

## Evidences

### Study #3313

**Projects:**

- P1610

**Part I: Public communications**

**Type:** OICR: Outcome Impact Case Report

**Status:** New

**Year:** 2019

**Tagged as:** New Outcome/Impact Case

**Title:** Use of CIS in Senegal led to 10-25% increases in household income, whilst improving action planning of national and local stakeholders

**Short outcome/impact statement:**

In 2015, a study showed that the development of CIS in Senegal by ANACIM, CCAFS and their partners, led to seasonal forecasts transmitted nationwide (82 community radio stations, SMS) and allowed an estimated 7 million rural dwellers to access CIS. A multidimensional evaluation (2017-2019, 596 households, 44 stakeholders) demonstrated 75% of farmers interviewed use CIS, while access to Multidisciplinary-Working-Groups with use of CIS leads to increased income by about 10-25%. One-hundred-sixty-one stakeholders were involved in CIS development, transmission or use, leading to systemic transformations including emergence, ownership and empowerment of multiple actors across the country.

## **Outcome story for communications use:**

In 2011, CCAFS scientists started a collaboration with ANACIM which aimed to: 1) develop downscaled CIS; 2) enhance the capacity of partners who were tasked to communicate CI to farmers; and 3) enhance the transmission of CI and agricultural advice to farmers. They set up national and local multidisciplinary working groups (MWGs) to facilitate CIS development, contextual appropriateness, interpretation, dissemination and uptake. CI has been since disseminated through multiple channels combined with recommendations to guide decision-making of different users. A quantitative impact evaluation was carried out at the household level, through a stratified random sample of farming households from the provinces of Kaffrine and Kaolack (1) in 2017 (795) and 2019 (596) in order to assess the impact of farmers' uptake of CIS on agricultural productivity and household incomes, with particular focus on the effectiveness of the MWG co-production model. The results show that a household that had access to the MWG and used any of the forecasts (onset, amount and rainfall or cessation) to inform farm management decisions, experienced a 10.6% increase in crop income compared to a household that either did not use CIS or had no access to the MWG. When taking into account rainfall and temperature data, the impact of use of seasonal forecasts with MWG is almost double (20.7%). These findings are supported by results of focus groups with farming households which show that the use of seasonal and ten-day forecasts appear to improve the cropping plan: land preparation, crop variety choice, planting dates, harvesting, and conservation decisions.

The evaluation further assessed the scaling of CIS which highlighted a three-phase process (2): 1) foundations, 2) consolidation of ANACIM, and 3) investment in scaling supported by favourable national and international context. One-hundred-sixty-one stakeholders (15 types, e.g. government agencies, NGOs, producer organisations, community radios, journalists) were involved in this process, which was characterised by five axes of systemic transformation: 1) continuous improvement of the WCIS; 2) emergence and consolidation of actors who facilitate the dissemination and use of WCIS; 3) ownership of WCIS by different actors; 4) active mobilisation of other actors to sustain the process; and 5) empowerment of actors. Research for development projects contributed through quality WCIS, knowledge sharing and action platforms, interaction opportunities, and capacity strengthening. Contextual factors including enabling policy environment, funding, and international interest contributed to these transformations. Ultimately, CIS and the MWGs not only supported farmer's income but also enabled multiple national and local level stakeholders to better plan and coordinate their actions, making the overall system more resilient.

## **Links to any communications materials relating to this outcome:**

### **Part II: CGIAR system level reporting**

**Link to Common Results Reporting Indicator of Policies :** Yes

#### **Policies contribution:**

- 467 - Systematic use of Climate Information (CI) for developing strategies and planning policies in Senegal (Ministry of Agriculture, Directorate of Water Resources Management and Planning, Civil Protection Department)

**Level of maturity of change reported:** Level 3

## Links to the Strategic Results Framework:

Sub-IDs:

- Enabled environment for climate resilience
- Increased household capacity to cope with shocks
- Increase capacity of beneficiaries to adopt research outputs

Is this OICR linked to some SRF 2022/2030 target?: Yes

SRF 2022/2030 targets:

- # of people, of which 50% are women, assisted to exit poverty

Comment: YIELDS: The quantitative analysis confirms that the use of CIS impacts production choices and has positive consequences on yields and income, particularly when mediated through the presence of the MWG, which increases access to information sources. On average, farmers using forecasts appear to obtain approx. 680kg/ha for peanuts vs. 530kg/ha for non users. On average and depending on the functional forms used for the models, for rainfall and temperature, we find that the use of seasonal and daily forecasts increased average incomes by between 10-25% for farmers with access to the MWG.

## Geographic scope:

- National
- Sub-national

Country(ies):

- Senegal

Comments: The quantitative household level impact evaluation (counterfactual) focused on the Kaffrine and Kaolack regions. The scaling evaluation (Outcome Harvesting) was carried out with national and local (Kaffrine, Kaolack, Bambey) stakeholders.

## Key Contributors:

Contributing CRPs/Platforms: <Not Defined>

Contributing Flagships:

- FP4: Climate services and safety nets

Contributing Regional programs:

- WA: West Africa

Contributing external partners:

- ANACIM - National Agency of Civil Aviation and Meteorology

## CGIAR innovation(s) or findings that have resulted in this outcome or impact:

Contextually appropriate Weather and Climate Information Services, Multidisciplinary Working Groups

**Innovations:** <Not Defined>

### **Elaboration of Outcome/Impact Statement:**

In 2011, CCAFS scientists started a collaboration with ANACIM which aimed to: 1) develop downscaled CIS; 2) enhance the capacity of partners who were tasked to communicate CI to farmers; and 3) enhance the transmission of CI and agricultural advice to farmers. They set up national and local multidisciplinary working groups (MWGs) to facilitate CIS development, contextual appropriateness, interpretation, dissemination and uptake. CI has been since disseminated through multiple channels combined with recommendations to guide decision-making of different users. A quantitative impact evaluation was carried out at the household level, through a stratified random sample of farming households from the provinces of Kaffrine and Kaolack (1) in 2017 (795) and 2019 (596) in order to assess the impact of farmers' uptake of CIS on agricultural productivity and household incomes, with particular focus on the effectiveness of the MWG co-production model. The results show that a household that had access to the MWG and used any of the forecasts (onset, amount and rainfall or cessation) to inform farm management decisions, experienced a 10.6% increase in crop income compared to a household that either did not use CIS or had no access to the MWG. When taking into account rainfall and temperature data, the impact of use of seasonal forecasts with MWG is almost double (20.7%). These findings are supported by results of focus groups with farming households which show that the use of seasonal and ten-day forecasts appear to improve the cropping plan: land preparation, crop variety choice, planting dates, harvesting, and conservation decisions. The Ministry of Agriculture in Senegal is now using climate information in planning agricultural policies.

### **References cited:**

1. Chiputwa et al. 2020. Dynamic Uptake of CIS Use and Impacts on Agricultural Productivity and Incomes: Does co-production make a difference?. Under submission to Agricultural Systems <https://hdl.handle.net/10568/108054>
2. Blundo et al. 2020. Scaling Weather and Climate Services for agriculture: evaluating systemic but overlooked effects. Submitted to Climate Services <https://hdl.handle.net/10568/108053>

## Quantification:

**Type of quantification:** a) Actual counts or estimates from a particular study (please provide reference)

**Number:** 75.00

**Unit:** %

**Comments:** 448 out of 596 (75%) households interviewed use forecasts

**Type of quantification:** a) Actual counts or estimates from a particular study (please provide reference)

**Number:** 10.00

**Unit:** percentage

**Comments:** Estimated income increase by 10% to 25% for CI users

**Type of quantification:** a) Actual counts or estimates from a particular study (please provide reference)

**Number:** 161.00

**Unit:** stakeholders

**Comments:** 161 actors involved in WCIS development, transmission and use

**Type of quantification:** a) Actual counts or estimates from a particular study (please provide reference)

**Number:** 26.00

**Unit:** outcomes

**Comments:** 26 outcomes harvested, of which 18 are changes in practices, followed by changes in interactions (7) and one ad hoc action. For 18 outcomes, the contribution of CCAFS related projects to the outcome was direct, for the remaining 8, it was a trigger that allowed change to emerge later

## **Gender, Youth, Capacity Development and Climate Change:**

**Gender relevance:** 0 - Not Targeted

**Youth relevance:** 0 - Not Targeted

**CapDev relevance:** 2 - Principal

Main achievements with specific **CapDev** relevance: Farmers are able to interpret and use forecasts in their decisions, also supported by other actors including departmental plant protection, livestock and extension services, and with the recommendations received through radios and bulletins.

Radio speakers and journalists across the country (URAC, REJAQUES) are able to better transmit the CI to their audience thanks to capacity building. They now make it easier for farmers to understand CI through improved transmission.

Members of the MWGs have been able to improve the planning of their activities and trained farmer promoters in charge of disseminating CI to farmers, improving targeting and coverage of service.

**Climate Change relevance:** 1 - Significant

Describe main achievements with specific **Climate Change** relevance: The agricultural sector in Senegal is one of the most vulnerable to climate change in the region: the work related to weather and climate services supports long-term planning based to help reduce risks posed by climate variability. Seasonal forecasts in particular are an important input for the decisions of farmers concerning their crop calendar and management, but they are also an input for national and local actors taking preventive measures and better planning and coordinating their actions.

**Other cross-cutting dimensions:** NA

**Other cross-cutting dimensions description:** <Not Defined>

**Outcome Impact Case Report link:** [Study #3313](#)

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