



## WATER SMART AGRICULTURE IN MALI

### Overview

Water Smart Agriculture (WaSA) was introduced to Mali in 2016, as an approach to use water effectively and equitably to reduce climate hazards, such as flooding, and enhance farmer resilience. WaSA is not a new concept in terms of techniques. It draws from water related interventions, particularly Climate Smart Agriculture, sustainable agriculture and conservation agriculture. However, WaSA draws attention to: increasing the soil's capacity to absorb and store moisture (green water), rainwater water harvesting and storage, wastewater re-use, and supplementary small-scale irrigation. In Mali, WaSA's aim was to improve capacity of smallholder farmers by increasing climate resiliency through soil restoration and production practices that allow producers to adapt to the adverse effects of climate change, or uncertain rainfall. WaSA specifically included a focus on women who face lack of access to land, water, productive assets, and extension services. Through capacity building efforts WaSA has reached more than 12,000 smallholder farmers, of those 10,548 were women, across 100 communities (16 communities for WaSA project and 84 for Nyeleni project). At the WaSA project 8,291 smallholder farmers (including 7,804 women) and at the Nyeleni project level 3,709 smallholder farmers (including 2,744 women).



**18% increase  
in income for  
WaSA farmers**

**38% less water  
needed  
for crops**



**10,000+**  
Women reached

## Women in Agriculture

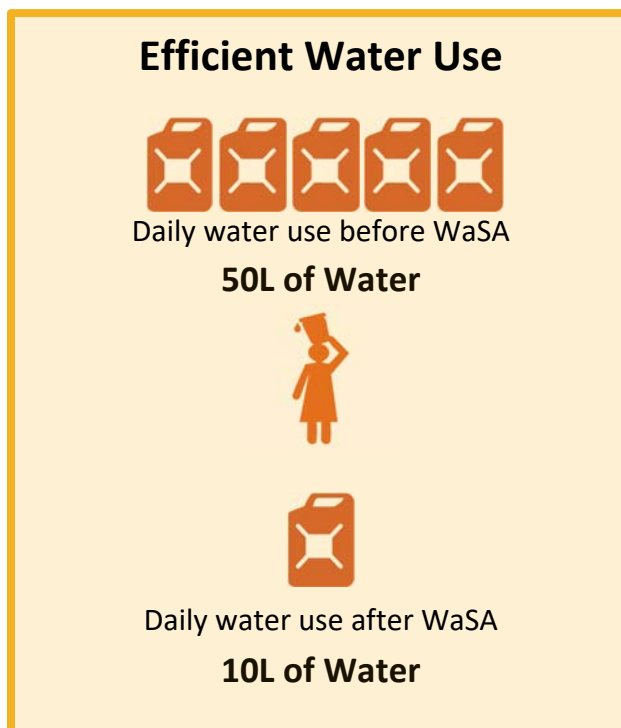
WaSA includes a specific focus on women farmers who, in Central Mali, only have access to 10% of the productive land. By focusing on the needs of women and engaging local chiefs through community dialogues, CARE Mali helped increase access to land and seeds for women farmers. In many areas however, local chiefs provided women with degraded land that was not being utilized. Women farmers, incorporating WaSA practices for soil moisture retention and erosion control, **restored 91 hectares of degraded land**, the equivalent of 76 soccer fields. The techniques adopted by farmers in Mali allowed farmers to produce crops twice a year instead of just once. The increase in production also had economic benefits that increased agricultural incomes by 18% among WaSA farmers.

### Women Producers

Women farmers understood the importance and potential benefits of WaSA and were quicker to adopt them than men. Women were more enthusiastic of the benefits of WaSA when compared to men, because watering time was reduced by half. Traditional farming methods require 25 liters of water twice a day, but with the mulching technique the amount of water for watering the 9 m<sup>2</sup> shallot plot was 10 liters of water once per day.

### Women in the Community

Unique to WaSA were gender dialogue sessions at the community level that challenged attitudes and perceptions of gender roles by bringing women into the conversation and giving them a voice. WaSA also identified “Male Champions” through a training designed for men and young boys to help promote gender equality. Farmers in communities where women gained new access to land saw a change in local attitudes towards women as result of the program. WaSA encouraged more women to join community meetings and to actively participate in the decision-making process. More men now recognize that improved conditions for women benefit the entire family. Additionally, community members who saw women have successful crop yields became interested in WaSA practices that would help restore the quality of their soil. Sixteen communities incorporated WaSA activities into their Community Economic and Cultural Social Development Plans.



*“The application of these techniques has allowed us to significantly reduce the amount of irrigation water. Previously, we watered our plots morning and evening, but with these techniques, we water once a day or often every other day.”*

*– Mala Kéné, age 49*

## Farmers at the Center of Learning

WaSA places farmers at the center of the learning process through demonstration plots. Demonstration plots serve as a protective learning environment where farmers are able to learn new techniques, that have higher yields, without risking their livelihood. To date, CARE Mali and partners, have helped Community Based Trainers and producer groups establish a total of 54 demonstration plots.

In the first year, WaSA practices showed increased yields and profits over traditional farmer practices for shallots and amaranthus. For shallot production at N'garbabougou, in the Ségou region, net income for mulching practice was more than 4 times that from traditional practices. Farmers also saw the shelf life of shallots increase from just a few months to up to one year, resulting from adopting WaSA techniques.

Farmers in Mali who successfully adopted WaSA practices and increased production yields and income led to an increase in food diversification and nutrition for their households. Higher yields and longer shelf lives of nutritionally rich crops like beans and peanuts allow farmers to have nutrient rich food available during the dry season.

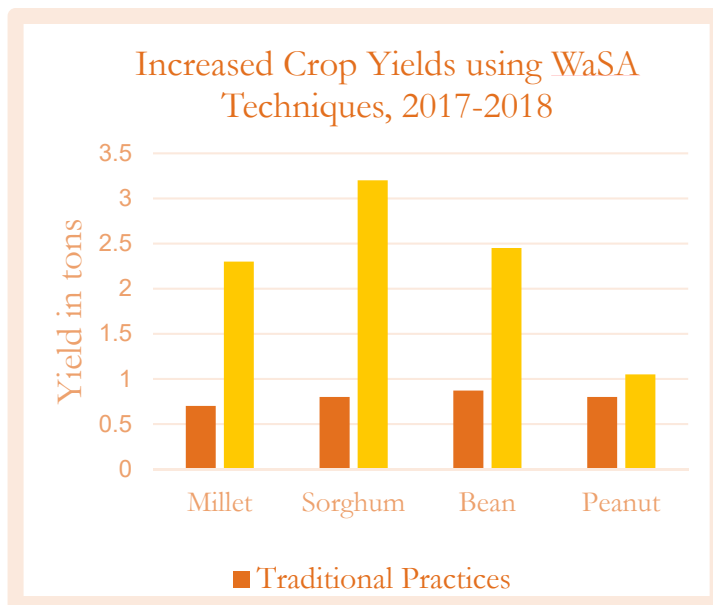
### Partnerships and sustainability

Regional partnerships with leaders allowed CARE Mali to launch a radio program highlighting WaSA practices, in order to influence additional smallholder farmers. The radio show was broadcast by two district stations with an estimated reach of over 60,000 listeners.

A key part of WaSA's success has been the development of extension systems and community-based trainers, who have adopted WaSA training modules, scaling up the potential impact to additional farmers. CARE Mali facilitated WaSA trainings for 680 individuals.

The team also trained a total of 12,000 smallholder farmers in WaSA practices, including cereal and market gardening, soil restoration, reforestation, and reading and interpretation of rainfall data.

To ensure sustainability and enable scale up, the program worked with government officials, agricultural extension workers, local organizations, and local communities to install a community support network. The program trained community workers on CARE's farmer field business school approach (FFBS) and agricultural technical services on the new production practices. This allowed for ongoing support to farmers. In this model, community workers continuously provide training to village savings and loans groups and other producers in their village, while the local agriculture department



offers support and supervision. The local agriculture department has also integrated WaSA practices into its policies and practices for extension services. At the municipal level, elected representatives have integrated WaSA farming practices into their Economic Social Development and Culture Programs, helping ensure the institutionalization of these practices. With additional funding from CARE's Scale by Design initiative, the project trained 300 extension workers and formed a cooperative company to enable the large-scale dissemination of sustainable farming practices.

## WaSA's Impact at a Glance



### Increased yields

Yield of shallot increased from 30 tons/ha using traditional practices to 50 tons/ha with WaSA practices



**4x more income** from shallot production using the mulching practice versus traditional practices at N'garbabougou



### Improved quality and shelf-life

Shallots resulting from WaSA practices can be kept for a longer period (1 year) than those from traditional practices (which last for a maximum of 1-3 months)



### Dietary diversification

Consumption of amaranth, which is very rich in iron, for pregnant women and children under 5 years



### Decreased water use and working time for women

With mulching, watering needs for vegetable plots decrease from 50 L per day to 10 L per day



**91 ha of degraded land restored** by incorporation of WaSA practices for soil moisture retention and erosion control



**56 demonstration plots** established modeling WaSA practices within multiple key value chains