

## MALI

### Accelerating agricultural growth and family farming

A **40-60% increase in farmers' incomes** was recorded from cultivation of improved varieties of pearl millet, sorghum and groundnut. About 637 tons of different classes of seed were produced for the said crops. Growing use of satellite imagery technology saw Mali being registered as **one of the three worldwide Sentinel 2-Agriculture country pilots** alongside Ukraine and South Africa. Awareness was raised on climate-smart technologies and aflatoxin prevention methods.



Young agricultural technicians of MyAgro visit “Soubatimi”, multipurpose sweet sorghum variety seed production plot in off season. Photo: A Diama, ICRISAT

### Increase in crop productivity

#### Millet and sorghum

- **47,914 hectares under improved technologies** (high yielding varieties, best agronomic practices including integrated *Striga* and soil fertility management).

#### Impact:

- **Average 60% increase in grain yield** of improved pearl millet and sorghum varieties compared to local checks in target zones;
- **US\$ 246 estimated net benefit** per hectare from application of Integrated *Striga* and Soil Fertility Management (ISSFM) strategy with microdosing technique;
- **US\$ 202 net benefit** per hectare from application of the technique of mixture of fertilizers and seed (1/1). It is the most economical and profitable method for pearl millet production.

“Economic analysis of micro-dosing treatments for cereal production systems in Mali”, Progress report, ICRISAT 2017, 7p

## Groundnut

- **3,633 hectares under improved varieties** in Mopti, Sikasso, Kayes and Koulikoro regions.

### Impact:

- **Average 42% increase in gross income for households** using improved varieties.

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## Benefits of satellite imagery technology



*Sen2-Agri National Stakeholders Consultation Meeting at Bamako, Mali. Photo: ICRISAT*

## Achievements

- **>200% increase** in the number of plots amenable to earth observation monitoring;
- **Countrywide 10-meter cropland, crop type and crop condition map products are available;**
- Mali registered as **one of the three worldwide Sentinel 2-Agriculture country pilots** alongside Ukraine and South Africa.

This was achieved by building on the experience, partnerships and legacy from the Bill & Melinda Gates Foundation-funded [STARS project \(Spurring a Transformation for Agriculture through Remote Sensing 2014-2016\)](#).

## Uses of Sentinel-2 Agriculture

- Improving agricultural statistics;
- Enhancing yield forecasts;
- Scaling agricultural insurance in close partnership with the national agricultural agency.

<https://ccafs.cgiar.org/blog/satellite-imagery-technology-better-agricultural-practices-mali#.WpRQV2ZF124>

<http://www.copernicus.eu/projects/nadira>

## Awareness on aflatoxin

### Demonstrations on groundnut crop management

- **116** demonstrations on aflatoxin management;
- **121** on integrated crop management practices.

### Sensitization through media on the effect of aflatoxin on human health

- **11,065 value chain actors reached** (8,489: Female; 2,576: Male).

### Field days

- **8,479 farmers** (Female: 6,678; Male: 1,801) participated in field days to enhance their knowledge on integrated crop management, aflatoxin management and seed production techniques.

### Awareness campaigns (broadcasts and printed material)

- **762,738 households were reached** through 12 radio broadcasts on groundnut production and aflatoxin management in the four project regions. One TV program was broadcast and 8,272 flyers, 2,100 brochures and 15 posters were distributed.

## Mechanization

- **25 groundnut motorized shelling machines** were distributed to the project partners.

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## Seed systems

### Millet and sorghum

- **48 tons of certified seed distributed** to disseminate improved varieties through Farmer Field Schools and demonstration plots in Sikasso Region;
- **323 tons produced by seed producers** under Africa RISING's large-scale Diffusion of Technologies for Sorghum and Millet Systems (*ARDT-SMS*) project supervision.

#### Impact:

- High rate of farmers (female 95%; male 98%) used improved seed delivery channels (both mini-packs and agro-dealers) in Sikasso and Mopti regions.

### Groundnut

- **Quantity of different classes of seed produced in Mali**

**7.9 tons:** Breeder Seed

**32.9 tons:** Foundation Seed

**272.5 tons:** Certified Seeds

- **19 seed fair programs** were organized in Mopti, Sikasso, Kayes and Koulikoro regions to link community-based seed producers and seed companies to market;
- **9,457 farmers reached** (Female: 7,788; Male: 1,669) reached with improved varieties in Mopti, Sikasso, Kayes and Koulikoro.

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## Promising cultivars

### Sorghum hybrids with high grain yield

- **122 new hybrids were tested** during rainy season 2017 with 30 farmers from 9 villages, belonging to 3 different agro-ecological zones in Mali.

#### Out of them, 15 new hybrids exhibited:

- 1.5-2.1 tons /ha of grain yield in the on-farm trials across all environments;
- Yielded 27-75% and 52-111% higher than the best released hybrid *Fadda* and local check *Tieble* respectively in the on-farm trials;
- Recorded better preference for combined plant architecture, grain aspect and grain yield potential (58-78%) compared to *Fadda* (49%).
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2017 BMZ-heterosis project report submitted to BMZ: Bringing the benefits of heterosis to small-holder sorghum and pearl millet farmers in West Africa: Establishing a solid foundation for hybrid development. 9p.

### 10 best-bet groundnut varieties in the final stage of testing

- High-yielding best-bet groundnut varieties with tolerance/resistance to drought, foliar diseases (rosette, leaf spots) and aflatoxin are in the final stage of testing for evaluation and release in 2018-2019;

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## Climate Smart Approaches

Under a collaborative project with Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) **a series of demonstration fields of Climate Smart Agriculture (CSA) practices were established.**

### Zai and half-moon, high quality organic fertilizer and microdosing techniques:

- **13,595 farmers** (22% women) were beneficiaries of training and advisory services of the promoted techniques.

### Dissemination of weather information:

- **5,000 farmers** were introduced to the use of seasonal and daily forecasts in the implementation of their agricultural activities;
- A **manual on the use of climate information** in Mali, especially for extension and NGO workers, for better supporting farmers in their daily activities was produced and disseminated.

**Further reading:**

[Traore Bouba, Birhanu Zemadim and Ouedraogo Mathieu \(2017\). Farms of the Future: a climate twinning project in Mali. RIC4REC. pp. 1-2.](#)

[Bagayoko, M, Traore Bouba and Birhanu Zemadim \(2017\). Malian women lead by example in climate resilient farming. RIC4REC. pp. 1-2.](#)