Policy Brief

Productive water in Senegal

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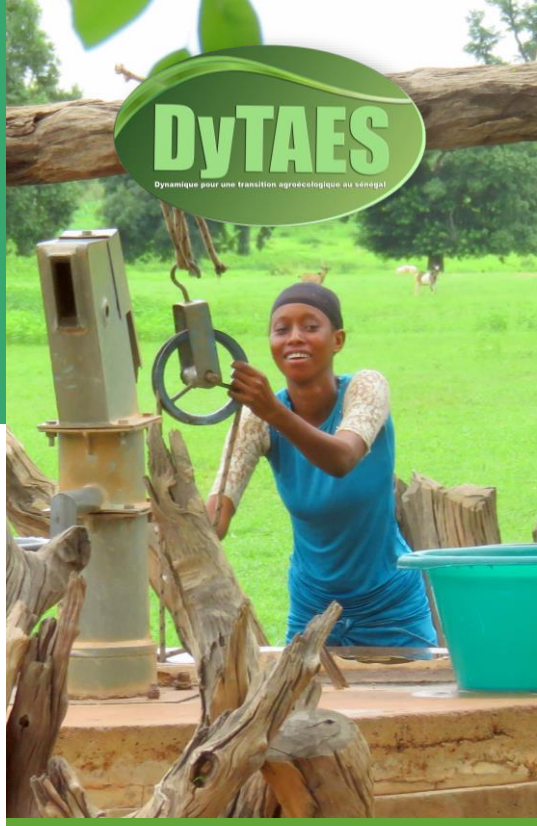

Towards equitable access and sustainable management of water by family farms

In Senegal, family farms provide more than 60% of food requirements. Today, 60% of farmers depend on limited rainfall (very short rainy season), which is becoming increasingly variable as a result of climate change. The family farms are faced with problems of access to water in sufficient quantity and quality. This is due to rainfall deficits, salinization of groundwater in some areas, development problems and poor application of the irrigated area charter.

The agroecology/productive water nexus calls for efficient use of water resources and secure access for family farms. Against a backdrop of increasing competition for water resources, more and more farmers are having restricted access and are being deprived of their historic rights to water.

Given this situation, defining a strategy for the sustainable mobilization of water resources for family farming is a priority. New water management rules need to be adopted to support family farms, while ensuring that priority is given to securing drinking water supplies for local populations.

With a view to agroecological transition, it is essential to propose technical, organizational and political conditions that secure access to water and enable the development of greater productivity in family farms.

In order to meet the challenges of food security, social equity and environmental sustainability, the Dynamics for an AgroEcological Transition in Senegal (Dynamique pour une Transition Agroécologique au Sénégal, DyTAES) is calling for active consultation between local stakeholders – producers' organizations, local authorities, NGOs and research and training institutions – on agro-ecology.

It is vital to promote concerted, fair and transparent management of water resources.

La Dynamique pour une Transition Agroécologique au Sénégal (DyTAES)

is a network of farmer organizations, consumers, NGOs, research and training institutions, local elected representatives and businesses.

From 7 February to 15 March 2022, DyTAES consulted thousands of people in 14 localities spread across Senegal's 6 eco-geographical zones.

This policy brief is a summary of the issues discussed about productive water and the recommendations made to the State and local authorities.

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Issues of access to and management of productive water in Senegal

Difficult access for family farms

Agriculture in Senegal is heavily dependent on rainfall, despite the significant potential of surface and groundwater resources.

The major constraints on access to productive water for family farms are political and technical. Insufficient resources to build the necessary facilities and the absence of collective water resource management rules (lack of shared governance) mean that users have unequal access to sufficient quality and quantity of water.

These constraints are compounded by: i) the high cost of water-efficient irrigation systems, which are often beyond the reach of family farms; ii) drainage systems that are not adapted to the capacity of boreholes; and iii) the high cost of water.

This is particularly the case in the groundnut basin, where the transfer of borehole management to leasing companies (Flex'Eau, Aquatech, etc.), as part of the water reform, has led to an increase in the price of water. In Baba Garage, for example, the high cost of water (150 to 200 francs/m3) has forced many market gardeners to reduce or stop their activities. They also complain that they are not involved in water governance, which is the sole responsibility of the state. Despite the privatization of borehole management, users are still experiencing recurring problems with water supply and losses caused by faulty water distribution networks.

In the Senegal River Valley, water is abundant but poorly distributed. Water infrastructure is inadequate to meet the needs of a steadily growing population. Irrigation canals do not reach all the farmers and stockbreeders in the area, and are often dilapidated because they are inadequately maintained.

The waters of Lac de Guiers are under serious threat from over-abstraction and pollution from pesticides and chemical fertilizers.

Widespread degradation of water resources

Throughout Senegal, agriculture and livestock farming are being penalized by the degradation of water resources. On the one hand, this phenomenon is caused by climate change (rainfall breaks and droughts are becoming increasingly frequent), leading to delays in crop and pasture growth.

On the other hand, over-pumping and the non-rational use of water (due to a lack of mastery of irrigation techniques and the absence of collective water management rules) are leading to a drop in surface and fossil water tables, reducing the access of family farms to productive water.

The proven over-exploitation of the various aquifers for various uses (drinking, agriculture, livestock farming, industry, etc.) is simultaneously leading to salinization of the deep aquifer (particularly visible in the groundnut basin and in Casamance) and a drop in groundwater levels (estimated at almost 45 cm per year for the medium and deep aquifers in the Niayes). This is leading to a loss of production and the devaluation of farmland. Farmers are forced to stop farming and sell off their plots.

Human activities are also polluting aquifers. Finally, the temperature rises expected in the coming decades as a result of climate change, together with population growth, will exacerbate these phenomena, which are sources of social tension and health and food risks.

The often irreversible degradation of water resources is a serious threat to livestock breeders and farmers in Senegal, at a time when agriculture must feed a fast-growing population. Protection and equitable distribution of productive water is necessary to make Senegal's agriculture more sustainable and successful.

DyTAES

Agroecology, a response to the challenges

Water is crucial for agriculture and for people. Sustainable, reasoned water management is therefore essential, and lies at the heart of the agro-ecological transition project.

Agroecology proposes a number of virtuous practices that apply the principles of recycling, efficiency and resilience, such as:

1. Efficient recycling and mobilization of water resources (rainwater harvesting, limiting losses in irrigation systems, recycling waste water, etc.);

2. Optimizing the use of water resources in the field (bed crops, drip irrigation systems, etc.);

3. Water conservation at plot level (covering the soil with organic matter, mulch or cover crops, practices to reduce evapotranspiration such as windbreaks, agroforestry, crop associations, etc.);

4. Protecting water from pollution (by using organic fertilizers, eliminating the use of pesticides, controlling industrial activities close to resources).

Recommendations

On the basis of the consultations carried out during the 2022 caravan, DyTAES is encouraging the Senegalese government to do everything possible to guarantee secure and sustainable access to water for family farms.

Such a commitment would contribute to the country's food and nutritional security. It would also contribute to the implementation of the Sectoral Policy Letter 2016-2025, which aims for "integrated and efficient management of water resources to sustainably meet the needs of all uses".

More specifically, DyTAES invites decision-makers to:

- **Review the overall water policy** by adopting a cross-sectoral approach involving all the ministries concerned (agriculture, livestock, environment, water and sanitation, etc.) and representatives of the various categories of users, in particular the WSS;
- **Invest in productive water** to help rural and agricultural enterprises gain full access to it and secure their rights to use it in the long term;
- **Support local stakeholders** (farmers, livestock breeders, agro-industries, etc.) towards **shared governance and integrated management of water resources** by setting up consultation frameworks backed by local authorities;
- **Adopt an approach based on resources** rather than needs, to make everyone aware of the finite nature of water resources and the political stakes involved in allocating them;
- **Promote water-saving irrigation technologies and water management practices.** This includes measures to reduce losses, allocate sources in line with needs and develop non-conventional resources such as the reuse of wastewater.

More specifically, the stakeholders in the areas consulted recommend to:

1. Promote sustainable access to water for local populations

- Assess and share data with local authorities on the level and quality of groundwater and the needs of different water users, based on water balances and maps of existing facilities;
- Install new water extraction works and hydro-agricultural facilities and refurbish old ones (wells, boreholes and mini-boreholes, perimeters), based on environmental impact and resource availability studies;
- Develop ponds, retention and infiltration basins to encourage groundwater recharge, and family and school reservoirs to collect rainwater;
- Dredge watercourses to increase the availability of water and recharge ponds;
- Take incentive measures to facilitate access by family farms to efficient irrigation systems and promote the use of clean energy in hydro-agricultural schemes (e.g. subsidies for solar and wind pumping kits, tax exemptions on solar equipment, user training, long-term low-interest loans, etc.).

2. Establish inclusive, local water governance

- Review the reform of water and rural hydraulics and provide for the delegation of power to local authorities to manage water resources;
- Promote the setting up of frameworks for consultation between users at municipal level for shared governance and integrated management of water resources;
- Strengthen mechanisms for monitoring compliance with the legal standards set out in the Water Code governing the use of water resources.

3. Promote the sustainable management of high-quality water

- Strengthen monitoring and control systems to combat water pollution from industries, agro-industries and AFEs;
- Set up new water treatment plants and redistribute water to agricultural areas;
- Install anti-salt dykes and other devices to give users access to quality water for agriculture and livestock in saline areas;
- Train producers in irrigation techniques and water-saving farming practices (mulching, composting, planting of trees on production sites, watering times);
- Promote alternative and sustainable agroecological techniques to reduce the use of pesticides and improve water and soil quality;
- Strengthen the capacities of irrigators' organisations so that they are able to monitor, maintain and pay off works over time, with a view to improving water management and the maintenance of irrigated areas;
- Train pupils in water-saving management as part of school gardens.

Sources:

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- *Banque Mondiale, 2022, Sécurité de l'Eau au Sénégal: Sommaire Executif.*