

# IMPACT OF SUSTAINABLE AGRICULTURAL LAND MANAGEMENT PRACTICES ON SMALLHOLDER FARM PRODUCTIVITY AND LIVELIHOOD

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## 1. Kenya Agricultural Carbon Project (KACP)

The first agricultural soil organic and biomass carbon sequestration project in Africa (Fig. 1) with the objectives to:

- Provide advisory services to smallholder farmers
- Restore agricultural production to increase farm productivity and diversify food sources
- Increase farmer resilience to climate change
- Contribute to greenhouse gas emission reduction
- Sell emission reductions on the voluntary carbon market



Fig. 1. The KACP project has been piloted since 2009 in two areas in Western Kenya. The region has a bimodal rainfall pattern with two cropping seasons

## 2. Project set up

Advisory services on:

Sustainable agricultural land management practices, e.g. reduced tillage, mulching, composting, manure and fertilizer application, water harvesting, terracing, tree planting

Farm enterprise development, e.g. form farmer groups to buy inputs and collectively produce for sale

Village saving and loaning, e.g. saving in a group and get access to microcredits

## 3. Monitoring and evaluation

1. Monitoring done by staff on 100 project farms per area, in total 200 farms
2. Control farms were selected in the same locations, in total 160 farms
3. Farmer based monitoring done on all farms, aggregated at group level and compared with the 200+160 farms.

The results presented here come from 1 and 2.

## 4. Results

From 2009 to 2012, the project recruited 26,535 farmers within 1,555 farmer groups

It targets to reach 60,000 farmers within 3,000 groups by end of 2014.

Adoption and effects of project implementation on farm productivity and livelihood have been evaluated.



The two annual maize yields were 50% (yield 1; Fig. 2) and 30% (yield 2) higher on the KACP farms than the controls.

Compared to the baseline 2009, yields were higher 2010-2012 also on the control farms showing the importance of including controls in addition to a baseline.

The on-farm food sufficiency is higher on the KACP farms than the controls (Fig. 3).

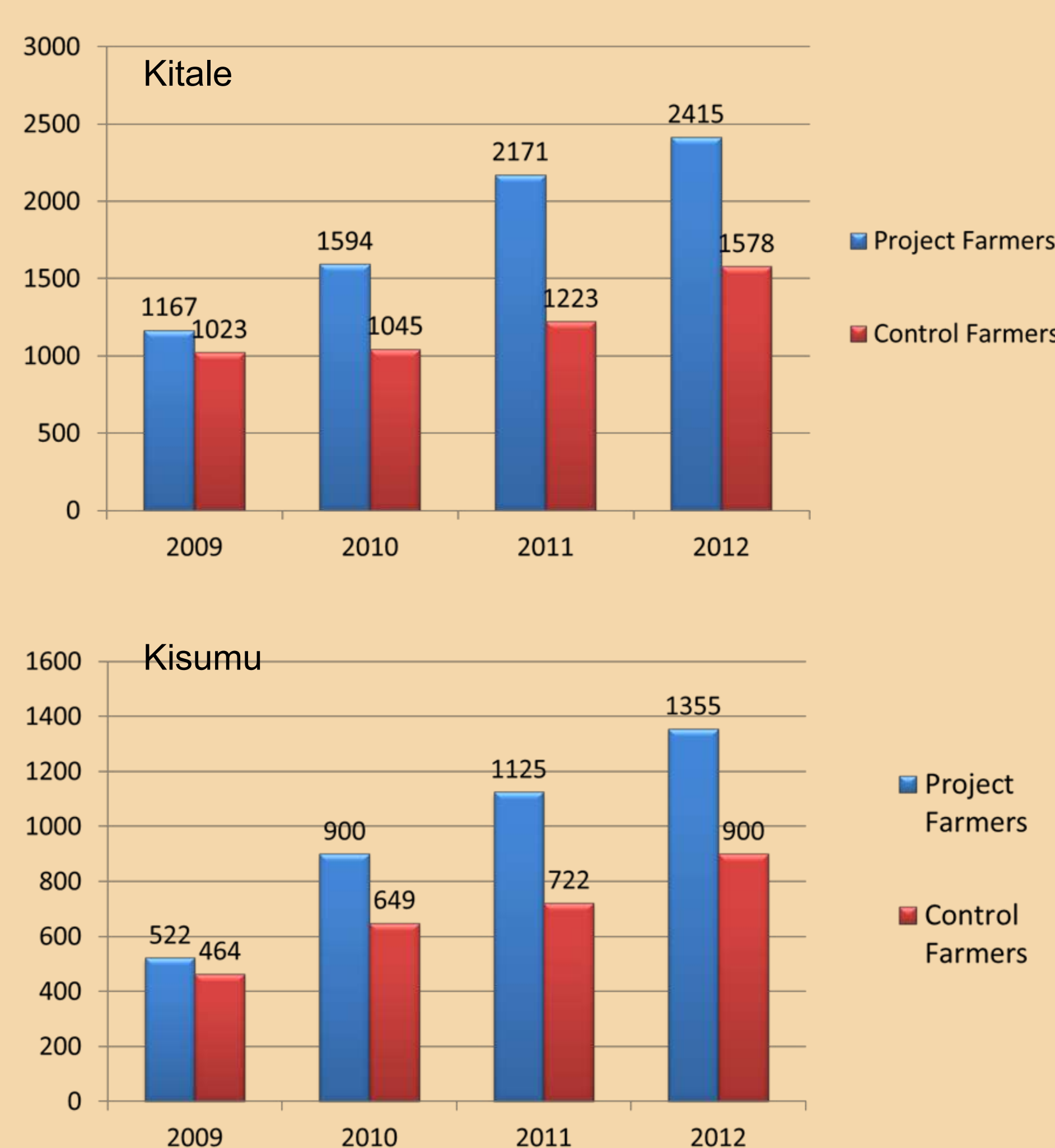


Fig. 2. The maize yield (kg/ha) of the first annual harvests on project (blue) and control (red) farms in the Kitale and Kisumu areas.

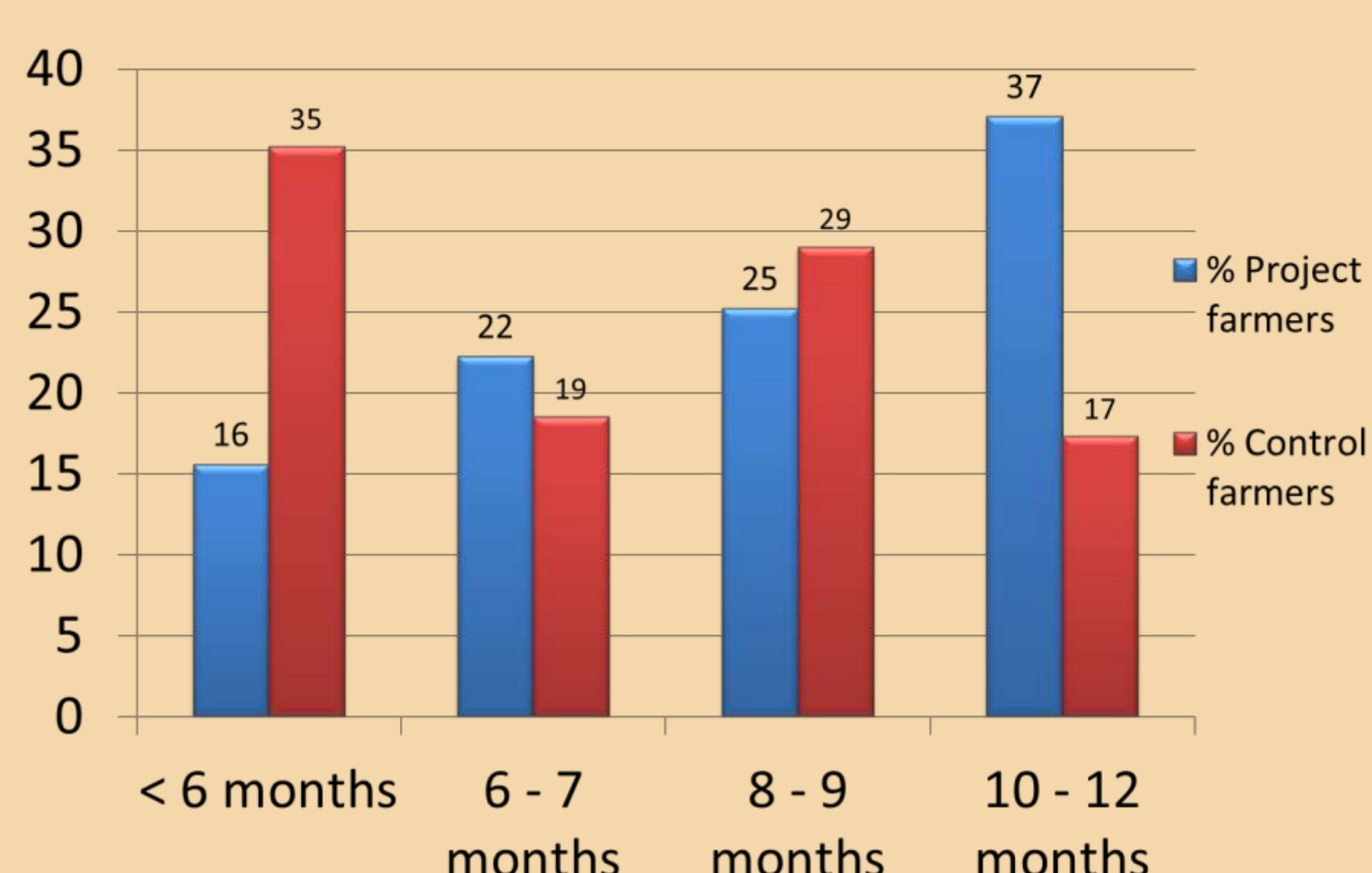
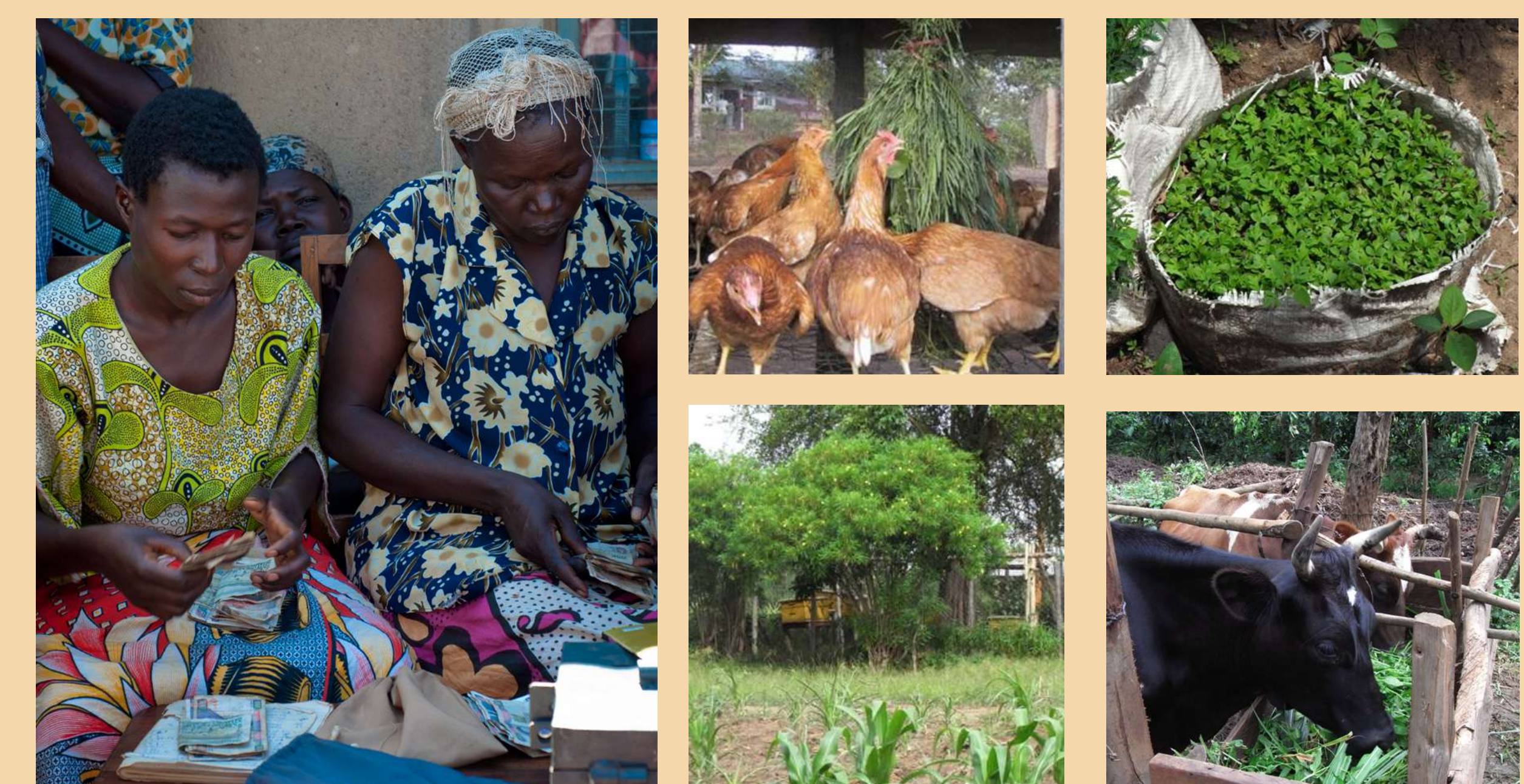


Fig. 3. On-farm food sufficiency for the KACP farms (blue) and the control farms (red).



The savings have increased, and after 3 years 73% of the KACP farmers were saving 3-5 USD per month compared to 44% of the controls.

## 5. Lessons learnt

Farmers and farmer groups benefitted in several ways from taking part in the KACP project. Their change in practices;

- Improved the agricultural productivity and livelihood
- Enhanced food security and climate resilience
- Reduced carbon emission and farmers received payment for that in 2013

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