



PPP Project Final Report 2018

The PPP-projects that have been established under the direction of the top sectors and will be completed before 1 March 2019 must submit a technical and financial final report. This format is to be used for the technical final report.

The report will be published on the websites of the TKIs/top sector, excluding the blocks 'Approval coordinator/consortium' and 'Changes to the original project plan' . Please ensure that no confidential matters are left in the remaining blocks.

The reports must be submitted before 15 February 2019 to Hans van der Kolk

General information	
PPP number	TKI-AF-16060
Title	Sesame Open: Unlocking the potential of organic sesame
Theme	
Executive knowledge institution(s)	Wageningen Food & Biobased research
Research project leader (name + e-mail address)	Theo Verkleij theo.verkleij@wur.nl
Coordinator (on behalf of private parties)	Karst Kooistra, Tradin Organic Agriculture B.V.
Government contact person	Cor Wever
Total project size (k€)	840 k€
Address project website	-
Start date	January 1, 2017
End date	March 1, 2021

Approval coordinator/consortium

The report should be discussed with the coordinator/the consortium. The TKIs appreciate being informed of possible feedback on the report.

The coordinator has assessed the report on behalf of the consortium	X approved by email Maren Peters on 15-03-2019: Dear Theo, thank you very much for preparing the report, it looks complete and we have no further comments. <input type="checkbox"/> rejected
Feedback from the consortium coordinator on the report	

Short description/aim PPP

What is going on and how is this project involved?

What will be delivered by the project and what will be the effect of this?

Short description of the project .

Sesame (*Sesamum indicum*) is a nutritious, protein rich oilseed crop. Compared to other countries in Africa, Ethiopia has a well-established sesame production zone with knowledgeable farmers and highly appreciated sesame varieties. In the past 10 years, production has rapidly increased. More than 98% of the sesame, produced in Ethiopia, is exported. Sesame is among the six crops prioritised by the Ethiopian Government. The focus of this project is on the organic sesame value chain, organised from farms, to professional storage and handling, to hulling in Addis Ababa and export to Europe in cooperation with Dutch companies. This value chain is unique as it brings the production and market side together and collaborative relations between companies and farmers are established. The objective of this project is to build up a knowledge base and to implement innovations that supports the development of competitive, sustainable and inclusive organic sesame values and that impact on the Sesame sector in NW Ethiopia at large resulting from the sharing and scaling of innovations, practices and results.

For further development of this organic sesame value chain additional knowledge and innovations are required for three interrelated topics in this value chain:

1. Optimization of organic sesame production by application of best agricultural practices.
2. Farmer-company relations, cooperative professionalization and tracking and tracing.
3. New added value propositions.

What is going on in the project

Mid 2018, it became clear that the progress of the project was insufficient, which was reinforced after stopping the participation of one of the partners. In subsequent meetings between the consortium and the (new) research project leader, it became increasingly clear that the original objective of pillar 1 and 2 of the project would be difficult to realize via this route. There was also a lack of clarity about the financial rules and the substantive condition of the TKI-AF project. To get out of this impasse, a meeting with the TKI agency took place. It has been agreed to adjust the project plan by giving more attention to the knowledge questions in the field of organic cultivation, soil quality, entomology and mechanization. These points were included in an activity plan for 2019. Several scenarios were set up and discussed. In the project committee meeting on February 22nd, it turned out that the focus of work package 1 and 2 were not extended enough from research on improved practices to actual implementation of already proven and available practices to reach the partnerships objective. While all partners are content with the start and outline of WP3, the outline of activities and resource persons for WP1 and WP2 as proposed did not reflect the expected broadening of the focus to go forward with both the work packages. Having thus explored all possible options to make the project a success, the project partners concluded during the meeting that the current partnership setup, facing the limitations of the TKI-requirements, will not be able to generate the expected results for both WP1 and WP2. The outline of WP3 gave nevertheless enough confidence that the research project leader was asked to explore the possibility to continue the Sesame Open project only for WP3. It means that the size of the PPP including the subsidy from the TKI will decrease compared to the original project plan. An adjusted project plan including adjusted budgets will be submitted via the mutation form 2019 for the ongoing private-public-partnership (PPP) projects at the TKI office before 15 April 2019.

Changes to the original project plan and follow-up	
Have there been any changes in the consortium/project partners? If yes please explain	Yes, one of the project partners, Hak & Partners B.V. stepped out the consortium mid-2018 due to the fact that there was no synergy possible with the project Chickpea (PPS-AF 15286). Also a new research project leader has been appointed due to retirement of the former project leader.
Have there been any changes in the project set up? If yes please explain.	Based on the changes of the consortium, the execution of pillar 3, the exploration the added value, was postponed. This was started early 2019.
Do you expect a patent application to arise from this PPP? If yes please explain	No
Do you expect spin offs to arise from this PPP? (including new projects) If yes please explain	Not yet
in how many years will the private parties use results from this project in practice?	The obtained results from pillar 1 and 2 can be used in the next year of cultivation organic sesame
How has the project contributed to developments within the involved knowledge institution(s)? (e.g. scientific breakthroughs, new collaborations etc)	Not yet any scientific breakthroughs
What will be the follow up of this project?	No

Achieved Results

Results for 2017 were reported in January 2018 (Geerts, Lang and Bartels, 2018). The achieved results in 2018 are summarized per pillar, as described in the project.

For pillar 1, agronomic innovations were tested with the following results: crop residues ploughed in after harvest resulted in reduced weeds, a broken pest life cycle, increased organic soil matter, and a yield increase up to 10%. The tests with bio-fertilizers and use of cow dung show yield increase, but are practically and economically not feasible yet. This indicates the challenge for finding solutions that solves the current situation that organic farming is soil depleting. The use of rotation crops is very important for sustainable farming. Mung bean is doing well in the Humera area. Out of new options, Lablab, Chia and Cow pea show increase of yield, but more tests needs to be executed to have more reliable information and to convince the farmers.

Mechanization trials were carried out at a larger scale. The key challenges here are the availability and cost of machinery, and the communication about company-farmer collaboration regarding mechanization solutions. Like soil fertility management, pest and disease management, which is more difficult and faced with limitations for farmers, still needs more attention. Preventive measures are most important, as are farmers' capacities for field scouting. A population of seed bugs is kept at HuARC, first tests with an organic pesticide are promising.

For pillar 2, the main challenge is developing the relations between farmers and the company (Selet Hulling). The current farmer-company relation situation is still close to the wide-spread agribusiness system in Africa, farmers sells on a one-off basis, sometimes to traders, sometimes to the cooperative, without the intention to build up a long-term business relation. The rate of sesame that is accepted as organic is low. The main challenge to address is that farmers have not made an explicit choice for being organic farmers. Factors that influence this choice are many: incentives (access to loans, premium price), services (support to mechanization, bags, training), market options for rotation crops, and risks (higher risks of soil depletion and pest and diseases, risk of contamination by neighbors). In 2018, Selet Hulling offered a more specific package to farmers (mechanization, premium) and is seeking to find a package that is economically feasible for them and convincing enough for organic farmers.

For pillar 3, the exploration of use the waste flows after harvest for processing or making fuel out of it are calculated as too costly. Fertilizing the soil for organic cultivation has priority, so priority is given to mulch the straw into the soil. The side flow of hulls during processing was explored but the volume is too low to be of interest. The research of possible added value of protein in the press cake was postponed, is scheduled to start early 2019.

Deliverables (description of the most important products and their target group)

The primary outcome of pillar 1, Farmers applying innovations, reduce the farm-level organic sesame production cost price per bag of 100 kg (quintal) was targeted in 2018 at 10%. This wasn't reached.

The primary outcome of pillar 2, Selet Hulling and sesame farmers engage and invest in a repeated supplier-buyer relation to the benefit of both, was not realized in 2018.

The primary outcome of pillar 3, sesame product diversification for bakery, tahini and oil industries, and value creation from crop and processing residues, was a presentation of different new innovative routes to improve the value of processing residues. First experiments carried out are promising.

Number of delivered products (in an appendix, please provide the titles and/or description of the products or a link to the products on public websites)

Academic articles	Reports	Articles in journals	Introductions/workshops

Appendix: Names of the products or a link to the products on a public website