Policy Brief

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Agricultural reform, jobs and reduction of poverty in Niger

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Key messages

Improving the use of surface water for agricultural purposes would contribute to achieving the 3N Initiative's "Zero Hunger" objective through:

- Increasing production, and therefore the availability of agricultural produce at the local level
- Job creation and increasing incomes
- Ensuring greater access to agricultural products for poor households

Rethinking the use of agricultural water

The recurring food crises in Niger are due to the high dependence of the agricultural sector on rainfall, despite the potential of other available resources in terms of agricultural water. It is expected that better use of this water can encourage the agricultureal development and, consequently, food security.

However, to rationalize resources, the "type of water"—surface or ground water—whose development would generate the most significant results or impacts must first be identified.

A team of local researchers therefore sought to contribute evidence regarding the objectives pursued by decision-makers in the context of agricultural reforms and, more specifically, the strategy of the 3N Initiative ("Nigeriens nourishing Nigeriens").

The analysis

The researchers have a Dynamic Computable General Equilibrium Model (CGEM), calibrated using the 2014 Social Accounting Matrix (SAM) from the National Institute of Statistics (INS). The latter was modified to integrate an "agricultural water production" sector.

As an analytical tool, the advantage of the CGEM is that it allows simulations to be carried out that take into account the relationships between different sectors of the economy. The "dynamics" introduced into the model, in the case of this study, are justified by the fact that the effects of investments occur over the long term. Finally, a "micro-simulated" analysis was introduced to assess the impact of reforms on household living conditions.

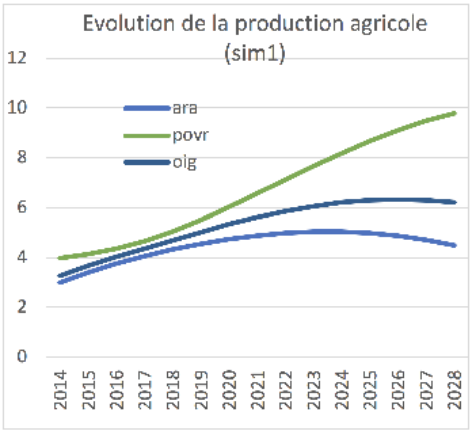
The team used the model to simulate two scenarios: an increase in production of 1) agricultural surface water and 2) agricultural ground water.

In both cases, the effects were measured to assess the impact of each scenario on: (i) agricultural production; (ii) employment and (iii) poverty.

Key findings

In general, the results obtained from these simulations show that an increase in the production of agricultural water has **positive effects on production, employment and income**. However, the most significant results are observed following an increase in the **availability of surface water**.

Differences in agricultural production evolution under each scenario



Scenario 1

Increasing investment in surface water availability by 30% by 2029

Results in increased:

- agricultural **production**, and in particular that of the main **food crops**, including:
  - rice 13% - millet 8% - cowpea 9% - sorghum 7%
- **agricultural household incomes**
  - 14.6% increase by 2028

Scenario 2

Increasing investment in groundwater availability by 30% by 2029

Results in increased:

- **production of market and cash crops**, including:
  - pepper 10% - onion 7% - peanut 4.9%
- **incomes of self-employed non-agricultural workers** - 14.3% increase by 2028

For both scenarios:

- Increased production is only possible with the availability of capital and labour. As such, **the demand for labour increases in the most intensive sectors**.
- In the non-agricultural sectors, wage rates rise slightly due to the scarcity of labour.
- The number of people living below the food poverty line decreases by 6%.

Policy recommendations

In pursuit of the 3N initiative's Zero Hunger objective, the Nigerien authorities should **prioritize policies that invest in mobilizing surface water.**

As well as ensuring large-scale irrigation—by increasing the use of a resource for which Niger has a very strong potential—this would also reduce the country's vulnerability to climate hazards, food crises and other shocks.

This policy focus is, of course, dependent on the availability of funding to cover this type of investment, for example, the construction of dams, reservoirs, or other infrastructure for holding surface water.

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