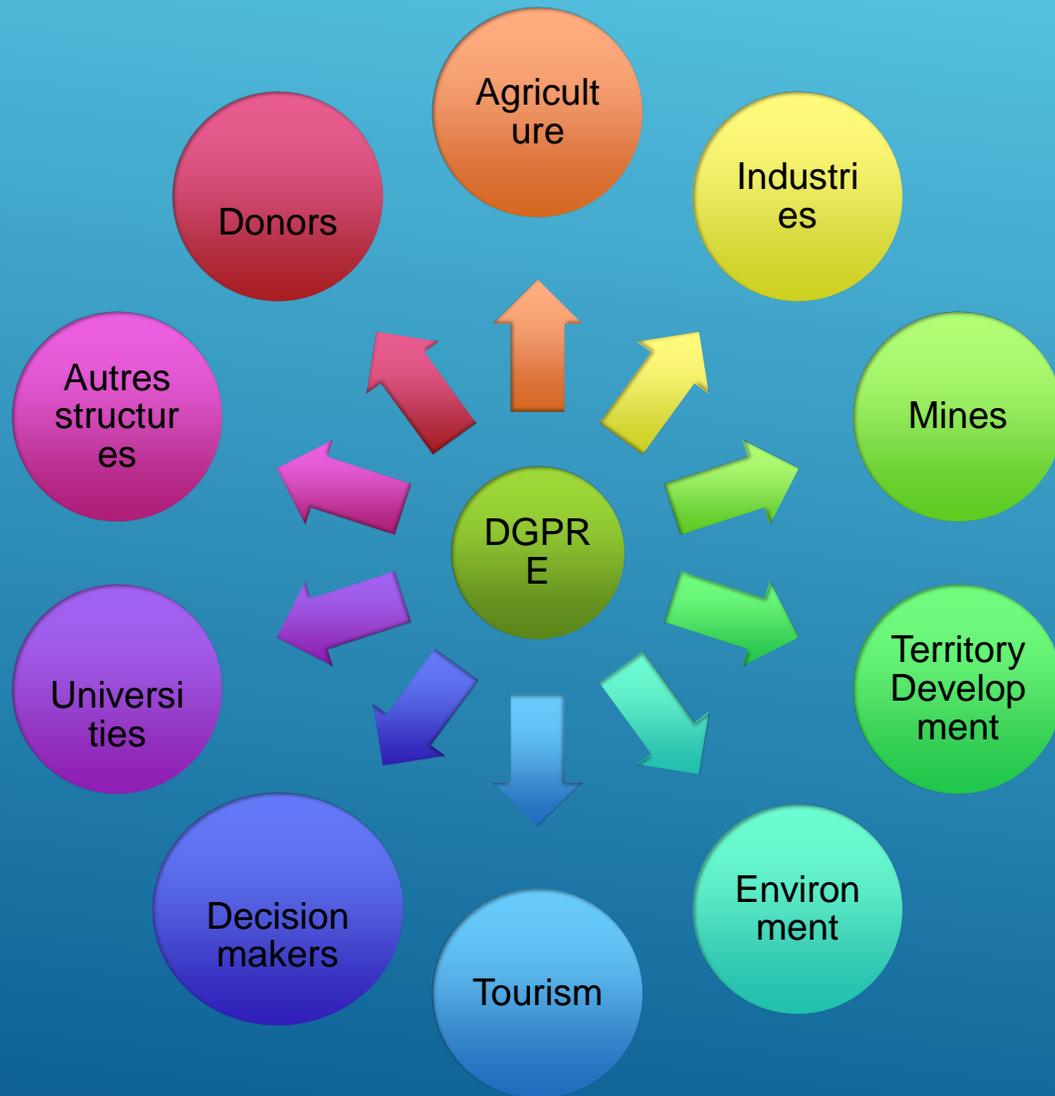
Qualitative and quantitative monitoring
Through a network of 370 structures, including 344 functional
Made up of piezometers, boreholes and wells



Water level (Static level)
In situ parameters (EC, pH, Temperature, TDS)
Chemical elements (major ions: calcium, magnesium, potassium, sodium; chloride, sulfate, nitrate, bicarbonate) and minor (iron, fluorine, etc.)

NEEDS TO RESPOND TO REQUESTS FROM DIFFERENT ACTORS

to respond effectively to the needs of decision-makers involved in the process of developing and monitoring water policy, but also of the various technical and financial partners

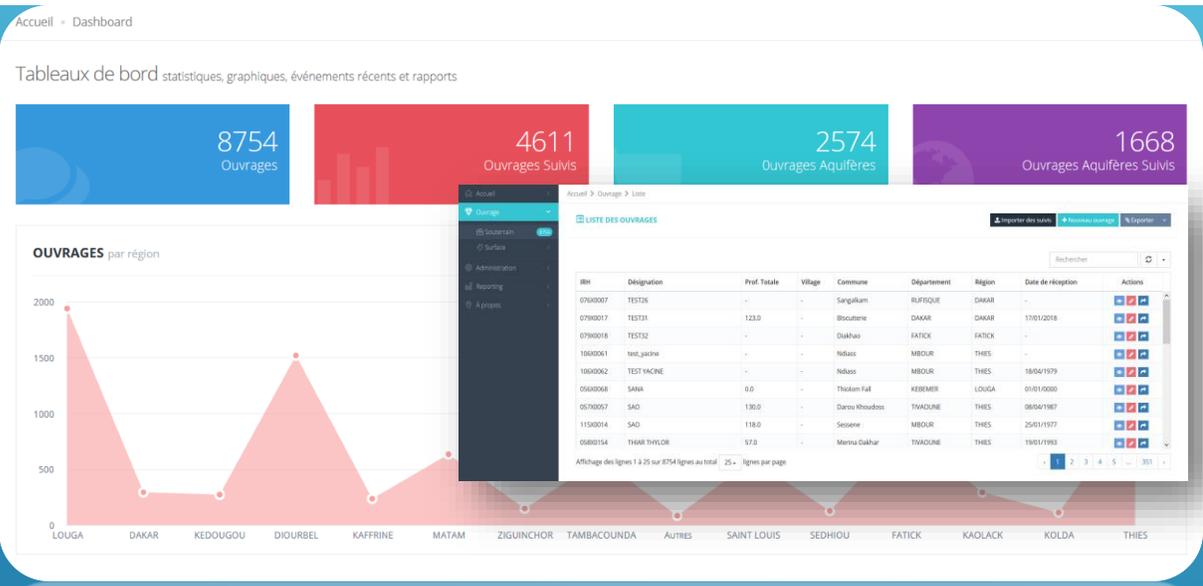


- Sector ministries
- Private sector
- Civil society
- Universities
- Donors
- Populations

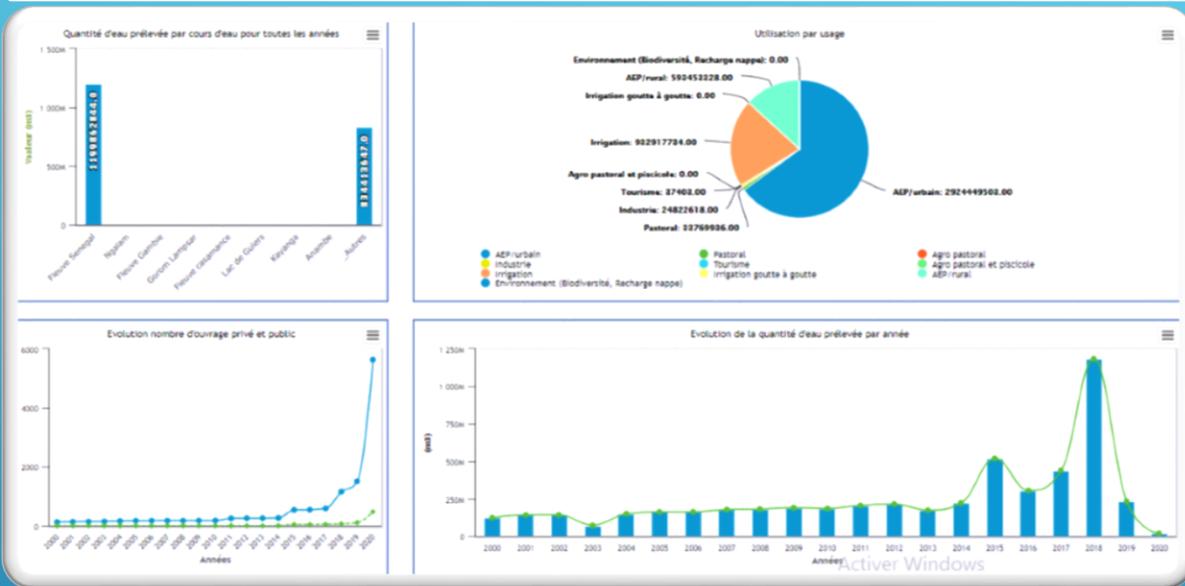
THE SOLUTIONS IMPLEMENT BY THE DGPRE

to respond effectively to the needs of decision makers involved in the process of developing and monitoring water policy

PROGRES



database of withdrawals on water resources



Data types

- ❖ Data on the catchment structure (type, coordinates, condition, depth, flow rate, strainer etc.)
- ❖ Data on the aquifer (name, roof depth, wall depth, drawdown, transmissivity etc.)
- ❖ Data on water quality (pH, conductivity, iron, nitrate, fluorine etc.)
- ❖ Socio-economic data
- ❖ Administrative data

As a back-up to PROGRES, the database makes it possible to generate statistics on the different uses of water:

- ❑ Identify the current collectors for each type of use (agricultural, domestic, livestock, industry, energy, mining, tourism, etc.);
- ❑ Quantify water withdrawals for each sector of productive activity (agricultural, industrial, mining, DWS etc.);
- ❑ Classify the level of levy by sector of activity; Map the samplers according to groundwater, waterways and uses;

THE SOLUTIONS IMPLEMENT BY THE DGPRE

to respond effectively to the needs of decision makers involved in the process of developing and monitoring water policy



With the advent of New Information and Communication Technologies (NTIC), the DGPRE Documentation Center had to adapt to the new needs of stakeholders in the water and sanitation sector in order to face the challenges.

Digital documentary database

The screenshot displays the DGPRE website interface. At the top, there's a navigation menu with options like 'CIRCULATION', 'CATALOGUE', 'AUTORITÉS', 'ÉDITIONS', 'D.S.I', and 'ADMINISTRATION'. The main content area shows search results for 'Etude des ressources en eau souterraines du Sénégal'. Below the title, there's a table with columns for 'No.', 'Code', 'Localisation', 'Section', and 'Statut'. The table lists two documents: SN-CNDEA 1896 and SN-CNDEA 3062. To the right, there's a search bar and a 'Rechercher' button. Below the search bar, there are checkboxes for search criteria like 'Auteurs', 'Titres', 'Tags', etc. The website also features a 'Centre National de Documentation sur l'Eau et l'Assainissement DGPRE' logo and contact information.

- ❑ 5,766 physical documents are on the shelves
- ❑ 1571 documents have been entered and can be viewed or downloaded depending on the user's option
- ❑ 1,727 drilling reports and over a hundred archival files

SOME WEAKNESSES OF THE CURRENT SYSTEM

No common reference

Repository and codification problem

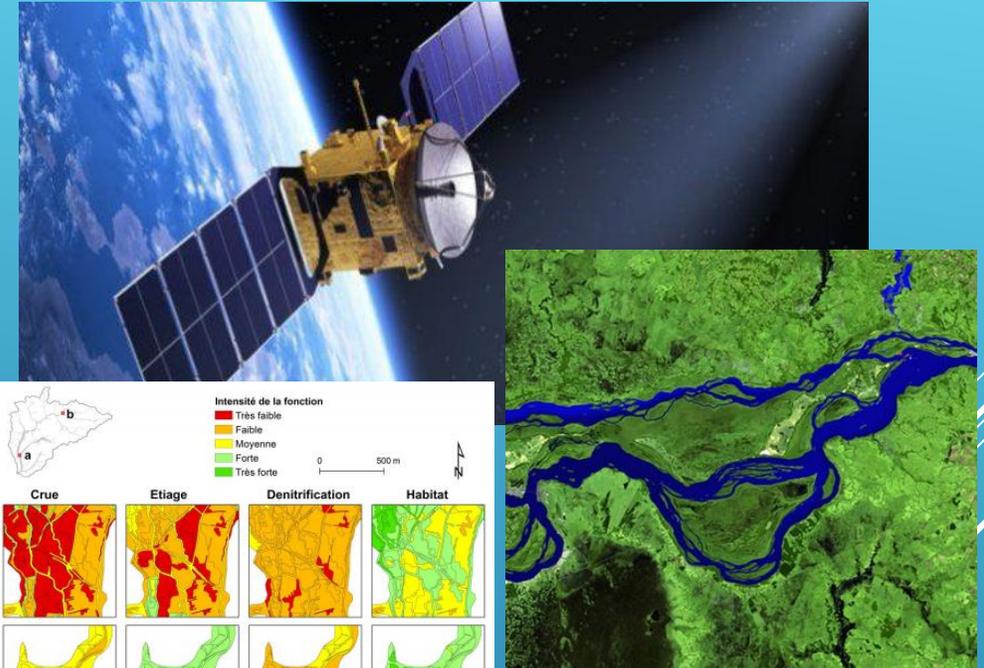
The IRH number, which must be the unique identifier for each work, is different for the same works from partner databases.

The codification of administrative entities (region, department, municipalities, etc.) varies from one data source to another. So it is impossible to make the necessary link between these different bases

Existence of several unconnected systems

The different databases are not connected and make updating data difficult

No satellite data management

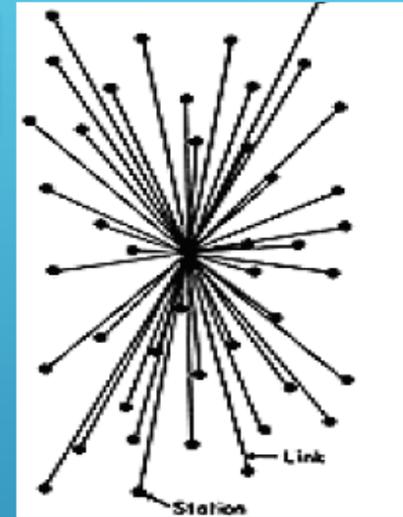
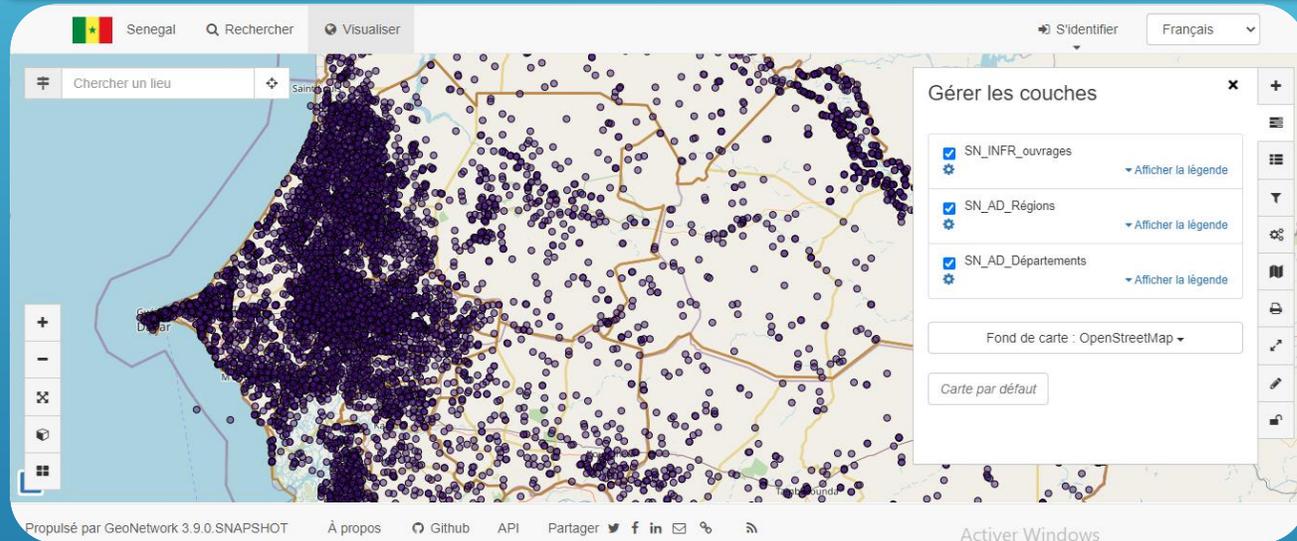


The DGPRE does not have a system management of satellite data. Data is acquired occasionally during projects and is processed by design offices

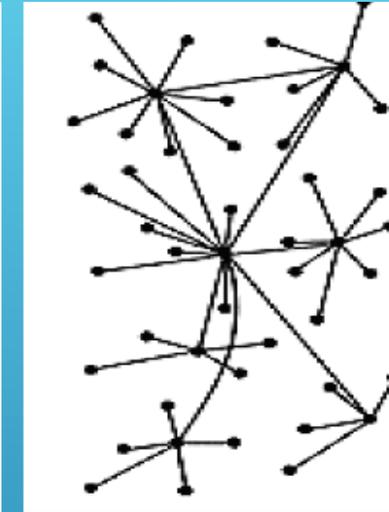
THE INTEGRATED INFORMATION SYSTEM ON WATER RESOURCES

to respond effectively to the needs of the various actors and overcome the shortcomings noted, OIEAU supports the DGPRE in the establishment of an SIRES

Système d'Information Intégrée sur les Ressources en Eau du Sénégal (SIRES)



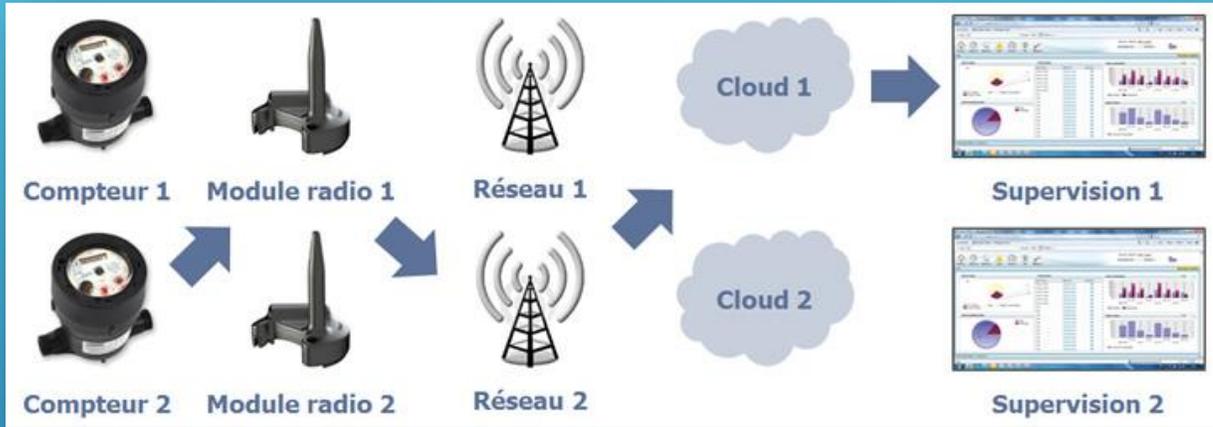
Centralized system



Decentralized system

OUTLOOK

- ❑ Pilot project with SONES in the use of smart meters



- ❑ Strengthen the data remote transmission system to monitor water table fluctuations in real time



- ❑ Strengthen the national documentation center and move towards the establishment of digital documentary networks



Thank you for your attention !!!

The image features a solid blue background with a gradient from light blue at the top to a darker blue at the bottom. In the center, the text "Thank you for your attention !!!" is written in a bold, white, sans-serif font. In the bottom right corner, there are several white diagonal lines of varying lengths and thicknesses, creating a dynamic, abstract graphic element.