

# SUSTAINED EFFECTS IN DEVELOPMENT PROJECTS

A case study of agricultural development  
projects in Africa



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## Summary

Many development projects aim to make a difference and have an impact on the life of local citizens. Researchers and aid donors generally recognize the need for development projects to aim for sustained benefits of their project interventions. This is particularly important for agricultural projects. In many developing countries in Africa, the agricultural sector employs a large number of the population. Moreover, increasement of agricultural production can lead to food security in that country and more exports, which can generate incomes for local farmers. With aid donors laying more focus on sustaining project benefits, one would think that they will fulfil the criteria of sustainability when executing and completing their work. Literature has been written about criteria project developers should take into account when designing and executing projects, however not much attention has been brought to what extend project developers do take the criteria for sustainability in mind when designing, implementing and finishing their projects and which factors are necessary for sustained benefits. Therefore, this research answered the following research question: *‘To what extent are the criteria for project sustainability derived from literature important for the expected sustainability of agricultural development projects?’*. This is done by conducting a case study and assessing ten agricultural development projects by use of a conceptual framework, which included twelve factors that are important for sustained benefits of agricultural projects.

The results indicate that agricultural development projects can be expected to have sustained benefits if they include factors of the conceptual framework in the projects that are found to be necessary. Those factors are: capacity of local stakeholder; existing policies and policy support; M&E during project implementation; and no harm to environment. Other factors from the conceptual framework can contribute to sustained benefits but are not necessary. For project developers one could see trade-offs between factors were made: none of the projects did involve all factors from the conceptual framework. One finding of this study was that, even though there is much emphasis in both literature as well as in the projects themselves on capacity building, some projects still failed to achieve the desired level of capacity of local stakeholders by the end of the project. Therefore, a recommendation for future research is to research why this is, so project developers and executors can overcome this capacity problem in future projects. This can help to increase the number of agricultural development projects with sustained benefits. Based on the finding of this study future research could also asses why few projects continue monitoring and evaluation activities after project activities stopped, and what the impact is of not continuing those activities on the sustained benefits of those projects.

## Acknowledgment

When I was young, I learned from my granddad to always give to others if you can. He, as a white South African man, already experienced at a young age how divided the world was, and how lucky he was to have the opportunities in life that he got. Even though I did not get the opportunity to know everything about him, he is one of my main inspirations in my work. In my studies I got the opportunity to develop myself where I could. As a freshman I started the bachelor 'Technische Bestuurskunde' at the TU Delft, not knowing where I would be today. Many opportunities crossed my path to develop myself and learn about my interest in life. I got the opportunity to do volunteering work in Brazil, where I met the nicest people in the world. Even though they had not much to give, they had everything to give: their kindness, openness and willingness to share.

Soon after this experience, I had the opportunity to do an internship in South Africa, where I researched the potential of a biogas digester at several farms. This in order to make the farmers self-sufficient in gas and potentially electricity, since that is very expensive in the countryside in South Africa. I stayed at the farms for three months, but after this period of time it was time to leave and start studying again. During this project, I learned a lot about the political system in South Africa. Many of the (black) farmers got their farms for free from the government, as sort of a 'compensation' for the hurt that was done to them in times of Apartheid. During the farm visits, I noticed that the farmers did not receive training about sustaining a farm, and growing grains from the land. They just got the farm from the government, received around 10.000 chickens and were supposed to figure it out themselves. 'Just keep them alive, how hard can it be?' Well, quite hard if all the 10.000 chickens get a disease that you don't know how to cure. Here is where my interest in this topic came. There are so many funds going to development projects, but how well is this money spend? And does it really help the people there? In the 80s it was okay to provide developing countries with material support and have kind of a top-down approach, but I feel today this should not be the case anymore.

Writing this thesis was a fun but challenging process, which could not have been done without the support of some people who I would like to thank. First of all, I would like to thank my first-supervisor, Prof.dr. Geske Dijkstra. I would like to thank her for her time and devotion, the many feedback sessions and her critical thinking. She really helped me in the process of writing this thesis, and always kept me focussed and made me rethink my work. Secondly, I would like to thank my second reader Prof.dr. Markus Haverland, who looked at the thesis with a fresh view and gave good suggestions for improvement.

I would like to thank my parents for giving me the opportunity to develop myself as a person, for always believing in me, and for supporting me. Thank you for really listening and being there for me no matter what, I am lucky to have you.

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# 1. Introduction

## 1.1 Problem statement

Many development projects aim to make a difference and have an impact on the life of local citizens. Researchers and aid donors generally recognize the need for development projects to aim for sustainability of their project interventions and impact (Scheirer, 2005). Interventions and effects of the project need to last, and local stakeholders should be able to take over tasks of the project (Meyer & Marais, 2015).

The Development Assistance Committee (DAC) criteria for aid evaluation are used all over the world to evaluate development assistance. Those principles for Evaluation of Development Assistance consist of relevance, effectiveness, efficiency, impact and sustainability. The latter one, sustainability, measures whether the benefits of a project are likely to continue after donors' funding has been withdrawn and main project activities have stopped. In other words, a project needs to be financially as well as environmentally sustainable (OECD, 2020). The sustainability of development projects in the perspective of aid donors implies lasting benefits of the project outcomes after the aid has expired and main project activities have stopped (OECD, 2020). The latter definition for sustainability of development projects will be used for the remainder of this research.

Not all development projects are designed to continue after the activities of aid donors have ended. Sometimes projects are successful when some assistance has been done or research has been conducted and a final report with recommendations has been written (Hudson, 1991). However, most projects demand the continuity of local stakeholders after project activities have stopped. An example for these kinds of projects are agricultural projects, mostly intended that local stakeholders will continue after project assistance has left, e.g. continue the production of vegetables.

Already in 1984, the World Bank assessed the sustainability of development projects after their completion. Five to ten years after the end of the project, 50 percent of the projects had failed. The main reasons they found were that there was a failure to build institutional capacity to continue the project, the long-term sustainability of the projects were not considered during the project, the project tried to change the cultural or social behaviour or that there was no capacity to maintain or update the new technologies (World Bank, 1984). Moreover, the report stated that in projects that were successful to continue, the project leaders increased the local stakeholders' responsibilities during project implementation (World Bank, 1984).

From the perspective of aid donors sustainability is important, since this can be related to how effective the donors' money is used (Meyer & Marais, 2015). Projects that cannot find a way to continue, or that have benefits only for a limited amount of time, can be seen as a loss of

investment, or even a waste of money (Meyer & Marais, 2015). Moreover, failed projects can cause disappointment by local stakeholders, since change in the environment was promised, but this change was not delivered (Meyer & Marais, 2015). Lastly, sustainable projects create an environment wherein the benefits of the project can grow further if beneficiaries continue. Failed projects do not give an opportunity for local stakeholders to grow further (Meyer & Marais, 2015).

With aid donors laying more focus on sustaining project benefits and impact local communities, one would think that they will fulfil the criteria of sustainability when executing and completing their work. Literature has been written about criteria project developers and aid donors should take in mind when designing and executing their project, however not much attention has been brought to what extent aid donors and project developers do take the criteria for sustainability in mind when designing, implementing and finishing the project. Therefore, this research will assess to what extent development projects do take the criteria of sustainability in mind when developing, executing and completing their projects.

This research focusses on agricultural development projects in Africa. One reason for focussing on Africa, is that African countries have become strongly dependent on aid. However, the effectiveness of aid given by donors is questioned (Momah, 2018). Bad governance, corruption and mismanagement of national resources are hindering the effectiveness of aid (Momah, 2018). Nonetheless, citizens of African countries are possessing the knowledge and education level in order to continue donors' aid projects (Taiwo, 2011). Donors should have trust that local citizens are capable of continuing projects and give them the resources to do so.

For agricultural projects the sustainability of projects whereby local stakeholders can continue the project activities is extremely important. A reason for this is that improvement of production can lead to food security in the country and to more exports, generating income for local farmers (Pretty, 1999). In many developing countries, the agricultural sector employs many people. For instance, the agricultural sector in Ghana accounted for 54% of the GDP in 2019, and almost half of the workforce was employed here (Internal Monetary Fund, 2019). Even though the agricultural sector seems important for many developing countries, many projects aimed at improvement of agricultural production still fail after main project activities and funding have stopped (e.g. Iwuchukwu & Beeior, 2018; Matthew & Olatunji, 2016; Mignouna et al., 2011).

Last reason this project focusses on agricultural projects in Africa, is that the author will conduct a second master thesis for her studies at the TU Delft, which will focus on agricultural

projects in Ghana. In this second master thesis, she will look at capacity building in agricultural learning programs. The knowledge gathered by writing this thesis will be very helpful for the second master thesis and can therefore improve the quality of it.

## **1.2 Research objectives and question**

The overall objective of this research is to assess to what extent project aid donors and project developers involve important criteria for the long-term sustainability of their projects when developing, executing and completing their projects.

Therefore, the following research question will be answered:

*To what extent are the criteria for project sustainability derived from literature important for the expected sustainability of agricultural development projects?*

In order to answer this research question, the following sub-questions should be answered:

- 1. What factors can predict the long-term sustainability of development projects, in particular agricultural development projects?*
- 2. How do the factors of long-term sustainability found in literature come back in real-life agricultural development projects?*
- 3. To what extent can agricultural development projects be expected to have sustained benefits, based on the factors found in literature?*

## **1.3 Approach**

To answer the research question and sub-questions, a case study has been conducted. This case study focusses on agricultural projects in Africa that have been completed and of which project implementation and completion reports were written. The research approach is as follows. First, a literature review has been conducted, in order to define the most important factors that can predict the long-term sustainability of development projects. This review will include both factors for sustainability of development projects in general, but will also have a focus on agricultural projects, since the cases from the case study are all agricultural projects. After the literature review, a conceptual framework has been designed. This framework forms the basis for the case study that was conducted later on. The conceptual framework consists of the most important factors that can determine the long-term sustainability of agricultural development projects. It is used to analyse 10 agricultural development projects, focussed on an increase in production. Both World Bank Project Appraisal Documents (PADs) as well as the World Bank Implementation Completion and Results reports (ICRs) have been used for the analysis. The



PADs and the ICRs can be found on the website of the World Bank. The PADs are made in order to come to an agreement of the project design and implementation, wherein the intended beneficiaries are stated, the expected project outcomes and aspects the project consists of (World Bank, 2020). The ICRs have the aim to increase the effectiveness of development, by self-evaluation and the sharing of knowledge (OPCS, 2006). The is chosen to use the World Bank's PADs and ICRs because they are widely available and can be retrieved without any extra costs. The reports were analysed based on the factors that are important for the sustainability of development projects, and the research looks if the project fulfils these factors and can be expected to have sustained benefits, or that any pitfalls can be found. Based on this analysis, a conclusion can be drawn about to what extent the criteria for project sustainability are important for expected sustained benefits of agricultural development projects.

## **1.4 Societal and academic relevance**

### **1.4.1 Societal relevance**

The societal relevance of this study is twofold. Firstly, aid donors and project developers lay importance in the sustainability of their projects, since it makes their project activities more relevant if sustained benefits can be achieved. Moreover, aid donors can relate the sustainability of projects to a loss of investment if the project did not continue, or conclude if the money is well spend (Meyer & Marais, 2015). In the current situation, not every project does meet these sustainability criteria and projects do not always continue after aid donors or project executors have left. By evaluating projects if they meet the criteria for sustainability, one can also tell which criteria are met and which not. In future projects, donors can take those criteria in mind when executing and finishing their projects and lay more focus on criteria that are often not met. This can lead to better sustainability in agricultural development projects.

Secondly, sustainability is not only important for aid donors, but also for aid recipients, i.e. the beneficiaries of the projects. If they start projects, they might expect benefits from the project on the long-term. If those benefits are not there, this can cause disappointment by local stakeholders, and eventually decrease their trust (Meyer & Marais, 2015). Moreover, sustainable projects can increase opportunities for beneficiaries to grow further, which can give them even more benefits. In the case of agricultural projects this can mean better food security or more incomes for local farmers.

### **1.4.2 Academic relevance**

The academic relevance of this study can be found in the fact that scholars draw attention to the sustainability of development projects and have found important criteria projects should meet to be sustainable. However, as far as the author knows, no literature has been written about how

many projects do actually meet the criteria of sustainability when executing and finishing the projects, and no studies does compare projects on how the different factors are taken into account in the project design and project implementation. This study will not only unravel if projects do meet the criteria of sustainability when an Implementation and Completion Report (ICR) is written but will also look at if criteria are not met, which of them are not met. In this way, it can add new information to current literature about the criteria for sustainability in aid projects.

### **1.5 Outline thesis**

The outline of this thesis is as follows. Chapter two presents the literature review, which identifies the concept of sustainability of aid projects and what factors are important to achieve this sustainability. Chapter three presents the conceptual framework that will be used for analysing the 10 selected agricultural projects. The conceptual framework consists of 13 factors in total and was used for the analysis of the projects. Chapter four describes the methodology that is used in this research. In this chapter one can find a description of the case study method that was used; the selection of cases; and the validity and reliability of this study. Chapter five presents the results of the analysis of the research, where after chapter six discusses the results of this analysis. Chapter seven presents the conclusions, shortcomings of this research and implications for future research.

## 2. Literature review

In order to identify the most important aspects of sustainability overall and sustainability in agricultural development projects, a literature review is conducted. The literature review focussed first on the overall term of sustainability of development projects, thereafter on criteria for sustainability in development projects in general, and afterwards on factors that can predict the sustainability of agricultural development projects. The databases Scopus and Google Scholar were used to search for relevant literature. Moreover, a snowballing effect is used, whereby reference lists of relevant articles were consulted to find other relevant articles. In total 16 articles are included in the literature review.

The following search strings have been used:

- **TITLE-ABS-KEY ( sustainability AND development AND projects AND projects )**
- **TITLE-ABS-KEY ( sustain AND effects AND “development projects” )**
- **TITLE-ABS-KEY ( sustain AND effects AND “aid projects” )**
- **TITLE-ABS-KEY ( success AND factors AND agricultural AND projects )**

### 2.1 The sustainability of aid projects

Currently, the level of sustainability in development projects is not always known, uncertain or obscure. In the short term, the objectives of many development projects are achieved, however effects in the long-term, when main project assistance has left and the local community should reap project benefits on their own, are weaker and often harder to measure (Holvoet et al., 2018). Moreover, many aid donors report the results of their projects, however, the results provided often consist of limited informational value and focus on short-term outcomes instead of long-term outcomes (Holzapfel, 2016). Therefore, they do not provide any evidence on the contribution of their project to the long-term development of local citizens (Holzapfel, 2016).

Within literature, the definition of sustainability for aid projects differs widely. Some scholars argue that sustainability is about sustaining the program benefits, others focus more on the continuation of activities, others on the knowledge and skills, and others on resources. Wiltsey Stirman, Kimberly, Cook, Calloway, Castro & Charns (2012) conducted a literature review about sustainability, wherein they researched 125 studies about sustainability and found that most of those studies did not provide a clear, operational definition of sustainability. Although the definitions of sustainability differ, in general most studies focused on the continuation of the project's benefits for and by local stakeholders after donors have left or funding has ended, which can be related to the definition of the OECD DAC criteria for sustainability (OECD, 2019; Wiltsey Stirman et al., 2012). The DAC definition of sustainability is as follows: *“The continuation of benefits from a development intervention after major*

*development assistance has been completed. The probability of continued long-term benefits. The resilience to risk of the net benefit flows over time.*” (OECD, 2019, p12). This definition notes that there are several dimensions to sustainability, which include the financial, economic, social, and environmental aspects. The DAC definition of sustainability has been used in the remainder of this research.

## **2.2 Factors that influence the sustainability**

In literature, different factors can be found that influence the sustainability of aid projects. The DAC definition of sustainability focuses on if the benefits of the intervention are likely to continue (OECD, 2019). Within their definition, they state that sustainability has several dimensions, namely: financial, economic, social, and environmental. The definition of sustainability was updated in 2019, wherein the OECD states that the previous definition of sustainability was too focussed on donors’ perspectives and external funding (OECD, 2019). Chianca (2008) argued that the DAC definition of sustainability back in 2008 was too focussed on only environmental and financial aspects. Other components, like policy support, social and cultural aspects, technology and capacity should also be part of sustainability, especially when evaluating a project’s sustainability (Chianca, 2008). Those components have been included by DAC over the last years (OECD, 2019).

Chianca (2008) defines several factors that influence the sustainability of development projects. He argues that the likelihood of the continuation of project activities will decrease after the initial initiators have left when projects do not take into account the specific culture or values from a region. In agricultural projects this is highly important, since direct cooperation and continuation of local stakeholders is needed to achieve success, and local stakeholders will have to be responsible for example their crops. Moreover, Chianca (2008), stated in his research that the DAC criteria of sustainability overemphasize the need of the project executors instead of that of the local stakeholders. This changed in the current definition of sustainability by DAC (OECD, 2019).

In the past, the DAC criteria of sustainability only focussed on how sustainable they predict the project is going to be. Herein they do not consider how sustainable the project has been (Chianca, 2008; OECD, 2020). One can argue if sustainability should be looked at only after the main project activities have finished, or if it is something that must be prepared for in advance. Pluye et al. (2004) propose that the implementation of projects and the sustainability of projects are processes that should happen at the same time (Pluye et al., 2004). They found that sustainability is determined by everything that happens before, i.e. the project activities. Within the design and implementation, one should also look at how sustainability can be achieved if projects benefits should continue after main project activities have stopped.

In 1989 Rondinelli, Middleton & Verspoor (1989) already argued that in order to achieve sustainability, project implementers should take into account the capabilities of the local stakeholders, environmental uncertainty, innovation and social and cultural values of project participants (Rondinelli et al., 1989). They defined a contingency approach for development projects, wherein they described tasks organizations could take to create a well-defined management process and structure that copes with environmental uncertainty, task innovation, and the values of project participants.

Scheirer (2005) performed a research about the sustainability of American and Canadian health-related programs, to analyse the extent of sustainability in these projects and to find factors that can contribute to a greater level of sustainability. In her research, she found five important factors that influence the level of sustainability of projects. These factors include: (1) the program can be modified over time; (2) a team-leader is present; (3) a program fits the organization's mission and way of operating; (4) benefits of staff are recognized; and (5) stakeholders from other programs provide their support (Scheirer, 2005). When projects would fulfil these factors, the chances are higher of continuity of the project after aid assistance has stopped.

Wiltsey Stirman et al. (2012) found in their literature review factors that overlap with that of Scheirer. They found that factors that influence the sustainability of projects relate to the context (like policies, laws, and culture), the project itself (like the adaptability and effect), processes (like monitoring and evaluation) and the capacity to sustain (like funding, local resources and stability) (Wiltsey Stirman et al., 2012). Coming back to funding, the sustainability of a project can also be influenced by the way it is funded (Pluye et al., 2004; Scheirer, 2005). An example is that projects that are initiated by local stakeholders, who felt the need to change something at their current situation, may be more likely to continue as compared to a project that is initiated by an external agency, which was funded by this agency (Scheirer, 2005).

Savaya & Spiro (2011) conducted a research, to find predictors for sustainability in social projects. Their research included 197 social projects. One of their main findings was that project leaders play an essential role in the sustainability of projects (Savaya & Spiro, 2011). Tying into this, they found that donors who were more involved in the execution of the project and had a stronger orientation towards the future also had higher chances of sustainability of their project. This implies that if sustainability is incorporated from the beginning, a project is more likely to succeed. Moreover, they found that if the project was perceived as beneficial by local stakeholders, projects were more likely to continue. Lastly, they found that projects with sustained benefits had better resources as compared to other projects. In those projects, more funding or better marketing and political support were present (Savaya & Spiro, 2011). This had

nothing to do with the initial amount of funding, but more with the capabilities of stakeholders involved in the projects, who knew how to do marketing or receive new funding. Hence, including stakeholders who know how to raise more awareness to the project and who put more energy in this can contribute to sustaining project activities and benefits (Savaya & Spiro, 2011).

Meki Kombe & Herman (2017) found different factors for the sustainability of donor led projects as well. They found that if benefits of the project do not continue, or if project outcomes are not seen as beneficial by local stakeholders, they are less willing to continue, and sustainability will be hard to accomplish (Meki Kombe & Herman, 2017). Moreover, specifically related to agricultural projects, Nordhagen, Thiam & Sow (2019) argue that project incentives like improving incomes instead of production is a factor for sustainability in agricultural projects.

Projects that have a higher chance to sustain, are projects who match the cultural aspects and local conditions (Meki Kombe & Herman, 2017). If projects are implemented under the artificial conditions of donors, it can be hard for local stakeholders to continue the project activities when project assistance has left. A reason for this is that when everything turns back to normal, the conditions under which the project functioned cannot be met, e.g. the technology is too expensive or local stakeholders are not able to use the technology by themselves. Meki Kombe & Herman (2017) also found that project benefits are more likely to continue if the ideas are not imposed by donors, but initiated by local stakeholders, which can be related to the findings of Savaya & Spiro (2011).

One thing scholars agree upon, is that monitoring and evaluation of the project should continue after donors have left, e.g. by monitoring the level of production of farmers (Meki Kombe & Herman, 2017; Scheirer, 2005). The level of commitment and interest by local stakeholders should also be sufficient. If stakeholders who are supposed to continue activities are lacking interest or commitment to the project, benefits reaped by the project are more likely to stop (Meki Kombe & Herman, 2017).

Ika (2012) proposed some additional factors that can help projects in Africa to succeed. He proposes that projects should be: tailor-made; take the African culture into account; and supervised by donors, especially if projects are likely to fail. In addressing the projects more to the African culture and values, local stakeholders should play an important role already in the project design phase (Ika, 2012). This can also be related to the findings of Muriithi & Crawford (2003), who argue that project management in Africa should consider cultural and work values of local stakeholders more, and not only look at economic efficiency.

The Danish International Development Agency (DANIDA), already incorporated more criteria in which they define sustainability in their evaluation guidelines in 2006 (DANIDA, 2006). Many of the criteria found in literature were incorporated in their framework. They determined seven components for the sustainability of aid projects, which include: (1) policy support measures; (2) pick of technology; (3) environmental elements; (4) social and cultural aspects; (5) institutional aspects; (6) economic and financial aspects; and (7) external factors (DANIDA, 2006). The first factor, policy support measures refers to the commitment of the recipient country. It is about the agreement on objectives, the scope of the support to responsible organizations and several policy measures, i.e. the commitment of the recipient to chances of success. The second factor, pick of technology, includes the choice and adaption of technology that would meet the existing condition of local stakeholders. One should look at the costs of certain technologies for the use and maintenance by local stakeholders and compare them with the benefits local stakeholders would receive from it. The third factor, environmental matters, focusses if the environment is not damaged by the project. The fourth factor, social and cultural aspects, focusses on the way development projects are consistent with local values and culture. Projects that do not demand a major change in the behaviour of local stakeholders, face a better chance of success and sustained benefits (DANIDA, 2006). The fifth factor refers to the institutional aspect, which is about the way different organizations and institutions manage to cooperate and the distribution of responsibilities between stakeholders. Factor six, economic and financial aspects, says that the cost-effectiveness of the intervention, the economic and financial benefits and future economic situation should be measured. The last factor, external factors, focusses on for instance political instability, natural disasters, or economic shocks that can influence sustained benefits for beneficiaries (DANIDA, 2006).

### **2.3 The success and sustainment of agricultural projects**

In literature, the success and sustainment of several agricultural projects have been studied. Most studies that describe the factors for success and sustainment of agricultural projects, found those factors through a case study. Literature selected for this part focussed on agricultural projects who had an increased production as one of their main goals. For example, one case focussed on agricultural training of farmers, another on improvement of productivity for better nutrition and another on increased soybean productivity in Nigeria. Within all cases, both local stakeholders as well as project developers were included.

Fuchs, Orero, Namoi & Neufeldt (2019) performed a case study about a community-driven local development project, which aimed at improving farmers' production with agricultural and agroforestry training. They found that external factors, like the location of the farm, play an important role in the success of agricultural production. Project executors should

take the location of the farms into mind when designing a project, i.e. keep in mind the amount of rainfall that is at a certain location, since this influences crop yields (Fuchs et al., 2019). Moreover, they found that if local farmers are more willing to participate in the project, success will increase.

Another study, of Nordhagen et al. (2019) studied the sustainability of agricultural projects in Senegal, who had the objective to increase production in order to have better nutrition for local citizens. They found that in urban areas improving incomes might be more relevant for local stakeholders than improving production, and that it was hard for local stakeholders to remain project activities after donors have left since they did not have the right resources to continue (Nordhagen et al., 2019). During the project, they received certain means for free, however the reason most project activities failed after donors had left was the capacity of local farmers to continue using these means. One important reason for farmers to continue the project was the passion they felt (Nordhagen et al., 2019). The main production of food was mainly consumed by households themselves, few participants had actually been selling the goods produced.

Iwuchukwu & Beeior (2018) studied the constraints for success of a soybean production project in Nigeria. They found economic, institutional and linkage constraints that hindered the project from succeeding. Within the economic constraints, they found that if participating farmers would perceive new technologies they would have to use as if those technologies would meet their needs and fit into their environment, the project would be more likely to succeed (Iwuchukwu & Beeior, 2018). This can be related to findings of Mignouna et al. (2011), who had similar findings within their study. They both found that if farmers had negative perceptions about the used technologies, or if the technologies were too costly for local farmers to use without financing, the likeliness to adopt them would be low, which hinders project success and sustained project benefits (Iwuchukwu & Beeior, 2018; Mignouna et al., 2011).

Other economic factors Iwuchukwu & Beeior (2018) found that hindered project success and sustained benefits were bureaucracy, not well-distributed funds and poor market information. Institutional constraints, which relate to the failure of government or governments' institutions, also play a role, with the biggest role for poor government support (Iwuchukwu & Beeior, 2018). Moreover, poor monitoring and evaluation prevented the project to succeed. Also, local stakeholders were not involved in the planning of the project, which decreases local support. Lastly, as a linkage constraint, they found that poor interaction between stakeholders involved reduced the project support and success (Iwuchukwu & Beeior, 2018).



Matthew & Olatunji (2016) conducted a literature review, to give policy recommendations for agricultural extension projects, which increase agricultural productivity. They found several reasons for ineffective agricultural programs in literature. The first reason is political instability, which has to do with policies changing or governments changing and policies not being adapted (Matthew & Olatunji, 2016). In addition to that, when the necessary means, like human capacity and material resources, are not available, programs are bound to fail. Moreover, the non-involvement of relevant stakeholders in the planning and execution of projects can be seen as a reason for project failure (Matthew & Olatunji, 2016). As mentioned before, this will reduce the support of important stakeholders, like local farmers. Matthew & Olatunji (2016) state that agricultural projects who do not involve local stakeholders are bound to fail. Involving local stakeholders will lead to a better commitment of important stakeholders, a good relationship between project agents and farmers, better decision-making and quicker supported actions (Matthew & Olatunji, 2016). Lastly, communication between stakeholders is key, and very often lacking. All stakeholders, like local farmers and project executors, should be informed, and monitoring and evaluation is a very important aspect for the continuation of agricultural projects (Matthew & Olatunji, 2016).

Kusnander, Brazier and van Kooten (2019) proposed a new framework for participatory sustainable agricultural development. Within their framework, they focused on four classes, namely: environmental, economic, social, and governance. Within the environmental class, factors as the protection of water, land and air are included. Moreover, biodiversity and food safety belong to this class. Within the economic class, the following factors are involved: production; the market itself; logistics, transportation and communication infrastructures; financial infrastructures; and capacity development (Kusnandar et al., 2019). Within the social class, empowerment, engagement and trust are important. Empowerment includes here the awareness of local stakeholders about their capabilities, the ability to self-organize and the ability to act and taking responsibilities. Engagement focusses on communication between actors, cooperation and awareness of each other's positions. Trust is about the perceived reliability of stakeholders on one another. The class of governance is seen as an umbrella for the other three classes and is seen as the rules and structures under which the sustainable agricultural development functions. Both formal institutions, like the legal positions of actors and the mechanisms for interaction, as well as the informal institutions, like local culture and values, are important here (Kusnandar et al., 2019).

#### **2.4 Conclusion literature review**

This literature review focussed on the sustainability of development projects, i.e. how projects can have sustained benefits after main project activities stopped. The first part of the literature

review focussed on the definition of sustainability that is used in the remainder of this thesis. Thereafter, the literature focused on factors that influence the sustainability of development projects in general. In this part, one could see that authors found factors that differ from each other, but also factors that are alike. Examples for factors that authors agreed upon were monitoring and evaluation; social and cultural aspects that should be taken into consideration; the capacity of local stakeholders and institutional aspects. Examples for factors that were mentioned by only one author were: if the program would fit the organization's mission; or the capabilities of local stakeholders for marketing the project.

In the last part of the literature review, several studies on agricultural development projects focussed on increase of production were analysed. Here some factors found overlapped with the general factors found for sustainability. Examples are the capacity of local farmers; monitoring and evaluation; economic factors; and involvement of local stakeholders. Factors that were quite case specific were for instance the location of the farms and passion by farmers.

The factors found in the literature review were used to design a conceptual framework. Here, the framework of sustainability by DANIDA (2006) is used as a basis, since the framework consisted of many factors that were mentioned by other authors as well. How this conceptual framework has been established and why some factors were selected and some not, can be read in the following chapter: Conceptual Framework.

### 3. Conceptual framework

The literature review distinguished several factors that influence the sustainability of development projects. The first part of the literature review focused on general factors for sustained effects of development projects. The second part presented several factors for sustained benefits of agricultural development projects. By combining both parts a conceptual framework has been created, which is presented and described in this chapter. Moreover, an explanation is given on the decision to include or exclude factors in the framework. All identified factors, with corresponding authors, can be found in Appendix I, table I.1 and table I.2.

#### 3.1 The selection of factors

The factors found in literature were selected and combined, to form the conceptual framework of this study. The evaluation criteria for sustainability of DANIDA (2006) are used as a basis for the framework. Reason for this is that most other literature defined similar concepts. The criteria of DANIDA have been expanded and combined with the different factors defined in the literature study and were applied to the specific case of agricultural development projects.

The factors were selected and combined carefully. The first step for selection was to list all factors with corresponding authors found in the literature review in Excel. After that, the factors were coloured, depending under which category they would fall (e.g. categories like project design, institutional aspects, environment, economic and financial aspects). Some of the factors could be combined, because they had the same meaning. An example for this are factors like local stakeholders included in early time of the program as defined by Ika (2012) and inclusion of local stakeholders already in planning as defined by Iwuchukwu & Beeior, (2018). One criterion for selecting a factor was that they were mentioned by more than one author. The selected factors with the corresponding authors who mentioned the factors can be found in Appendix A, table I.3. This table gives an overview of how many researchers defined that factor, and to which category (like project design, institutional aspects and economic and financial aspects) they belong.

Not all factors found in literature are included in the conceptual framework. Only factors that were mentioned by two or more authors were added to the framework. Therefore, factors like bureaucracy and passion by farmers have been excluded. Moreover, the factor location of the farm, as mentioned by Fuchs et al. (2019), has been left out as well. This has been decided because it would be impossible to track down every location of every farm included in a project. However, when designing for sustainability, it is important to think about the influence of the location of the farms as mentioned by Fuchs et al. (2019).

The final conceptual framework can be found in figure 3.1. An explanation of the different factors is given below. One should note that sometimes project developers will have to make trade-offs between factors.

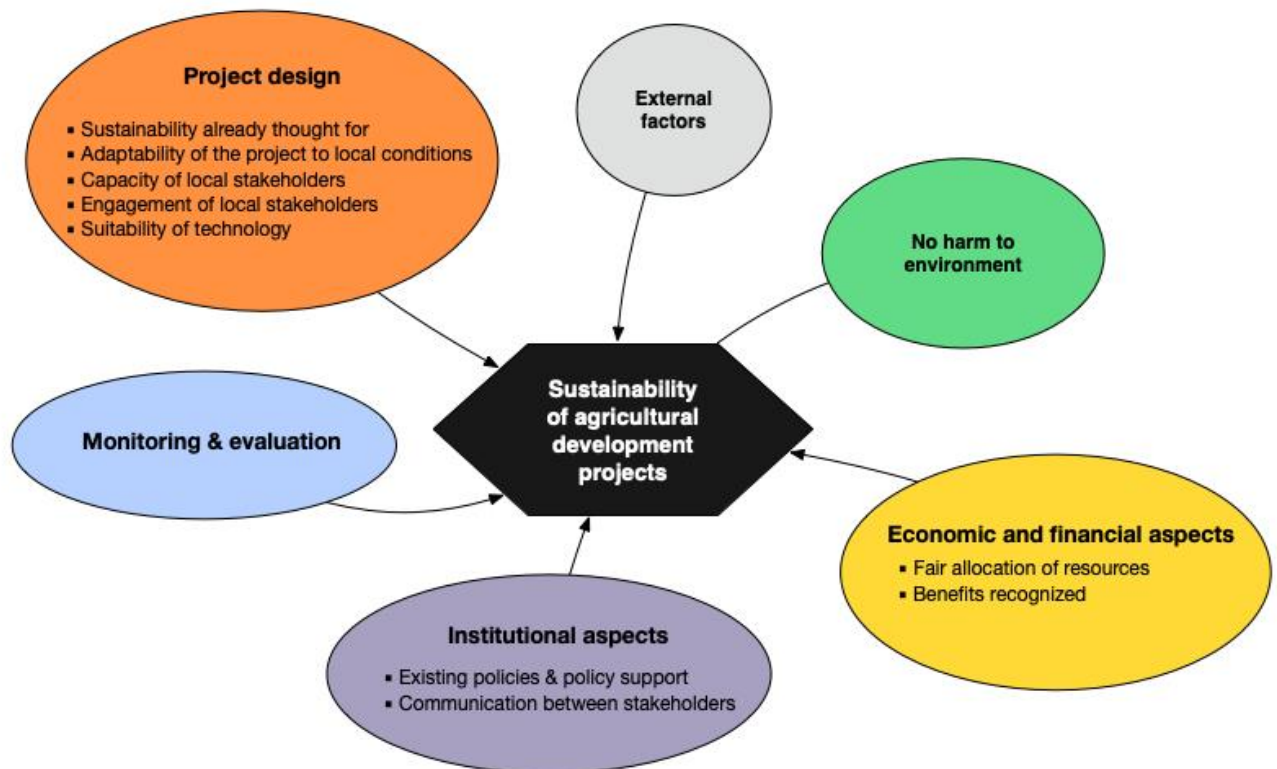


Figure 3.1 Conceptual framework

## 3.2 Factors explained

### *Project design*

#### **Sustainability already thought for in project design & implementation**

Within the project design, project designers should already think about if they want the project to continue after most of the project activities and assistance have stopped. Moreover, if the answer to this question is yes, they should think about how they can achieve this sustainability. (Pluye et al., 2004; Savaya & Spiro, 2011). This factor should be included in the project designs, e.g. by providing a section of how sustainability can be achieved and what measures will be taken on how to achieve this sustainability.

#### **Adaptability of the project to local conditions**

The adaptability of the program to local conditions is important as well (Scheirer, 2005; Wiltsey Stirman et al., 2012). A reason for this is that when pitfalls during the project are found, they can be adjusted. Moreover, when the project does not seem to meet the expectations of local stakeholders, like farmers, they would be less likely to continue project activities. If the project can be adapted in line with their expectations, chances of sustainability are higher. The project

should therefore also match the local conditions (Chianca, 2008; DANIDA, 2006; Ika, 2012; Meki Kombe & Herman, 2017; Muriithi & Crawford, 2003). As mentioned by DANIDA (2006), projects that do not demand a major change in the behaviour of local stakeholders have a better chance of success. Moreover, projects should meet the local conditions in a way that local stakeholders are able to continue projects activities, e.g. that they would have the right resources and environment for it.

### **Capacity of local stakeholders**

An important factor in order to have sustained project benefits for beneficiaries and local stakeholders, is the capacity of them to do so (Chianca, 2008; Nordhagen et al., 2019; Wiltsey Stirman et al., 2012). Within projects, project developers should make sure that the local stakeholders involved will have the capacity to continue project activities and are able to continue receiving the benefits of the project. They can do this already in their project design, by identifying if local stakeholders already have the capacity to perform project activities on their own. Moreover, if local stakeholders are not able to perform project activities, an element of enlarging their capacity should be implemented in the project design.

### **Engagement of local stakeholders**

The engagement of local stakeholders is important for the sustainability of (in this case agricultural) development projects (Chianca, 2008; Ika, 2012; Iwuchukwu & Beeior, 2018; Kusnandar et al., 2019; Matthew & Olatunji, 2016). Local stakeholders should be involved in an early stage of the project, i.e. already in the design of projects, so that the project can consider their wishes and needs as well. Moreover, local stakeholders, like farmers, should be willing to be engaged themselves as well (Fuchs et al., 2019).

### **Suitability of technology**

Within agricultural development projects, the suitability of the chosen technology is important (Chianca, 2008; DANIDA, 2006; Iwuchukwu & Beeior, 2018). Technologies that are used should contribute to sustained project benefits, which can be achieved in several ways. The technologies that are chosen to increase agricultural production should meet local conditions and local stakeholders should be able to use the technologies themselves, especially after main project activities have stopped (Meki Kombe & Herman, 2017). Moreover, the costs of the new technology are important as well (Chianca, 2008; DANIDA, 2006; Mignouna et al., 2011). If farmers are expected to use the technology when initial project funding has stopped, they should be able to use the technology with their own finances.

### *Monitoring & evaluation*

Another important factor found in literature, and mentioned by many authors, was monitoring and evaluation (Iwuchukwu & Beeior, 2018; Matthew & Olatunji, 2016; Meki Kombe & Herman, 2017; Scheirer, 2005; Wiltsey Stirman et al., 2012). Project related activities (e.g. agricultural production) should be monitored during the project, but also when main project activities have stopped. Monitoring during the project can track errors or pitfalls of the project at an early stage, and monitoring after main project activities have stopped can motivate project beneficiaries to continue project benefits and outcomes (Iwuchukwu & Beeior, 2018; Matthew & Olatunji, 2016).

### *Institutional aspects*

#### **Existing policies & policy support**

Existing policies should correspond with the project's needs and policies changing during project implementation should not have a big influence on the project activities (Chianca, 2008; DANIDA, 2006; Scheirer, 2005; Wiltsey Stirman et al., 2012). Moreover, governments might change policies or do not adapt certain policies, which can cause projects to have less sustained benefits. However, government support can have a positive influence on sustained project outcomes (DANIDA, 2006; Iwuchukwu & Beeior, 2018). An example for this would be if a project aimed at increased production would be performed in an environment wherein the government also has one of its main priorities focused on increased agricultural production. Herein they might provide extra support to local farmers.

#### **Communication between stakeholders**

An important factor that is not mentioned before is the communication between stakeholders during project implementation and afterwards. Poor communication between stakeholders can lead to unsustainable projects. Therefore, project executors should make sure that all stakeholders involved receive the right information and communicate with one another (Iwuchukwu & Beeior, 2018; Matthew & Olatunji, 2016). This can be: on a local level, between local stakeholders, farmers, local markets etcetera; on a regional level, wherein different municipalities work together; but also on a national level, wherein project executors communicate with the government about certain institutions and policies.

### *Economic and financial aspects*

#### **Fair allocation of resources**

This factor is about how the funding of the project is distributed, but also about other resources, like material goods such as seeds, fertilizers etcetera. Farmers within the project, should have equal access to the resources allocated (Iwuchukwu & Beeior, 2018; Matthew & Olatunji, 2016; Savaya & Spiro, 2011). Moreover, the provided resources that will give benefits, should be accessible for farmers after main project activities have stopped. For instance, fertilizers that were used in the project to improve the production of crops at the farms should be affordable for farmers, so they can purchase those themselves.

#### **Benefits recognized**

The benefits of the project, like increased production or increased income, should be seen as added value by local stakeholders (Kusnandar et al., 2019; Meki Kombe & Herman, 2017; Savaya & Spiro, 2011; Scheirer, 2005). Local stakeholders should perceive the project as adding value to their personal situations and local stakeholders should perceive the expected benefits of the project before the project has started or right after the project's kick-off. An example in the case of agricultural development projects focused on production is that local stakeholders actually see that their production might increase or that they have a chance on generating more income by participating in the project.

### *No harm to environment*

The environmental elements as defined by DANIDA (2006) and Kusnandar et al. (2019) are also important. This factor represents the sustainability effect for the environment, i.e. are project activities not harming the environment on the short- and long-term. For agricultural projects aimed at increased production, the soil should be fertile, not only in the first years, but also after a few years.

### *External factors*

External factors, like political instability, natural disasters and economic shocks, influence the sustainability of development projects as well (DANIDA, 2006; Matthew & Olatunji, 2016). For this research, it might be hard to predict external effects that have an influence, however, it is helpful to look at a country's situation and events that happened before to predict if external factors might have an influence. Therefore, it would be helpful to find out if there is a **risk analysis** included in the project design, so before the project has started. One should examine

here if risks are mentioned and means are given on how to mitigate those risks. Moreover, it is helpful to identify risks during the project as well, which can be mitigated in the future.



## 4. Methodology

This chapter describes the methodology used for this research. It explains why the chosen method was used and how and why the cases chosen were selected. Moreover, it describes the method for analysing the cases. Thereafter, it discusses the internal and external validity of this study, and the reliability of the results. The unit of analysis for this study are agricultural development projects. The population are all projects in Africa, finished during the time period 2014 till 2019.

### 4.1 Research Method

To answer the research question, there has been chosen to conduct a qualitative research. Qualitative research is often a small-N research, in which a small number of cases are studied in-depth. There are different types of qualitative research, e.g. experiments, interviews and case studies (Yin, 1994). For this research there has been chosen to conduct a case study research. Yin (1994) defines a case study as “*an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident*” (Yin, 1994, p13). Moreover, a case study aims to gain an understanding of a phenomenon in a real-life setting (Yin, 2012). Within this study, we are interested in knowing to what extent the criteria for project sustainability derived from literature are important for expected sustained benefits of agricultural projects. By performing a case study, and looking at different projects that have been executed, the phenomenon of sustainability in agricultural development projects can be studied and an answer to the descriptive research question can be given (Yin, 2012). Second reason why a case study is a good method for this research, is that the phenomenon can be studied in a real-world context. This provides rich information and might help to better understand the phenomenon (Yin, 2012).

There are several types of case studies. This study will use the multiple-case study approach. Within this approach several cases were analysed; namely agricultural projects in Africa, focused on increased production. By analysing multiple cases, the confidence of the outcomes and findings can provide richer information (Yin, 2012).

There are some caveats with doing a case study research. Performing a case study can be quite time consuming (Yin, 2012). In this study, the analysis can be quite time consuming since many documents have to be read and analysed step-by-step. However, a benefit of doing this, is that it gives rich information and might provide better explanations as compared to statistical analyses, wherein only certain numbers are analysed, and no information is given of why something is as it is. Another caveat of a case study is that the results found can be quite case specific (Yin, 2012). This research is a multiple-case study, so several cases have been studied.

Therefore, it is easier to identify very case specific findings and findings that are more general or appear in other cases as well.

## 4.2 Case selection and analysis

The selection of cases should be done very carefully and take certain criteria in mind. Therefore, a case study protocol has been used, as defined by Yin (2012). Within this case study protocol, the researcher made sure that the cases were selected following the criteria below. The cases were selected by using the Documents & Reports database from the World Bank. Implementation & Completion Reports (ICRs) were selected for all cases. However, since many of the factors for sustainability also include the project design, only analysing ICRs would not be sufficient. Therefore, Project Appraisal Documents (PADs) from the World Bank have also been selected for every project. The PAD contains information about the project design, wherein the intended beneficiaries, the expected project outcomes, the project objective and the project components are stated (World Bank, 2020). There has been chosen to use the World Bank's PADs and ICRs because they are widely available and can be retrieved without any extra costs. Additionally, information about the project design (in the PAD) and the project completion (in the ICR) could be retrieved in an accessible way, without a complicated search for useful sources or the chance of analysing sources that are biased. For all projects both the ICR and PAD were analysed. The criteria for selecting a case were as follows:

- Every case selected should be a project focused on agriculture in Africa, in several countries or in just one specific one;
- The projects should have been completed already;
- The projects should focus on increasement of agricultural production;
- Every case selected should have an Implementation & Completion Report (ICRs);
- For every project with an ICR available, there should be a Project Appraisal Document (PAD) available as well;
- To projects were finished between 2014 and 2019;
- The project is not a Development Policy Operations.

Table 4.1 presents the search string that was used in the search bar of the Document & Reports website of the World Bank to make a first selection of projects. This search string resulted in 152 results on May 7<sup>th</sup> 2020.

**Table 4.1 Search string for cases**

<b>Topic</b>	<b>Document type</b>	<b>Countries</b>
All Agriculture	Implementation Completion and Results Report	Africa; Kenya; Nigeria; Malawi; Tanzania; Senegal; Mozambique; Burkina Faso; Uganda; Mali; Rwanda; Congo, Democratic Republic of; Ghana; Western Africa; Burundi; Niger; Zambia; Benin; Liberia; Congo, Republic of; Chad; Sierra Leone; Guinea; Angola; Somalia; Togo; Lesotho; Zimbabwe; Guinea-Bissau; Gambia.

Within the 152 results, not every document was a project focused on increased agricultural production. The search string used was still quite extensive. For instance, some projects in the 152 results on forestry management, pest management or fishery, since those subcategories were also included in the ‘All Agriculture’ topic in the World Bank search. Projects containing those topics were excluded by the researcher. Additionally, the search string did not contain the restriction of when the projects were finished, since this was not an option in the search bar of the World Bank at the time. Therefore, over 100 cases were included in the search string, but did not meet the criteria for selecting a case. Lastly, some of the cases that did fit almost all criteria, were Development Policy Operations. Those operations focus on policy programs and institutional actions that are performed by the borrower, instead of them being projects focused on increased agricultural production. Therefore, they were excluded as well.

In total 10 cases met the criteria for selecting a case and were selected for the analysis. The selected cases can be found in table 4.2.

**Table 4.2 Selected cases**

<b>Case nr.</b>	<b>Country</b>	<b>Project name</b>	<b>Year of completion</b>
1.	Mozambique	The Sustainable Irrigation Development Project (PROIRRI)	2019
2.	Mali	Fostering Agricultural Productivity	2019
3.	Rwanda	Third Rural Sector Support Project	2019
4.	Uganda	Agricultural Technology and Agribusiness Advisory Services Project	2019
5.	Africa	African Forum for Agricultural Advisory Services Second Multi-Donor Trust Fund Project	2018
6.	Kenya	Agricultural Productivity and Sustainable Land Management Project	2017
7.	East Africa	Eastern Africa Agricultural Productivity program	2016
8.	Malawi	Irrigation, Rural Livelihoods, and Agricultural Development Project	2015
9.	Angola	Market Oriented Smallholder Agriculture Project	2016
10.	Zambia	Agricultural Development Support Project	2014

### 4.3 Case analysis

The selected cases were analysed systematically. The analysis was done by making use of the conceptual framework as provided in chapter 3, figure 1, and by use of Atlas.ti. Atlas.ti is an analysis and research software for qualitative data analysis. Each case has been analysed step-by-step, by ‘desk research’. First, the PAD was read by the researcher from the beginning till the end. Thereafter, the ICR was read from the beginning till the end. Afterwards, sentences and words were marked with a colour, depending on which factor from the conceptual framework they relate to. For example, if a report states that there is current monitoring & evaluation, the sentence presenting this has been marked light blue, the same colour that was used in the conceptual framework. Afterwards, the marked words and sentences were labelled with a more specific factor which were stated in the conceptual framework. Example for this is that a sentence marked in orange, so related to project design, can be given the tag ‘Project design: capacity of local stakeholders’ if it relates to this factor. This was done for every marked sentence and every selected report (PADs and ICRs). Afterwards, every case was analyzed to identify missing factors, i.e. factors of sustainability that were not accounted for in the project. Thereafter, the projects have been compared with one another, to find a pattern if certain factors were missing in several projects or if factors were accounted for in every project.

#### 4.3.1 Assessment of expected sustainability

Part of the analysis aims at determining if the project appraised are expected to have sustained benefits. This appraisal was done following the steps described in the section before. The assessment if a project can be expected to have sustained benefits are done as follows. First the researcher identified if the factors that were found in a project could be appraised as satisfactory. This was based on what was written in literature and how the factor was applied in the project itself. For example, the factor capacity of local stakeholders contributes to sustained effects if by the end of the project the main beneficiaries would reach a sufficient level of capacity to sustain on their own. This was mentioned in the ICR. A comparable way of examination was done for every factor of the conceptual framework. How a factor has a positive influence on sustained benefits, can be found in Appendix A, table I.3. By the end of this examination for every factor in the project, the researcher wrote a summary about how the factors were found in the project, and why this would be satisfactory or not. Based on those findings the researcher concluded if the project could be expected to have sustained benefits.

## **4.4 Validity and Reliability**

### **4.4.1 Validity**

Validity is important for interpreting the results of the analysis. Within qualitative research, there are different causes for validity not being sufficient. For the internal validity, it is important that the identified cause is truly the cause of the phenomenon and that the conceptual framework measures what it is supposed to measure (Bryman, 2016). In this study it is therefore important to know which factors influence sustainability of agricultural development projects, before analysing the cases. This has been done by conducting the literature review before analysing any reports and by creating the conceptual framework before the analysis. In this way there is no bias by the researcher for selecting certain factors for the conceptual framework. Moreover, interpretive validity is important in this research for the internal validity. Interpretive validity means that what is stated in the reports is interpreted by the researcher as what was meant in the reports (Johnson, 1997). One way to achieve this is that within the results section, the essence of what the report is stating stays intact and assumptions the researcher made are described as well. Lastly, within qualitative research the researcher could be biased, i.e. the researcher might find what they want to find (Johnson, 1997). The latter one has been solved by critical reflection of the results found.

The external validity implies that the findings of this study could be generalized for the population. For a qualitative, multiple-case study research, there is no such thing that N-cases should be analysed in order to generalize the findings for the population (Yin, 2012). For the qualitative design the generalization is limited, however according to Blatter & Haverland (2012) this should not be a problem. Case studies are primarily used to determine whether something made a difference, or something actually happens in real-life. Moreover, a case study could be a first contribution to a larger research (Blatter & Haverland, 2012). Generalisation is not the major purpose of this research. This research aims at exploring to what extent the criteria for project sustainability are important for expected sustainability of agricultural development projects, and if certain criteria are met less than others.

### **4.4.2 Reliability**

Besides validity, the reliability is important as well. Reliability is closely related to the validity of this study and represents the quality, consistency and measurement of the results. The research is reliable when other researchers will arrive at the same findings if they would follow the exact same steps and use the same documents as this research (Bryman, 2016). To create reliability, this study explains in as much detail as possible what has been done by the researcher and how. Moreover, any assumption made is explained as well. The data used in this research are PADs

and ICRs from the World Bank database. Therefore, the researcher believes the reports should be reliable. Moreover, the reports are open access and can therefore be retrieved by anyone. This means that if someone would like to repeat this research, they could easily extract the same data from the Documents & Report website from the World Bank.

One thing the reliability of this study might be lacking, is that an own conceptual framework was created by the researcher. If someone would perform the same literature review, one could derive a different conceptual framework, since one could find some factors more important than others. Moreover, since it is a case study, i.e. a qualitative research, there is still space for the researcher's own interpretation within the analysis and results (e.g. if some factors are met and others not). However, as mentioned before, critical self-reflection and the discussion of this research aim to explain interpretations and assumptions made.

## 5. Results

This section presents the results of the analysis of the 10 selected agricultural development projects in Africa, finished in the period between 2014-2019. The first section of this chapter presents a project description for every project and includes the outcome of the assessment on expected sustainability. The second section of this chapter presents the results of the analysis, which is structured per factor. For every factor it describes in which projects it came back and in which not, and in what way the factor was used in a project.

### 5.1 The projects

This section gives a description of the project objective, the implementing agency, the total amount of money that has been disbursed for the project, the project components, the project beneficiaries and the outcome of the ICR. The last paragraph of each project describes if projects are expected to have sustained effects, based on the assessment by the researcher. The summary of the full analysis for every project can be found in Appendix II. Important to note is the project rating from the ICRs. This rating describes to what extent the project's objectives were achieved (OPCS, 2006). The scale ranges from Highly Satisfactory till Highly Unsatisfactory, and the meaning of this rating is shown in table 5.1.

**Table 5.1 ICR rating scale (OPCS, 2006, p32)**

<b>Rating</b>	<b>Description</b>
Highly Satisfactory	There were no shortcomings in the operation's achievement of its objectives, in its efficiency, or in its relevance
Satisfactory	There were minor shortcomings in the operation's achievement of its objectives, in its efficiency, or in its relevance.
Moderately Satisfactory	There were moderate shortcomings in the operation's achievement of its objectives, in its efficiency, or in its relevance.
Moderately Unsatisfactory	There were significant shortcomings in the operation's achievement of its objectives, in its efficiency, or in its relevance.
Unsatisfactory	There were major shortcomings in the operation's achievement of its objectives, in its efficiency, or in its relevance.
Highly Unsatisfactory	There were severe shortcomings in the operation's achievement of its objectives, in its efficiency, or in its relevance

#### Project 1. Mozambique – PRIORRI

The first project for appraisal was the PRIORRI project, with the project objective to increase agricultural production marketed and raise farm level productivity in new or improved irrigation schemes in the three provinces in Mozambique. The implementing agency was the national institute of irrigation of Mozambique. In total 69 million US\$ was disbursed by the World Bank for this project. The project consisted of four components. Component one consisted of institutional capacity development and participatory irrigation management (P1, ICR, p9).

Within this component the build irrigation capacity and worked on development and management of irrigation schemes (P1, ICR, p9). Within the second component the construction of irrigation and drainage infrastructure took place. The third component was about the establishment of catalytic funding for beneficiaries through a cost-sharing grant to support production and post-harvest activities (like product processing, storage, marketing, transport). Within this component smallholder farmers and small entrepreneurs (value chain stakeholders) could apply for extra funding through a matching grant for the adoption of agricultural inputs and productive assets (P1, ICR, p10). The fourth component financed project coordination and recruitment of individual consultants (P1, ICR, p10).

The main project beneficiaries were 16,000 farmers located in Mozambique. Other stakeholders who were expected to benefit from the project's capacity building were: 50 government officials at national, provincial and district levels; 80-100 district extension staff; 100 local service providers; 100 value chain stakeholders; and training staff and students.

During project implementation, some changes to the project were made. Funds to component one and two were reduced, and more money went to component four. The scope of the project was scaled down, the number of farmers as beneficiaries was decreased to 6000 and the number of training days was changed from 19660 to 7400. However, the number of technologies demonstrated was increased from five to nine.

For this project, there is a planned follow-up project, which will continue to provide financial, technical and institutional support to the local stakeholders involved (P1, ICR, p15). The project is rated moderately unsatisfactory by the ICR.

Based on the assessment by the researcher the project cannot be expected to have sustained benefits on its own. Main reasons for this are: (1) no sufficient level of capacity at local service providers was reached by the end of the project; and (2) more funding is needed to reap benefits from the project. The project did manage to create new policies for a better environment, included an extensive risk analysis and M&E performance during the project was sufficient.

## Project 2. Mali – Fostering Agricultural Productivity

The second project for appraisal was the Fostering Agricultural Productivity project in Mali. The project objective was to increase productivity of smallholder agricultural and agribusiness producers in the targeted production systems and project areas. The World Bank disbursed 72 million US\$ for this project, and around 16.5 million US\$ was added to the project fund by the UNDP and Local Farmer Organizations in Mali. The main implementing agency was the Ministry of Agriculture of Mali. The project had three components. The first component aimed to increase the adoption of agricultural production technologies. Moreover, it provided support



for farming systems and supply chain modernization; and capacity building for producer organizations and service providers (P2, ICR, p4). The objective of component two was to finance small- and large-scale irrigation infrastructure. The third component focused on project coordination and monitoring (P2, ICR, 4).

The main beneficiaries of this project were smallholder farmers, organized under producer organizations. The project achieved to come to a number of 247,720 direct beneficiaries at the end of the project, which is a bit below the 300,000 number of beneficiaries they had planned to reach.

During the project implementation several changes were made. The closing date of the project was extended, the scope of the project was downgraded, with two out of the five targeted areas being dropped, and reallocation of funds. The project is rated moderately unsatisfactory by the ICR.

Based on the assessment by the researcher the project cannot be expected to have sustained benefits. Main reasons for this are: (1) overestimation of the capacity of local organizations (P2, ICR, p16-17) which resulted in failed project activities' implementation by local organizations; and (2) a lack of support from government agencies towards project beneficiaries (P2, ICR, p18). The project did include local stakeholders in the project design already, technologies used were adapted to local conditions, and project objectives to increase production of farmers were met (P2, ICR, p17).

### Project 3. Rwanda – Third rural sector support project

The third project for appraisal was the Third rural sector support project in Rwanda. The project had two objectives, namely: (1) Increase the agricultural productivity of organized farmers in the marshlands and hillsides targeted for development in an environmentally sustainable way; and (2) strengthen their participation in market-based value chains. The World Bank disbursed 90 million US\$ for this project (P3, ICR, p2). The main implementing agency was the Rwanda Agriculture Board. The project had three components. Component one aimed at developing the physical infrastructure needed to increase agricultural productivity and commercialization in the target areas. It included the components: (1) development of irrigation in cultivated marshlands; (2) promotion of sustainable land management; and (3) development of economic infrastructure for value chain development (P3, ICR, p8). The second component consisted of three subcomponents, namely: (1) capacity building for farmers organizations and cooperatives; (2) capacity building for improved production technologies; (3) capacity building for value chain development (P3, ICR, p8). The third component consisted of project coordination and support.

The main beneficiaries of the project were farmers. In total 101,774 beneficiaries were reached (P3, ICR, p33). During project implementation, some restructuring took place, but none worth mentioning. The project duration was extended with 12 months. All project development indicators were achieved (P3, ICR, p11). The outcomes of the project were rated satisfactory by the ICR.

Based on the assessment by the researcher the project can be expected to have sustained benefits. Main reasons for this are: (1) most local stakeholders have the capacity to continue on their own; (2) the project objectives were met; (3) the project increased strong linkages between local stakeholders by establishing farmer organizations. These organizations managed to establish social funds for their members, which makes them less dependent on funds from other sources (P3, ICR, p17). Lastly, the project matched local institutions and policies, and received substantial government support and engagement (P3, ICR, p18-19).

#### Project 4. Uganda - Agricultural Technology and Agribusiness Advisory Services Project

The fourth project for appraisal was the agricultural technology and agribusiness advisory services project in Uganda. The project objective was to increase agricultural productivity and commercialization of participating rural households by transforming and improving the performance of agricultural technologies and advisory service systems in Uganda. The project objectives were met by the end of the project. The World Bank disbursed an amount of 122 million US\$ for this project. Moreover, several other development partners disbursed 303 million US\$ as well. The main implementing agency at the start of the project was the National Agricultural Advisory Services of Uganda. This changed during the project to a new implementing agency: the Ministry of Agriculture, Animal Industry and Fisheries of Uganda.

The project consisted of five components. The first component included the development of agricultural technologies and the strengthening of the National Agricultural Research System (P4, ICR, p10). The second component focused on improvement of partnerships between agricultural research, advisory services and other stakeholders. The third component was about the strengthening of the National Agricultural Advisory Services, in order to finance the delivery of demand-driven and market oriented advisory services (P4, ICR, p10). The fourth component supported the Agribusiness Services and Market Linkages, to promote integration of smallholder farmers in the value chains (P4, ICR, p10). The fifth component supported project management.

The main beneficiaries for this project were farming households who participated in the project. Since the project focused on both crop yields as well as livestock productivity, farming households belonged to one of those categories.

The project was restructured twice. The first restructuring included a new implementing agency, the Ministry of Agriculture, Animal Industry and Fisheries, instead of the National Agricultural Advisory Service. The project had to introduce a new component which included capacity building of a new extension system (P4, ICR, p12). Moreover, local start-ups were included in the project, and the closing date was extended with 1.5 years. The second restructuring included another extension of the closing date, of +/- 6 months and reallocation of project resources. All project development indicators were achieved. The outcomes of the project were rated moderately satisfactory in the ICR (P4, ICR, p3).

Based on the assessment by the researcher the project can be expected to have sustained benefits. Main reasons for this are: (1) the project achieved its objectives and increased agricultural productivity; (2) incomes of beneficiaries were more than doubled by the end of the project (P4, ICR, p21); (3) beneficiaries were able to recover from external shocks (like drought and plant disease); (4) capacity of local stakeholders was well thought for; (5) sustainable agricultural techniques were promoted (P4, ICR, p27); and (6) the government of Uganda made more funds available for future agricultural projects.

#### Project 5. Africa - African Forum for Agricultural Advisory Services Second Multi-Donor Trust Fund Project

The fifth project for appraisal was the African Forum for Agricultural Advisory Services Second Multi Donor Trust Fund project. The project objective was to reform and strengthen Agricultural Advisory Services in order to increase agricultural productivity and food security. The project had a different aim than the projects appraised before, since direct beneficiaries of the project were more on a national level (like governments from the countries) than on a local level (like small-holder farmers). The World Bank disbursed 5.5 million US\$ in total for this project. The main implementing agency was the African Forum for Agricultural Advisory Services.

The project had three components. The first component was the support of country agricultural advisory services to engage in the Comprehensive Africa Agriculture Development Program. It included capacity building and innovation activities to deliver agricultural advisory services in that specific country (P5, ICR, p9). The second component included the project management, and governance and management of the African Agricultural Advisory Services (P5, ICR, p10). The third component focused on the supervision of the grand and World Bank administration.

The project restructuring included a six-months extension of the project closing date, and reallocation of the fund. Moreover, the fund was increased with 200,000 US\$ in December 2017 (P5, ICR, p15).

The direct beneficiaries of the project were the African Forum for Agricultural Advisory Service, who received support in its functions as a platform, and Agricultural Advisory Services actors, both public and private, who were supported to develop and implement farmer participatory knowledge systems (P5, ICR, p7). In total, 22 countries actually established a country forum because of this project and are the beneficiary countries. Those countries are: Benin, Burkina Faso, Cameroon, Ethiopia, Kenya, Ghana, Liberia, Madagascar, Malawi, Mali, Mozambique, Nigeria, Rwanda, Sierra Leone, South Africa, South Sudan, Sudan, Tanzania, Togo, Uganda, Zambia and Zimbabwe (P5, ICR, p16).

The project did achieve the project development indicators, however there is a risk to the continuation of the project. The African Forum for Agricultural Advisory Services is not able to raise sufficient funding from other sources (e.g. crowd funding, memberships) besides from the World Bank, which is needed to operate on the desired level (P5, ICR, p24). The project was rated moderately satisfactory by the ICR (P5, ICR, p2).

Based on the assessment by the researcher the project cannot be expected to have sustained benefits. Main reasons for this are: (1) the forum that is established does not need the farmers, who are the users of the forum, needs (P5, ICR, p14); and (2) additional funding is needed to continue the operation of the forum on the desired level (P5, ICR, p24).

#### Project 6. Kenya - Agricultural Productivity and Sustainable Land Management Project

The sixth project for appraisal was the Agricultural Productivity and Sustainable Land Management Project in Kenya. This project was a follow-up project, to support and complement the Kenya Productivity and Agribusiness Project on issues of sustainable land use (P6, ICR, p2). The project objective was to facilitate agricultural producers in the targeted operational areas to adopt environmentally-sound land management practices without reducing their incomes. The main implementing agencies were the Ministry of Agriculture and the Ministry of Environment and Mineral Resources of Kenya. The total grant disbursed was 8.22 million US\$.

The project consisted of four components. The first component included the building of capacity for sustainable land management, wherein support was given to both service providers to transfer knowledge, information and technologies to the communities, as well as the local farmers themselves. The second component supported investments in community sustainable land management projects. The third component was about strengthening of the environment for sustainable land management, wherein they looked at the policy and institutional landscape (P6, ICR, p3). The last component was about project coordination, monitoring and evaluation.

The project was restructured once, in December 2015. Because delays in the project implementation the project was extended with one year. Moreover, initially five operation areas

were selected but two were dropped because of concentration of project activities on a few areas for better impact (P6, ICR, p3). There was also a reallocation of funds, with more budget going to the capacity building and less money going to the community sustainable land management projects (P6, ICR, p4).

The main beneficiaries of the project were smallholder farmers in the three operational areas of the project (P6, ICR, p2-3). In total, 28.664 direct beneficiaries benefited from the project (P6, ICR, p12).

The project did achieve most project development indicators, however, many of the project activities were not long enough into operation to say anything about reaped benefits and if they could continue. Moreover, the project aimed at local farmers adopting new technologies, but the adoption rate of the technologies was low, below 50 percent (ICR, p23). Beneficiaries stated this was because of a lack of tools, money and labour to use the technologies (ICR, p23). The project was rated moderately unsatisfactory by the ICR (P6, ICR, pV).

Based on the assessment by the researcher the project one cannot conclude if the project is expected to have sustained benefits or not. Main reason for this is that many of the project activities were not long enough into operation to say anything about reaped or expected sustained benefits. The project did think about capacity building in the project design, which seemed to be successful looking at the ICR, which states that through capacity building local stakeholders were able to share knowledge about sustainable land management and to identify needed interventions (P6, ICR, p19).

#### Project 7. Eastern Africa Agricultural Productivity program

The seventh project for appraisal was the Eastern Africa Agricultural Productivity program. In this project, Ethiopia, Kenya, Tanzania and Uganda were involved. The main project objectives were (1) enhance regional specialization in agricultural research; (2) enhance collaboration in agricultural training and dissemination; and (3) to facilitate increased transfer of agricultural technology, information and knowledge abroad (P7, ICR, pviii). This project was intended to be phase one of an in total ten-year program, which would include two phases. The second phase was supposed to build on the activities of this project. In total 101.2 million US\$ was disbursed for this project (P7, ICR, pvi). The implementing agencies were the Ministries of Agriculture for Ethiopia, Kenya, Tanzania and Uganda (P7, ICR, pVI).

The project consisted of four components. The first component was about the institutional capacity strengthening of regional centres of excellence. The second component included technology generation, training and dissemination. The third component included improved

availability of seeds and strengthening of the environment for regional seed and breed trade (P7, ICR, p4). The last component was the project coordination and management.

The project was restructured twice. There was a reallocation of funds in 2013, and in 2015 the project was extended with two months. The reallocation of funds between the countries was done because of a growing demand from farmers for the improved seeds, breeds and planting materials (P7, ICR, p5).

The main beneficiaries of the project were: (1) Agricultural research and extension services; (2) farmers, who realized higher yields and income; (3) population of the countries who gained better food choices and nutrition; and (4) national agricultural institutions (P7, ICR, p4).

Almost all the project development indicators were achieved. However, the ICR states the following: “*It is possible still to preserve the benefits of Phase I, but, as witnessed during the ICR mission (March 2016), already significant momentum had been lost*” (P7, ICR, p25). The project was rated satisfactory by the ICR.

Based on the assessment by the researcher the project cannot be expected to have sustained benefits. First reason for this is that the project was supposed to have a follow-up project, which would be the ‘second phase’ and strengthen the regional collaboration between stakeholders. This follow-up project never took place. Second reason is that only 4 months after the main project activities had stopped some of the benefits were already lost. Some positive points of the project were the capacity of the local stakeholders that was well thought and the inclusion of local stakeholders in the project design.

#### Project 8. Malawi - Irrigation, Rural Livelihoods, and Agricultural Development Project

The eighth project for appraisal was the Irrigation Rural Livelihoods and Agricultural Development project in Malawi. The project objective was to increase agricultural productivity of poor rural households and strengthen institutional capacity for long-term irrigation development (P8, ICR, p viii). In total, 40 million US\$ was disbursed by the World Bank for this project. The main implementing agency was the Ministry of Agriculture, Irrigation and Water Development of Malawi.

The project consisted of four components. The first component was about irrigation rehabilitation and development, which supported the transfer of irrigation schemes from government to farmers and the development of new small-scale irrigation schemes (P8, ICR, p5). Component two aimed at supporting the beneficiary communities, to improve their returns from irrigation farming. Component three was about the institutional development and aimed at strengthening and restructuring smallholder farmer organization and the Water Users

Associations (P8, ICR, p5). The fourth component supported the project coordination, monitoring and evaluation.

The program was restructured several times, including reallocation of funds, extension of the closing date and some changes were done to the project components. For instance, there were two activities added to component one, which included preparation for future investments and support of efficient water use in the existing irrigation schemes (P8, ICR, p6). Moreover, a new component was added, the Contingency Financing for Disaster Risk Response, which aimed for readiness for disasters if needed (P8, ICR, p6).

The main beneficiaries of the project were farm families, in total 841.235, whereas in the project design they wanted to engage 196.500 farm families (P8, ICR, p4). Other beneficiaries were irrigation water users and farmers in the area; and stakeholders from the government who benefited from institutional development.

Almost every project development indicator was achieved at the end of the project. The project was rated satisfactory by the ICR (P8, ICR, pVI).

Based on the assessment by the researcher the project can be expected to have sustained benefits. Main reasons for this are: (1) the beneficiaries achieved an increase of production and incomes and can be expected to sustain themselves (P8, ICR, p20-22); (2) the project managed to train local stakeholders to achieve the right level of capacity to continue on their own (P8, ICR, p12); (3) local stakeholders were extensively included in the project design; and (4) the project designed a Disaster Risk Response, to deal with risks in the future.

#### Project 9. Angola: Market Oriented Smallholder Agriculture Project

The ninth project for appraisal was the Market Oriented Smallholder Agriculture Project in Angola. The project objective was to increase agricultural production through provision of better services and investment support to rural smallholders in selected communities and municipalities of the Recipient's provinces. The World Bank disbursed 20 million US\$ for this project. The main implementing agency was the Ministry of Agriculture of Angola. This project has a planned follow-up project, named: *The Smallholder Agricultural Development and Commercialization Project*.

The project consisted of three components. Component one was about capacity building, and aimed to strengthen the technical, institutional and managerial skills of smallholder farmers and their organizations (P9, ICR, p3). This component also aimed at improving the capacity of service providers and other stakeholders related to agricultural production. The second component of the project was about agricultural investment support, which aimed to improve the

productivity, effectivity and market access of smallholder farmers (P9, ICR, p4). The third component was about project management and monitoring.

The project was restructured four times. The closing date was extended with 18 months, and funds were reallocated because of a loss of funding in 2013 (P9, ICR, p6). Moreover, the number of beneficiaries were increased during project implementation, because of a delay in the agricultural support activities in component two (P9, ICR, p5).

The main beneficiaries of the project were 54.982 smallholder farmers that benefitted from technical assistance and training, to form smallholder groups and improve their agricultural and marketing knowledge (P9, ICR, p3). Other main beneficiaries were 32.300 farmers who adopted and improved agricultural technologies promoted by the project.

Every project development indicator was achieved. However, there is a risk for sustained project benefits: *“A major risk to sustaining project achievements will be whether investments in improving capacity and skills can be leveraged into greater commercialization and profits for farmers. This will be influenced by Angola’s larger social and economic context, which presents a difficult environment for smallholder farmers to boost production significantly.”* (P9, ICR, p23). The project was rated satisfactory by the ICR (P9, ICR, pV).

Based on the assessment by the researcher the project can be expected to have sustained benefits. Main reasons for this are: (1) there is a planned follow-up project, wherein beneficiaries can grow even further and expand their capacity; (2) the beneficiaries did have increased incomes by the end of the projects. However, important to note is that the institutional environment the beneficiaries are operating in can be a risk if one looks at the outbreak of the second phase of the civil war in Angola and the elections that took place.

#### Project 10. Zambia: Agricultural Development Support Project

The last project for appraisal was the Agricultural Development Support Project in Zambia. The project objective was to support increased commercialization of smallholder agriculture through improved productivity, quality and efficiency of value chains where smallholders participate. The World Bank, co-financed with the Road Development Agency and the National Road Fund Agency, disbursed a grant of 37.2 million US\$. The main implementing agency was the Ministry of Agriculture and Livestock.

The project consisted of three components. The first component provided support to farmers and agribusiness enterprises (P10, ICR, p3). This component included: (1) Supply Chain Credit Facility, which supported investments to improve the existing supply chain; (2) development of innovative business linkages between smallholder farmers and other actors in the value chain; and (3) the improvement of rural roads (P10, ICR, p3). The second component



was about institutional development, which wanted to improve the public sector's capacity to provide services to smallholder farmers to increase their access to markets and increase their productivity. The third project component included the project management and coordination of the project.

The project was restructured three times. The closing date was extended, and funds were reallocated.

The main beneficiaries of the project were smallholder farmers, with a business orientation (P10, ICR, p3). Other beneficiaries were agribusinesses, more commercial farmers, input suppliers, traders and financial institutions, who were all part of the agricultural value chain. Moreover, public actors, like selected departments from the ministry also benefited from the capacity building from the project (P10, ICR, p3).

Almost every project development indicator was met. Moreover, average incomes per household in the targeted areas doubled or even tripled (P10, ICR, p9). The project outcome was rated satisfactory by the ICR.

Based on the assessment by the researcher the project can be expected to have sustained benefits. Main reasons for this are: (1) many of the project indicators were met; (2) incomes for participating households were increased substantially over four times; (3) project activities were taken over by private sector partners; (4) long-term capacity of local stakeholders was build; and (5) the project increased access to areas that were inaccessible previously.

## **5.2 The factors analysed**

This part of the analysis discusses if and how the different factors are present in the different projects found during the analysis. For instance, certain patterns in appearance and use of factors can be found among the projects. Some factors were easier to find and recognize in the appraisal than others. Every factor is described, based on if and how they were applied in the projects and what patterns were found between projects. At the end of every factor, a table presents how the factors were present in the different projects. The factors are scored based on table 5.1. At the end of the section Table 5.15 shows the outcomes of the analysis for every project, show if factors were applied in projects and if the project are expected to have sustained benefits.

**Table 5.1 Scores for appraisal**

<b>Abbreviation</b>	<b>Meaning</b>
S	<b>Satisfactory</b> to contribute to sustained benefits)
U	<b>Unsatisfactory</b> to contribute to sustained benefits)
W	<b>Weakly mentioned</b> in both PAD and ICR
Left blank	<b>Not present</b> in both PAD and ICR

### *Project design*

#### **Sustainability already thought for in design & implementation**

Within every PAD, one could find a section about sustainability of the project. Some projects have described their sustainability aspirations better than others. For instance, P1, P3, P5, P8, P9 and P10 describe in detail how sustainability can be achieved, based on lessons learned from previous projects (P1, PAD, p15-16; P3, PAD, p11-12; P5, PAD, p25; P8, PAD, p5; P9, PAD, p14; P10, PAD, p16-17). In contrast P2, P4 and P7 did include a section on sustainability, but did not give specific criteria or measures on how the sustainability can be achieved (P2, PAD, p16; P4, PAD, p20). Project 6 did think about sustainability in the project design, however during project implementation the focus of the project executors was mostly on establishing activities instead of also developing an exit-strategy and thinking about sustainability (P6, ICR, p8). This was related to the highly compressed project implementation time, because of inaccessible project areas caused by a flood, which caused project delays. This can decrease the sustained benefits of the project, since beneficiaries need to know how to do it themselves in order to continue the benefits of the project.

**Table 5.2 Scores of projects on ‘sustainability already thought for’**

	<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P4</b>	<b>P5</b>	<b>P6</b>	<b>P7</b>	<b>P8</b>	<b>P9</b>	<b>P10</b>
<b>Sustainability already thought for</b>	S	U	S	U	S	U	U	S	S	S

#### **Adaptability of the project to local conditions**

When analysing the adaptability of the project, one can see that every project was restructured during the project implementation phase. Every project extended beyond the original project closing deadline, mostly due to delays in project implementation. Moreover, every restructuring of a project contained redistribution of the allocated resources. In some cases, this was because of a lack of capacity of stakeholders involved, meaning there was a need for more training of stakeholders (e.g. P4). In other cases, less money went to this capacity training. For instance in project 1, funds were reallocated and less money than initially planned went to capacity training,

since more resources were needed to strengthen other components of the project and the project scope was scaled down, wherein the number of farmers who needed capacity training was decreased. For some projects, more drastic changes were made. For instance, in project 1 and project 2 the initial scope of the project was too broad and ambitious, so they decreased the scope, with a decreased number of beneficiaries. The same holds for project 6, wherein they dropped some of the operational areas, in order to concentrate project activities to have the best impact (P6, ICR, p3). However, one can also find an increase of project activities. In project 8 the number of beneficiaries was increased during restructuring of the program, since project activities and outcomes during project implementation went better than initially expected (P8, ICR, p3; P8, ICR, p6).

The adaptability of the project itself to local conditions is sometimes questionable. In P1, P2, P3 and P6, the project was restructured in a way that resources were reallocated, and some of the project development objectives or indicators were changed. One can argue if this restructuring took place because of the local conditions and needs, or if it were more changes related to project executors' wishes. For instance, in project 1 the number of beneficiaries was decreased during project implementation. In the ICRs the score of the project is based on if the project objectives were met or not, and the number of beneficiaries was one of them. So decreasing the number of beneficiaries during project implementation can mean that by the end of the project the number of beneficiaries is achieved. This would imply a positive score for the project by the ICR (e.g. satisfactory), even though it was not the intended number of beneficiaries as stated in the project. For P4, P7, P8 and P9, one can conclude that the project was adapted based on local conditions and needs. For example, in project 4, restructuring took place, wherein local start-ups were included in the project (P4, ICR, p12-14). Similar changes can be found in P7, P8 and P9.

**Table 5.3 Scores of projects on 'adaptability of the project to local conditions'**

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
<b>Adaptability of the project to local conditions</b>	U	U	U	S	W	U	S	S	S	W

### **Capacity of local stakeholders**

Every project included a component of capacity building of local stakeholders, like local farmers, service providers, governmental institutions or other beneficiaries. Therefore, project designers thought about the capacity of local stakeholders within every project design. However, some projects (P4, P5, P6, P7, P8, P9, P10) managed to do this better than others (P1, P2, P3). An example of a project that failed to deliver the right capacity of local stakeholders at the end of

the project is project 1. Herein, the project design did discuss capacity constraints (PAD, p12), but still failed to deliver them: *“Although the idea to implement the project through service providers was commendable, the assumption that there was enough capacity for private service providers to implement the project activities was ambitious. It turned out that service providers lack requisite capacity to implement the project.”* (P1, ICR, p23). Similar examples can be found in project 2 and project 3 wherein some stakeholders did not have the capacity to maintain several implemented systems or implement them at all (P2, ICR, p17; P3, ICR, p24). Some projects (P1 and P3) failed to deliver the right capacity of local stakeholders but have planned follow-up projects wherein they will deal with this lack of capacity. In the case of project 3, it was only the Water User Association that did not manage to come to the right capacity to maintain the technical system. The ICR for this project states that another on-going project will support the association with capacity building in the future, which makes it likely this issue can be solved. Other important stakeholders like beneficiaries did manage to reach the right level of capacity by the end of the project. Therefore, the project is appraised to be satisfactory on this factor.

During project implementation some projects (P4 and P10) found out that the capacity of local stakeholders was lower than they initially thought, which caused project delays in the case of P10. Both projects managed to change some project activities in a way that they could achieve the right level capacity of local stakeholders at the end of the project (P10, ICR, p22).

**Table 5.4 Scores of projects on ‘capacity of local stakeholders’**

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
<b>Capacity of local stakeholders</b>	U	U	S	S	S	S	S	S	S	S

### **Engagement of local stakeholders**

Some projects did engage local stakeholders in the project design already (P2, P4, P5, P7, P8), whereas from others this was not stated anywhere in the PAD or ICR at all (P1, P3, P6, P9, P10). The reasons for engagement of local stakeholders in the project design were as follows: *“Because of the regional nature of the Project, much up front consultation was essential for success. All countries had to be on board for success”* (P7, ICR, p7); *“for successful implementation, stakeholders must be involved in the conceptualization and design of a project. The proposed project has involved extensive consultations with farmers, district assemblies, government, and non-governmental to build understanding and ownership for the project design.”* (P8, PAD, p11); and *“At the governance level it should ensure that farmers are represented in all AFAAS governance structures and within the multi-stakeholder innovation platforms of Country Fora.”* (P5, PAD, p12).

**Table 5.5 Scores of projects on ‘engagement of local stakeholders’**

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
<b>Capacity of local stakeholders</b>		S		S	S		S	S		

### **Suitability of technology**

Suitability of technology as a factor was hard to find in the project designs of most projects. None of the project designs do mention which specific technology they were going to use to increase agricultural productivity or increase sustainable land management. Nonetheless, projects who introduced new technologies did think about capacity of local stakeholders to use these new technologies (P2, P3, P5, P9). Additionally, most of the projects state that the technologies used have been tested and were adopted to match the local conditions (e.g. P2, PAD, p21; P4, PAD, p19). Therefore, most projects mentioning this factor did think about the suitability of the introduced technologies. Only project 6 had a low adoption rate, farmers adopted below 50 percent of the technologies that were introduced, even though they tested the technologies in local conditions and performed a cost-benefits analysis (P6, ICR, p23). Beneficiaries stated this was because of a lack of tools, money and labour to use the technologies (P6, ICR, p23). P1, P7, P8 and P10 did not state anything specific about the suitability of technology at all in the project design.

**Table 5.6 Scores of projects on ‘suitability of technology’**

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
<b>Suitability of technology</b>		S	S	S	S	U			S	

### *Monitoring & evaluation*

Every project appraised contained a monitoring & evaluation (M&E) system. Some of those systems performed better than others. The M&E systems of P1, P3, P4, P5, P7, P8, P9 and P10 were sufficient during project implementation. M&E of these project was detailed and timely, which made it possible to make several improvements to the project during project implementation. However, nowhere in the PADs or ICRs of these projects is mentioned that the M&E systems do continue now that project activities have stopped. The same holds for the M&E systems of P2, and P6, however those M&E systems were less sufficient during the project implementation, which caused a slow start of the M&E system and systems that were not able to collect all information needed in time. This affected project implementation.

Only P4 and P5 have a continued M&E system after project activities have stopped. Project 4 developed an online M&E system, which continues after project activities have stopped (P4, ICR, p26). Moreover, the project will continue monitoring of areas wherein there is a risk

of pest and other diseases as well (P4, ICR, p35). Project members of project 5 are still included in project related activities, and here the M&E activities will continue as well (P5, ICR, p22).

**Table 5.7 Scores of projects on ‘monitoring & evaluation’**

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
<b>M&amp;E - During project implementation</b>	S	U	S	S	S	U	S	S	S	S
<b>M&amp;E - Continuation after project implementation</b>				S	S					

### *Institutional aspects*

#### **Existing policies & policy support**

Projects should meet existing policies in the countries they operate. Most of the projects (P1, P3, P5, P6, P8, P10) did match the local conditions when developing and executing the project and matched the project activities with already existing policies in the countries. Some projects (P3, P4, P6, P8, P9, P10) got a lot of government support as well. In those projects priorities of the government will remain related to agricultural productivity. For example, in project 6, related to sustainable land management, the government lays priority in sustainable land management in the future as well. This can increase the chances of sustained benefits of the project. Some projects (P2, P7, P9) did match the local policies less which caused project delays. However, project 9 can expect policy support in the future, since Angola’s National Development Plan does lay a strong emphasis on agricultural productivity and diversification, which can benefit project outcomes on the long-term as well (P9, ICR, p13).

**Table 5.8 Scores of projects on ‘existing policies & policy support’**

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
<b>Existing policies &amp; policy support</b>	S	U	S	S	S	S	U	S	S	S

#### **Communication between stakeholders**

This factor was sometimes hard to notice in the ICRs. No section really discussed how communication went between involved stakeholders, and how well and clear responsibilities and tasks were divided among stakeholders. However, some projects (P3, P4, P5, P10) contributed to a better communication between stakeholders, e.g. by establishing new organizations, like farmer organizations (P3) or by creating new networks and facilitating better communication via (online) platforms (P5). The improvement of the linkages between stakeholders in project 3 caused the following: “*By also focusing on a variety of other value chain actors (including microfinance institutions, extension service providers, traders) and on establishing the needed*

linkages between farmers and these actors, the Project was well positioned to contribute to improving the livelihoods of these smallholders” (P3, ICR, p7).

In some projects (P1, P2, P6) one can find that communication between stakeholders was not always perfect. For instance, in project 1, M&E performance was influenced by communication between local service providers and M&E staff of the project itself (P1, ICR, p24). In project 2, some project related responsibilities of government agencies could not be carried out, because of their other official duties (P2, ICR, p18).

**Table 5.9 Scores of projects on ‘communication between stakeholders’**

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
<b>Communication between stakeholders</b>	U	U	S	S	S	U				S

### *Economic and financial aspects*

#### **Fair allocation of resources**

The allocation of resources could not be found in every project. Every project did set a goal on how many direct beneficiaries they wanted in the project, so here one could argue the allocation of resources should be divided among them. In one project, they stated they will reach the poorest regions as well (P2), in another they stated resources will be allocated “*from the grass roots level upward*” (P3, PAD, p12). Project 1 aimed for improving access to several services and resources, like financial services, but also access to seeds and fertilizers (P1, PAD, p16). In project 7, they also made sure that seeds and breeds were widely available for local farmers, and funds were reallocated because of the growing demand of farmers for those improved seeds, breeds and planting materials (P7, ICR, p4-5). In project 4, a substantial part of the funds went directly to the government, who allocated the money afterwards (P4, PAD, p15). The project designers know about corruption in this country, so they installed anti-corruption safeguards, and worked on transparency, to make sure the money is allocated as it was supposed to.

**Table 5.10 Scores of projects on ‘fair allocation of resources’**

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
<b>Fair allocation of resources</b>	W		W	W			W			

#### **Benefits recognized**

This factor was the hardest to find in the ICRs and PADs. Most of the projects do not say anything about benefits being recognized by local stakeholders, only in two projects one could find anything about this. In project 6, the following about benefits recognized is stated: “*The project came to an end when farmers were just starting to realize the importance and benefit of the*

*sustainable land management technologies*“ (P6, ICR, p23). Only by the end of the project farmers started to realize the benefits of the project. In project 7, one can see how benefits recognized can help to speed up the project. “*As agricultural scientists went to other EAAPP countries and began experiencing the knowledge/technology exchanges, they became more and more convinced of the regional benefits and the Project picked up speed.*” (P7, ICR, p8). In projects 8, the benefits of the project were recognized by the government, which made them invest more in project activities (P8, ICR, p13).

**Table 5.11 Scores of projects on ‘benefits recognized’**

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
<b>Benefits recognized</b>						S	S	S		

### *No harm to environment*

Most of the projects mentioned environmental sustainability, i.e. the environmental impacts of their projects, only P2 does not. Some projects (P3, P4, P5, P6, P7, P8) are even expected to have positive environmental effects, since those projects provided farmers with sustainable land management practices, promoted more sustainable agricultural technologies or provided the farmers with an online platform to share knowledge about those sustainable practices. All projects mentioning the environmental sustainability are expected to do no harm to the environment.

**Table 5.12 Scores of projects on ‘no harm to environment’**

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
<b>Environmental sustainability</b>	W		S	S	S	S	S	S	S	S

### *External factors*

It is hard to predict which external factors might be of influence for the sustained effects of the projects. However, as mentioned before, most projects contained a risk analysis in the project design. Moreover, some ICRs also included risks for the future (P1, P3, P8, P9, P10). Project 8 identified risks for sustained project benefits in the future, including a risk like a natural disaster (P8, ICR, p23). The project managed to design a ‘*Disaster Risk Response*’, which describes how local stakeholders can deal with this risk in the future (P8, ICR, p6).

Some projects were affected by local wars (P2, P9), drought and rainfall (P3, P4), or plant diseases (P4). This can be external factors influencing sustained benefits in the future.



**Table 5.13 Scores of projects on ‘external factors’**

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
<b>External factors</b>	S	W	S	W	W	W	W	S	S	S

### 5.3 The factors, projects and sustained benefits

Based on the analysis, and the way in which factors were present in a certain project, a prediction can be made if a project is expected to have sustained benefits or not. One can find the results of the analysis in sections 5.1 and 5.2 of this chapter. A full summary with more concrete motivations of why a project is expected to be sustained can be found in Appendix II. Here the full analysis is done per project.

Notable is that the conceptual framework did not include a factor ‘*additional funding needed*’, since a project cannot be expected to be sustainable if beneficiaries need additional funding in order to sustain. During the analysis of the projects the researcher found that some projects (P1, P5, P7) needed additional funding in order to have expected sustained benefits. For example, in the case of project 5 countries needed additional funding in order to operate the created platform on their desired level. For project 6 it was hard to judge if beneficiaries could continue without any extra funding, since project implementation was too short to conclude if incomes of the beneficiaries would continue or not in the coming years (P6, ICR, p17). This factor has been included in the final assessment if projects are expected to have sustained benefits or not. Table 5.14 shows the scores of the projects on this factor.

**Table 5.14 Scores of projects on ‘no additional funding needed’**

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
<b>No additional funding needed</b>	U	S	S	S	U	W	U	S	S	S

Table 5.15 shows if a factor was appraised to be satisfactory to contribute to expected sustained benefits of a project or not. The row in the table that states TOTAL shows how many factors were appraised to be satisfactory present in the project of the in total fourteen factors. The second to last row shows how the project was rated by the ICR. The last row of the table shows if projects are expected to have sustained benefits or not, based on the analysis with use of the conceptual framework. This is an appraisal of the researcher itself, based on how the factors from the conceptual framework appeared in the projects and what the outcomes of the projects were by the end of project implementation. For example, in some projects, beneficiaries needed extra funding in order to continue reaping the benefits, therefore those projects are expected to have no sustained benefits. A project that is appraised to have sustained benefits was appraised to be satisfactory on several factors, e.g. capacity building of local stakeholders, adaptability of the

project to local conditions, matching existing policies and no harm to environment. One can find a detailed description of how the factors appeared in the projects and a summary of the analysis for every project in Appendix II.

**Table 5.15 Projects appraised and expected to have sustained benefits**

<b>Factor/Project</b>	<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P4</b>	<b>P5</b>	<b>P6</b>	<b>P7</b>	<b>P8</b>	<b>P9</b>	<b>P10</b>
Sustainability already thought for in design & implementation	S	U	S	U	S	U	U	S	S	S
Adaptability of the projects to local conditions	U	U	U	S	W	U	S	S	S	W
Capacity of local stakeholders	U	U	S	S	S	S	S	S	S	S
Engagement of local stakeholders		S		S	S		S	S		
Suitability of technology		S	S	S	S	U			S	
M&E - During project implementation	S	U	S	S	S	U	S	S	S	S
M&E – Continuation after project implementation				S	S					
Existing policies & policy support	S	U	S	S	S	S	U	S	S	S
Communication between stakeholders	U	U	S	S	S	U				S
Fair allocation of resources	W		W	W			W			
Benefits recognized						S	S	S		
No harm to environment	W		S	S	S	S	S	S	S	S
External factors	S	W	S	W	W	W	W	S	S	S
<i>No additional funding needed</i>	U	S	S	S	U		U	S	S	S
<b>TOTAL</b>	4/14	3/14	8/14	9/14	9/14	4/14	6/14	10/14	9/14	7/14
<b>ICR Outcome</b>	Mod. Unsatisfactory	Mod. Unsatisfactory	Satisfactory	Mod. Satisfactory	Mod. Satisfactory	Mod. Unsatisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory
<b>Expected to have sustained benefits?</b>	No	No	Yes	Yes	No	Hard to judge	No	Yes	Yes	Yes

**Abbreviations of table: S: Satisfactory, U: Unsatisfactory, W: Weakly mentioned, Left blank: Not present**

Projects are not appraised in a way that they would have sustained benefits if they would meet six out of fourteen factors. It is a combination of factors that makes the projects to have expected sustained benefits or not, which differs from project to project. This is debated on in the discussion. Projects that were rated satisfactory by the ICR are not always expected to have sustained benefits based on the researcher's analysis. For instance, project 5 did include eight out of thirteen factors, which is, compared to other projects, quite high. Additionally, the project scored satisfactory by the ICR, since it did achieve all project development indicators. However, the project is not expected to have sustained benefits, since the project beneficiaries needed extra funding in order to continue project outcomes. The project also failed to meet the needs and wishes of farmers for the established platform, while farmers are the main users of the platform. So even though project 5 included eight out of fourteen factors, the project is still expected to have no sustained benefits. A detailed explanation is given in the next chapter: the discussion of findings.

## 6. Discussion of findings

This section discusses the results from the analysis, and discusses the outcomes of table 5.15, and why some projects are expected to have sustained benefits over others. Moreover, it links the way factors were found in the analysis to the literature, to find certain patterns. Lastly, it discusses if certain factors are necessary for sustained benefits in agricultural projects.

Literature draws attention to the fact that if projects want to have sustained benefits, they should think about that already during project design and implementation (Pluye et al., 2004; Savaya & Spiro, 2011). In the projects, one could find this attention to sustainability as well: every PAD contained a section about sustainability. However, for some projects it was more a 'check the box' that this section about sustainability was included, instead of really include it and think about how sustained benefits can be achieved in the project. Furthermore, thinking about sustainability in the project design and implementation, does not always guarantee sustainable outcomes as described in literature. One project, project 5, described in detail how sustainability could be achieved, based on previous projects, but is not expected to have sustained benefits. However, four out of five projects who included a detailed description on how to achieve sustainability are expected to have sustained benefits. Lastly, if a project adds sustainability in the project design, project implementors should make sure that there will be thought of during the implementation of the project as well. This factor cannot be seen as necessary to have expected sustained benefits for agricultural development projects, however including it can contribute to sustained benefits in agricultural projects. Thinking about sustainability already in the project design, makes project designers also consider other factors from the conceptual framework, e.g. capacity building of local stakeholders, or how the project fits current governmental policies.

In literature, one could identify a strong emphasis on the capacity of local stakeholders (e.g. Chianca, 2008; Kusnandar et al., 2019; Nordhagen et al., 2019; Wiltsey Stirman et al., 2012). This strong emphasis can also be found in the projects: every project included an element of capacity building of local stakeholders. This could be in the form of capacity building or training during project implementation of smallholder farmers, local service providers, or governmental organizations. However, three out of ten projects failed to have the capacity of the local stakeholders at a level to sustain on their own by the end of the project. It can be hard to estimate the capacity of local stakeholders at the stage of project design, especially when stakeholders are not interviewed or engaged in the project design. This was the case with one (P1) out of two projects who did not manage to achieve the right capacity by the end of the project.

The capacity of local stakeholders is assumed to be a necessary factor for sustained benefits of agricultural development projects. The study of Nordhagen et al., (2019) identified that the main reason local farmers could not sustain benefits, was because they did not have the right capacity to continue. Farmers should be capable to use the new technologies introduced in the projects on a daily basis, without any assistance. Adding to that, the projects appraised by the researcher to have sustained benefits all managed to come to the right capacity of important beneficiaries by the end of the project. Exception is project 3, appraised to have expected sustained benefits, did not manage to have a sufficient level of capacity of all local stakeholders. In the case of this project it was only the Water User Association that did not manage to come to the right capacity. Other important beneficiaries (e.g. farmers) did manage to reach the right level of capacity. Therefore, one could say that having sustained benefits based on capacity depends on which stakeholders have a lack of capacity and which not.

Engaging local stakeholders in the project design, does not always guarantee successful project outcomes tailored to local wishes and needs. For example, project 5 did include local stakeholders in the project design, but when reviewing the ICR, the forum that was established in project 5 did not meet the farmers' needs, and the forum should be reformed (ICR, p14). The opposite can be true as well, project 3, project 9 and project 10 did not include local stakeholders in the project design but are expected to have sustained benefits. This is in contrast with findings in literature, because many authors argued this factor is important for sustained benefits (e.g. Chianca, 2008; Ika, 2012; Iwuchukwu & Beeior, 2018; Kusnandar et al., 2019; Matthew & Olatunji, 2016). In the results of the analysis one can find that projects who do not include local stakeholders in the project design are able to have expected sustained benefits as well (e.g. P3, P9, P10). Therefore, this factor cannot be seen as necessary, but as contributing to sustained benefits.

A factor that was found important in literature as well was monitoring & evaluation. Herein, literature pays attention to the fact that agricultural production should be monitored not only during the project, but also afterwards (Iwuchukwu & Beeior, 2018; Matthew & Olatunji, 2016; Meki Kombe & Herman, 2017; Scheirer, 2005; Wiltsey Stirman et al., 2012). In contrast to the findings in literature, the analysis showed that continuation of M&E activities after the project has ended is low. Only two out of ten projects intend to continue M&E activities now that main project activities have stopped. The analysis did find that all projects who are expected to have sustained benefits had a sufficient M&E system during project implementation, to track errors and pitfalls, and adjust project activities based on M&E outcomes. Therefore, a good M&E system during project implementation is necessary for sustained benefits. Based on the analysis

one cannot conclude anything about the effects of continuation of M&E after project activities have stopped.

Another factor that is necessary for expected sustained benefits of agricultural projects is existing policies and policy support. Five out of five projects appraised to have sustained benefits did match the existing policies from the project's receiving country and received policy support, e.g. from the government. The same holds for no harm to environment: all projects with expected sustained benefits cause no harm to the environment and promoted sustainable practices or technologies.

A notable finding from the analysis that can be linked to the literature are the benefits recognized by stakeholders. Most of the projects did not state anything about it, however in the projects that did, one could see positive effects for project implementation and stakeholders' commitment. In project 7 the recognition of benefits by stakeholders speeded up the project activities. Moreover, in project 8 the government recognized the benefits the project brought, which increased their investments in the projects. Both gave a positive input in the projects. In literature one could read that if local stakeholders recognized project benefits, this could increase their trust in the project (Kusnandar et al., 2019; Meki Kombe & Herman, 2017; Savaya & Spiro, 2011; Scheirer, 2005).

To conclude, not all factors have to be present in the projects in order to have expected sustained benefits. Table 5.15 showed that projects that were expected to have sustained benefits did not match all factors from the conceptual framework. Literature also did not suggest that all factors from the conceptual framework should be met, but that if factors are included the chances of sustained benefits are higher. For instance the DAC criteria for sustainability includes five dimensions, but also note that potential trade-offs between those dimensions should be made (OECD, 2019).

Factors that are necessary to have expected sustained benefits are capacity of local stakeholder; existing policies and policy support; M&E during project implementation; and no harm to environment. Additionally, beneficiaries should need no additional funding, but this was not a factor from the framework and is highly related to sustained benefits. Other factors from the conceptual framework can contribute to sustained benefits but are not necessary. For example, sustainability already thought for in project design or benefits recognized were not factors that are needed to have expected sustained benefits.

## 7. Conclusion

This research aimed to assess to what extent the criteria for project sustainability are important for the expected sustainability of agricultural development projects. The main research question was: *'To what extent are the criteria for project sustainability derived from literature important for the expected sustainability of agricultural development projects?'*

In order to answer this research question, sub-questions had to be answered first. The first sub-question of the study was: *'What factors can predict the long-term sustainability of development projects, in particular agricultural development projects?'*. This question was answered by the literature review, which resulted in a conceptual framework with twelve important factors for sustainability for agricultural development projects. The second sub-question was: *'How do the factors of long-term sustainability found in literature come back in real-life agricultural development projects?'*. The factors from the framework came back differently in the projects. For instance, every project included a section of sustainability already in the project design, but some did this better than others. The last sub-question to be answered was: *'To what extent can agricultural development projects be expected to have sustained benefits, based on the factors found in literature?'*. Based on the assessment by the researcher, five out of ten projects are expected to have sustained benefits.

To answer the main research question the results of the analysis were discussed. Main findings were that not all factors from the conceptual framework need to be included in the projects in order to have expected sustained benefits: none of the projects did involve all factors. Factors that are necessary to have expected sustained benefits are capacity of local stakeholder; existing policies and policy support; M&E during project implementation; and no harm to environment.

Overall improvements in agricultural development projects can be done by having continued monitoring and evaluation after projects have stopped, because only two out of ten projects were doing this. Moreover, local stakeholders can be included more in the project design and be really listened to in order to match the project activities to local conditions and the wishes and needs of local stakeholders. Projects did well on the existing policies and policy support, by tailoring their projects to local policies. Additionally, every project did think about the capacity of local stakeholders, which is valuable for expected sustained benefits as well. However, for some projects it was hard to estimate the capacity of local stakeholders at the stage of project design, especially when they are not interviewed or engaged in the project design. This can be an improvement in agricultural development projects as well.

This research included some limitations. The first limitation can be found in the fact that the researcher made her own conceptual framework for the appraisal of the projects. The framework was based on an extensive literature review, however other researchers might have found other factors more important to include. Moreover, some factors were hard to identify in the project, i.e. some factors were hard to find in both the PADs and ICRs. For instance, the allocation of resources, wherein every farmer should have equal access to resources was quite hard to find in the documents. Moreover, the factor communication between stakeholders during project implementation was hard to recognize in every project. In some ICRs one could find something about conflicts or delayed communication between stakeholders (e.g. P3), but nowhere was stated how clear the communication between stakeholders was, and if roles and responsibilities were well allocated. This was found important in literature (Iwuchukwu & Beeior, 2018; Matthew & Olatunji, 2016), but could not be found in the two reports. Therefore, following this analysis, one cannot draw concrete conclusions if projects did think about those factors or not, or say anything about how this can be improved in projects to have sustained benefits. A last limitation can be found that projects that have been appraised were just appraised by the PADs ICRs, and not by a document how project benefits were continued after five years or later after main project activities had stopped. This would give even better insights in how agricultural development projects are actually sustainable, and what can influence this sustainability. Yet due to the availability of data, ICRs and PADs were used for appraisal of the projects.

One of the findings from this study was that, even though there is much emphasis in both literature as well as in the projects themselves on capacity building, some projects still failed to achieve the desired level of capacity of local stakeholders by the end of the project. Therefore, a recommendation for future research would be to research why this is, and how project developers and executors can overcome this capacity problem in future projects. This can help to increase the number of agricultural development projects to have expected sustained benefits. Another finding of this study was that even though several authors argued that monitoring and evaluation should continue after main project activities have stopped, only two projects did. Future research could look at why few projects continue monitoring and evaluation activities, and what the impact is of not continuing those activities on the sustained benefits of those projects.



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## Appendix I – Results literature review

**Table I.1 Factors of sustainability general development projects**

<b>Factor</b>	<b>Mentioned by authors</b>
Policy support	Chianca (2008); DANIDA (2006);
Social, cultural & local values; match cultural aspects and local conditions	Chianca (2008); Meki Kombe & Herman (2017); Ika (2012); Muriithi & Crawford (2003)
(Pick/Use of) Technology	Chianca (2008); DANIDA (2006);
Capacity	Chianca (2008); Wiltsley Stirman et al. (2012)
Including local stakeholders	Chianca (2008);
Environmental elements	DANIDA (2006)
Institutional aspects	DANIDA (2006)
Economic/Financial aspects	DANIDA (2006)
External Factors	DANIDA (2006)
Sustainability already thought for in design & implementation	Pluye et al. (2004); Savaya & Spiro (2011)
Modification of programme	Scheirer (2005)
Team-leader is present	Scheirer (2005); Savaya & Spiro (2011)
Program fits organisation's mission	Scheirer (2005)
Added value seen by local stakeholders	Scheirer (2005); Savaya & Spiro (2011)
Support by other stakeholders	Scheirer (2005)
Way project is funded (internal/external; i.e. if project opposed, or own initiative/ initiated by local stakeholders?)	Scheirer (2005); Pluye et al. (2004); Meki Kombe & Herman (2017)
Resources (like funding, marketing)	Savaya & Spiro (2011)
Beneficiaries do continue	Meki Kombe & Herman (2017)
Monitoring and evaluation continue	Scheirer (2005); Meki Kombe & Herman (2017)
Local stakeholders included in early time of program	Ika (2012)
Context (like policies, laws, culture)	Wiltsley Stirman et al. (2012)
Project itself (like adaptability & effect)	Wiltsley Stirman et al. (2012)
Processes (monitoring & evaluation)	Wiltsley Stirman et al. (2012)

**Table I.2 Factors of sustainability specific for agricultural projects**

<b>Factor</b>	<b>Author</b>
Location of farm	Fuchs et al. (2019)
Local farmers willing to participate	Fuchs et al. (2019)
Passion by farmers	Nordhagen et al. (2019)
Capacity local farmers	Nordhagen et al. (2019)
Perception of local stakeholders towards technology used	Iwuchukwu & Beeior (2018)
Technology too costly	Mignouna et al. (2011)
Bureaucracy	Iwuchukwu & Beeior (2018)
Not well distributed fund	Iwuchukwu & Beeior (2018)
Poor government support	Iwuchukwu & Beeior (2018)
Monitoring & Evaluation	Iwuchukwu & Beeior (2018)
Inclusion of local stakeholders (already in planning)	Iwuchukwu & Beeior (2018)
Poor interaction between stakeholders	Iwuchukwu & Beeior (2018)
Political instability (external factors)	Matthew & Olatunji (2016)
Availability of resources (like human capacity & material goods)	Matthew & Olatunji (2016)
Non-involvement of relevant stakeholders	Matthew & Olatunji (2016)
Communication between stakeholders	Matthew & Olatunji (2016)
Monitoring & Evaluation	Matthew & Olatunji (2016)
Economic factors (production; market; logistics, transportation and communication infrastructures; financial infrastructures; capacity development)	Kusnandar, Brazier & Kooten (2019)
Environmental factors (water, land and air; biodiversity; food safety)	Kusnandar, Brazier & Kooten (2019)
Social factors (engagement; empowerment; trust)	Kusnandar, Brazier & Kooten (2019)
Governance (formal and informal institutions)	Kusnandar, Brazier & Kooten (2019)



**Table I.3 Factors selected, influence on sustained benefits and corresponding authors**

<b>1. Project design</b>	<b>Influence on sustained benefits</b>	<b>Mentioned by authors</b>	<b>2. Monitoring &amp; Evaluation</b>	<b>Influence on sustained benefits</b>	<b>Mentioned by authors</b>	<b>3. Economic and financial aspects</b>	<b>Influence on sustained benefits</b>	<b>Mentioned by authors</b>			
<b>Sustainability already thought for in project design &amp; implementation</b>	Positive, if there is thought for in project design	Pluye et al. (2004); Savaya & Spiro (2011)	<b>Monitoring &amp; evaluation</b>	Positive, if M&E is done correctly during project implementation and after main project activities have stopped	Matthew & Olatunji (2016); Iwuchukwu & Beeior (2018); Wiltsey Stirman et al. (2012); Scheirer (2005); Meki Kombe & Herman (2017)	<b>Fair allocation of resources</b>	Positive, if beneficiaries have equal access to resources and if resources are accessible for beneficiaries after main project activities have stopped	Savaya & Spiro (2011); Iwuchukwu & Beeior (2018); Matthew & Olatunji (2016)			
<b>Adaptability of the project to local conditions</b>	Positive, if project is able to adapt to local conditions	Scheirer (2005); Wiltsey Stirman et al. (2012); Chianca (2008); Meki Kombe & Herman (2017); Ika (2012); Muriithi & Crawford (2003); DANIDA (2006)							<b>Benefits recognized</b>	Positive, if beneficiaries recognize possible project benefits before project start or right after project has started	Meki Kombe & Herman (2017); Kusnandar, Brazier & Kooten (2019); Scheirer (2005); Savaya & Spiro (2011)
<b>Capacity of local stakeholders</b>	Positive, if capacity of local stakeholders is estimated correctly	Chianca (2008); Wiltsey Stirman et al. (2012); Nordhagen et al. (2019)									
<b>Engagement of local stakeholders</b>	Positive, if local stakeholders are engaged in project design	Chianca (2008); Fuchs et al. (2019); Ika (2012); Iwuchukwu & Beeior (2018); Matthew & Olatunji (2016); Kusnandar, Brazier & Kooten (2019)									
<b>Suitability of technology</b>	Positive, if technologies meets local conditions and local stakeholders can use technologies on their own	Chianca (2008); Iwuchukwu & Beeior (2018); DANIDA (2006); Mignouna et al. (2011)									
<b>4. Institutional aspects</b>	<b>Influence on sustained benefits</b>	<b>Mentioned by authors</b>	<b>5. Environment</b>	<b>Influence on sustained benefits</b>	<b>Mentioned by authors</b>	<b>6. External factors</b>	<b>Influence on sustained benefits</b>	<b>Mentioned by authors</b>			
<b>Existing policies &amp; policy support</b>	Positive, if existing policies correspond project needs and if government supports project activities	Chianca (2008); DANIDA (2006); Wiltsey Stirman et al. (2012); Scheirer (2005); Iwuchukwu & Beeior (2018); DANIDA (2006)	<b>No harm to environment</b>	Positive, if no harm to environment is done and soil stays fertile	DANIDA (2006); Kusnadar et al.	<b>Risk analysis included</b>	Positive, if risks are correctly identified and mitigation measures are given	DANIDA (2006); Matthew & Olatunji (2016)			
<b>Communication between stakeholders</b>	Positive, if all stakeholders involved receive the right information and communicate with one another	Matthew & Olatunji (2016); Iwuchukwu & Beeior (2018)									

## Appendix II – Analysis Agricultural Development Projects

This appendix describes in-depth the results of the analysis done. For every project, it gives the project objective and time period of project implementation. Afterwards, a summary of the project analysis is given, showing all the components of the conceptual framework.

### List of abbreviations

PAD = Project Appraisal Document

PD = Project Design

PDO = Project Development Objective

ICR = Implementation Completion Report

M&E = Monitoring & Evaluation

### Project 1. Mozambique – PRIORRI

**Project objective:** Increase agricultural production marketed and raise farm level productivity in new or improved irrigation schemes in the Provinces of Sofala, Manica and Zambezia.

**Start date / end date:** 10 Dec 2011 / 28 Sept 2018

### Summary

This project has a follow-up project. Within the project, they did not manage to let the local stakeholders have the capacity to sustain the benefits from the projects. In the PAD, one can find that the PD did include capacity building of local stakeholders, for instance, for the implementation the PAD states the following: *“To address capacity constraints with the implementing agency and the need to strengthen its skills, PROIRRI will be coordinated by a Project Coordination Team (PCT), which will be semi-integrated in MINAG/DNSA and also represented at the provincial level where it will be hosted by the DPAs.”* (PAD, p12). However, during the project implementation, they came to the following conclusion: *“Although the idea to implement the project through service providers was commendable, the assumption that there was enough capacity for private service providers to implement the project activities was ambitious. It turned out that service providers lack requisite capacity to implement the project.”* (ICR, p23)

Within the project design, one cannot find the engagement of local stakeholders specifically. However, the project has thought about sustainability already in the project design. They state: *“PROIRRI has been designed with particular attention to sustainability issues, as*

*highlighted in the following project core principles: Irrigation development needs to be socially, environmentally and financially sustainable to ensure lasting benefits to smallholders and society.” (PAD, p15)* Moreover, Risks were correctly identified, and mitigation measures were adequate. Virtually all risks relevant to the achievement of the PDO were identified during design.

The monitoring & evaluation was good, they monitored data on project activities, outputs and outcomes regularly. However, sometimes there was a delayed communication between service providers and the M&E team. The M&E system was adjusted overtime, implementing lessons learned from the beginning of the project (ICR, p24).

Looking at the institutional aspects, the project did match the existing policies & policy support and created new policies to have a better environment (PAD, p7). So here they can be expected to be sustainable. However, the communication between stakeholders was not always perfect. Not much can be read about it in the ICR, but it stated that the communication between service providers and the M&E staff of the project was sometimes delayed, which influenced M&E performance (ICR, p24).

The economic and financial aspects are not expected to contribute to the sustainability of the project. As stated in the ICR, more funding is needed to reap benefits from the project. This means that local stakeholders are not able to sustain on its own. However, providing funds to local stakeholders was demand-driven, and local stakeholders should write a project proposal in order to get funding (PAD, p13) and sometimes even contribute themselves (PAD, p15). This can make them more committed to the project instead of just receiving funds (Meki Kombe & Herman, 2017), which contributes to the sustainability of the project. Looking at the allocation of resources, the project aimed at improving the access to several services and resources, like financial services and access to seeds and fertilizers (PAD, p16). This contributes to sustained benefits, if the allocation of resources is sustained as well.

Environmental sustainability and external factors are thought for as well. For instance, they thought of flooding and weather risks as the potential risks of project outcomes (ICR, p28). However, the ICR does not state how they mitigated these risks, only how the follow-up project can mitigate this risk.

To conclude, the PRIORRI project cannot be expected to sustain on its own. The follow-up project IRRGA would continue to provide financial, technical, and institutional support to the local stakeholders involved in this project (ICR, p15). So it is good they have a follow-up project, but using the factors that are important for developing projects in order to sustain, one can conclude the project cannot be expected to sustain on its own. Most important reason for this is the capacity of local stakeholders to sustain.

## Project 2. Mali-Fostering Agricultural Productivity

**Project objective:** The Project Development Objective is to increase the productivity of smallholder agricultural and agribusiness producers in the targeted production systems and project areas.

**Start date / end date:** 19-Jun-2010 / 31-Jul-2019

### Summary

The Mali Fostering Agricultural Productivity project aimed at improving productivity. The increase of productivity was achieved (ICR, p17). They did think about capacity building in the project design well, but still did not overestimate the capacity of local organizations. So in the end of the project some organizations failed to implement project activities, even though they had capacity training. This makes it that sustained benefits are expected low, since local stakeholders and organizations should be able to have the right capacity to implement and sustain benefits themselves.

Looking at the project design, it contained a section of sustainability. However, Within the PAD (p16), they give five criteria of how sustainability can be achieved, but they do not state how they can make sure how this sustainability is achieved or what the risks are if those criteria are not achieved. So, they have included sustainability, but not really thought about it in this part of the PAD. In the project implementation, they build sustainability by engaging many national systems and institutions, however there was some miscommunication from those national systems and institutions they would get additional resources for being engaged (ICR, p20). The program can be seen as adaptable, since it was restructured four times, wherein the allocation of resources changed, some things from implementation scheme changed and some of the project was extended with two years (ICR, p5; ICR, p8; ICR, p19).

The project design did include capacity training of several local stakeholders and institutions (PAD, p7; PAD p11). Even though there was a significant overspending on capacity training (ICR, p16), the project still did not manage to train service providers, like the *Permanent Assembly of Mali Agricultural Chambers* and other local organizations, to have the right capacity to deliver project activities in time (ICR, p17). One can conclude here that the project overestimated the capacity of local stakeholders in de project design PD.

Within the project design, they did engage local stakeholders. For instance, the project was prepared in close collaboration with the *Permanent Assembly of Mali Agricultural Chambers* and the *Coordination Nationale des Organisations Paysannes*. Moreover, producer groups were

invited for regular consultations, and the project appraisal was discussed with them as well (PAD, p22).

The technologies used in this project to increase agricultural productivity have been tested and were adopted to local conditions in the project design (PAD, p21). One component of the project was to introduce new technologies to the project beneficiaries (PAD, p7). Within the PD they have thought about the capacity of the project beneficiaries for adapting these technologies by providing them with capacity support (PAD, p7). The PD also included a risk analysis, with mitigation of factors.

M&E activities were implemented well during the project, however there were many indicators to monitor at the beginning of the project and M&E implementation during the first years were slow, which made it less sufficient (ICR, p19).

Analyzing the institutional aspects, the existing policies and policy support seems to be satisfactory. During project implementation, there were no problems with existing local policies standing in the way of project development. However, as mentioned before the institutional capacity of local institutions was lacking. Moreover, communication between the stakeholder involved was lacking sometimes. For instance, government agencies were supposed to provide support to the project beneficiaries but did not do so because of their other official duties (ICR, p18). Here communication was lacking. However, despite of some delays in the project, some of the beneficiary farmers were able to plant, because collaboration between Office du Niger and other project leaders was fast and clear, and clear tasks and responsibilities were designed (ICR, p25).

The economic and financial aspects provide a basis for sustained benefits as well. The project managed to meet the objectives of increasing production, and increasing households' incomes (ICR, p17). This makes it possible for households to sustain production with their increased incomes. Moreover, the PD contained an element, wherein they stated to reach the poorest regions as well (PAD, p6). Herein, they think about allocation of resources in a way that they want to target the poorest people as well.

Environmental sustainability is not explicitly mentioned in both the PAD and the ICR. The project does think about external factors as threats, like weather events as a big threat to the project. The project was affected by a war in 2012, they did not think about this in the PAD (ICR, p2).

### Project 3. Rwanda – Third Rural Sector Support Project

**Project objective:** In line with the overall APL objective and its programmatic phasing, the Project Development Objectives (PDOs) for RSSP3 are to:

- (i) Increase the agricultural productivity of organized farmers in the marshlands and hillsides of sub- watersheds targeted for development in an environmentally sustainable manner;and
- (ii) Strengthen their participation in market-based value chains.

**Start date / end date:** 20 June 2012 / 30 October 2018

### **Summary**

This project was a follow-up project from the first and second rural sector support projects in Rwanda. The project is expected to have sustained benefits, since most local stakeholders have the capacity to continue on their own, and project objectives were met. Moreover, the project increased strong linkages between local stakeholders, e.g. by establishing farmer organizations. Those organizations also managed to establish social funds for their members, which makes them less dependent on funds from other sources (ICR, p17). The project was in line with local institutions and policies, and received substantial government support and engagement (ICR, p18-19).

Starting with the PD, they did think about sustainability already in the PD (PAD, p11-12). They build on lessons learned in the First and Second Rural Sector Support Project, for example by better allocation of capacity building for local farmers and by integration of participatory value chain activities to increase local farmer participation (PAD, p12).

Looking at the adaptability, it was restructured two times during implementation (ICR, p8). This was mostly reallocation of the funds, but they also changed some of the project development objectives and indicators (ICR, p9-10). It says the project can be adapted; however, it does not really state anything about adaptability to the local conditions.

The capacity of local stakeholders is thought for already in the project design. One of the sub-components of the project (sub-component 2.3) aims at capacity building of farmers for value chain development, by increasing their knowledge about agribusiness principles (PAD, p7). In the ICR, one can find that this component was successful, and farmers are able to continue on their own (ICR, p13). Moreover, the PD states that they aim at increasing the capacity of local organizations, like the Water User Associations (WUAs) (PAD, p7). The ICR states that there was a failure to build the right capacity of this association to maintain the technical water system that was installed (ICR, p24). This can influence the sustainability of the project. However, the ICR states that capacity building of this aspect will be supported by another on-going project, namely SAIP (ICR, p24).

Within the PAD, one cannot really find the engagement of local stakeholders already in the PD. Nowhere in the PAD is stated that the project has been designed in collaboration with local stakeholders. Within the project, several technologies are used to increase the agricultural productivity of farmers. The PAD states they will promote cost-effective soil moisture retaining technologies to increase productivity (PAD, p6). Those technologies have been successfully adopted by the local farmers, as one can read in the ICR (ICR, p12). Moreover, the PAD also included a risk analysis, wherein they include risks for the projects and give several mitigation measures (PAD, p12-13).

Because there were already two phases of the project executed, before this phase was carried out, there was already a strong M&E framework present (ICR, p20). The monitoring was detailed and timely, and indicators were tracked over time (ICR, p20). The ICR does not state if the M&E framework present will continue tracking the performances of beneficiaries now that main project activities have stopped.

Looking at the institutional aspects, the project performs well. For instance, the government was during the project fully engaged and helped with coordination (ICR, p19). This government support can be expected to continue. Moreover, the project did comply with existing policies as well: they took the lessons learned from the previous Rural Sector Support Projects and adjusted their activities on existing policy framework (ICR, p18). Moreover, they established farmer organizations, to strengthen the farmers' activities and collaboration among them (ICR, p15). Moreover, the ICR states the following: "*By also focusing on a variety of other value chain actors (including microfinance institutions, extension service providers, traders) and on establishing the needed linkages between farmers and these actors, the Project was well positioned to contribute to improving the livelihoods of these smallholders*" (ICR, p7). Here it also improved the communication between stakeholders. In the PAD, they state they will have a communication team as well, to make sure that the communication between all channels are up-to-date and everyone receives the right information at the right time (PAD, p11).

The economic and financial aspects are established good as well. The established farmer organizations are financially sustainable according to the ICR (ICR, p24). Moreover, resources were allocated to local stakeholder, as the project states from "*from the grass roots level upward*" (PAD, p12). Moreover, the ICR revealed that cooperatives developed social funds to help local farmers to maintain their social lives, which makes the project sustainable as well (ICR, p17). Moreover, the economic analysis of the ICR showed that substantial benefits were reaped for the included farming communities (PAD, p14).

Looking at the environmental sustainability, the project did good as well. Many farmers participated and had more sustainable land management practices as compared to before the

project (ICR, p13). This contributes to sustained benefits. Moreover, the environmental impacts of the project are likely to be short-term and easy to correct (ICR, p18).

Lastly, some external factors can be a risk: mostly weather-related factors. The project was affected by drought and rainfall in 2016, and this can be the same case in the future as well (ICR, p19). The political environment was stable during the project implementation, but can be a risk in the future as well.

#### Project 4. Uganda - Agricultural Technology and Agribusiness Advisory Services Project

**Project objective:** The Project Development Objective is to increase agricultural productivity and commercialization of participating rural households by transforming and improving the performance of agricultural technology development and advisory service systems in Uganda

**Start date / end date:** 20 December 2011 / 15 June 2018

#### **Summary**

The project is likely to have sustained benefits. The project achieved its objectives and increased agricultural productivity and incomes of households who participated in the project (ICR, p17). Moreover, the agricultural incomes of project beneficiaries were more than doubled at the end of the project (ICR, p21). This makes them more likely to continue on their own. Moreover, beneficiaries of the project were caught by some external shocks during the project (e.g. pest, plant disease and drought), but they did manage to incalculate those shocks and continue their activities (ICR, p20). This also is an important factor showing the project benefits can sustain. Moreover, capacity of local stakeholders was well thought for (ICR, p22), and when the project executors found out more capacity training was needed, they allocated more money to this aspect. The institutional environment is stimulating as well, the government of Uganda contributed to the project and even made more funds available for future agricultural projects, which can be a stimulating environment, also for sustained benefits of this project. Moreover, sustainable agricultural techniques were promoted (ICR, p27). From the analysis one can conclude this project is likely to have sustained benefits.

Starting with the PD, the PAD mention sustainability, and state that this completely depends on how the benefits arise among the farming communities (PAD, p20). However, they don't mentioned measured they take to achieve this, or to make sure how to achieve this goal, they only stated they will provide small-scale farmers with environmentally sustainable alternative technologies (PAD, p20).



The project was restructured, in a way that project activities were adjusted. For example they included start-ups in the project, to reap more benefits (ICR, p12-14). One can say that it was adapted based on the local conditions, which contributes to sustained benefits. Moreover, the capacity of local stakeholders was well thought for. In the restructuring, they also increased capacity building projects of local stakeholders (ICR, p22). The PAD especially stated that capacity building and training programs were to be included in the project activities to strengthen the capacity of local stakeholders (PAD, p9; PAD, p18).

The ICR states the following about engagement of local stakeholders in the Project Design phase: *“In the preparation phase, mostly western parties committed, like the World Bank, DANIDA, EU. However, mission included NARO and NAADS to facilitate and review the preparation of a joint proposal on the implementation arrangements for the design of a better R&E interface and collaborative activities such as M&E to ensure institutionalization at all operational levels”* (ICR, p28). So as one can see, the project did include local stakeholders in the PD. Within the PD, there was no specific technology picked yet (PAD, p8). However, the PAD states that the pick of technology to improve productivity, will be depended on local conditions, and new technologies will be tested under the local conditions (PAD, p19). The PD did also include a risk analysis, naming 13 risks and given several options on how to mitigate those risks (PAD, p20-22).

The M&E framework was during project implementation implemented insufficient (ICR, p30). This had several reasons, like a delayed development of the M&E manual, absence of a digital management information system and changes in implementation agencies (ICR, p30). This influenced project implementation monitoring. However, the project did develop an online M&E system, which continues after project activities have stopped (ICR, p26). Additionally, monitoring of areas wherein there is a risk of pest and other diseases will continue as well (ICR, p35). This contributes to the sustained benefits of the project.

During the project, some institutional aspect had an influence on the project implementation. For instance, the government changed some policies, which interrupted project implementation (ICR, p13). However, current policy developments on agriculture in the country, and increased funding by the government of Uganda for new agricultural systems contributes to sustained benefits of the projects, and opportunities to reap even more benefits (ICR, 35). Moreover, a communication strategy was designed to inform policy makers and the public about new rules, directions and principles to improve project performance (ICR, p28).

The project achieved its objectives and increased agricultural productivity and incomes of households who participated in the project (ICR, p17). Moreover, the agricultural incomes of project beneficiaries were more than doubled at the end of the project (ICR, p21). This makes

them more likely to continue on their own. The project did think about a fair allocation of resources. A substantial part of the project fund goes directly to the government, who allocated the money afterwards. The project designers know about corruption in this country, so they installed anti-corruption safeguards, and work on transparency, to make sure the money is allocated as it is supposed to (PAD, p15). Nowhere in the ICR can benefits recognized by local stakeholders been found.

The project was in the PD expected to have positive environmental impacts, since it focused on promoting environmentally-sound production practices (PAD, p27). In the ICR, one can also read that they have developed several safeguard policies for the environment, which were complied with as well (ICR, p31). One can therefore say the project is environmental sustainable.

Lastly, some external factors did influence the project, like drought, plant disease, pest infestation, but the project beneficiaries were able to manage those factors (ICR, p20). One can say they are prepared for external shocks, and knowhow to deal with them, which makes the benefits of the project more likely to sustain.

#### Project 5. Africa - African Forum for Agricultural Advisory Services Second Multi-Donor Trust Fund Project

**Project objective:** To reform and strengthen Agricultural Advisory Services (AAS) in accordance with FAAP principles towards increasing agricultural productivity and food security.

**Start date / end date:** 31 October 2013 / 30 June 2018

#### **Summary**

Aim of this project was to strengthen the agricultural advisory services with the aim to increase agricultural productivity and food security. The project had a different aim than the projects appraised before, since direct beneficiaries of the project were more on a national level (like governments from the countries) than on a local level (like small-holder farmers).

Within the PD there was a strong emphasize on including local stakeholders in the PD (PAD, p12). However, in the ICR one can read they failed to do so on some points, since the forum that has been established does not meet the farmers needs (ICR, p14). They are the ones who make use of the forum. Some of the project members are still active in supporting other project related activities related to agricultural advisory services (ICR, p14). By providing this support, the project is more likely to have sustained benefits. The project is environmentally sustainable, since it does not harm the environment with its project activities, and via the online

platform farmers can learn from one another. For instance, they can learn about new environmentally sustainable practices and techniques (PAD, p32).

However, looking and the economic and financial aspects, the project outcomes itself are not able to sustain without any additional funding (ICR, p24). So, only if they receive additional funding, the benefits of the project are able to sustain. Therefore, based on everything that happened till the point of the ICR, the project is not likely to have sustained benefits on its own.

Starting with appraisal of the PD, the PAD did think about sustainability. As the PAD states: *“Building sustained commitments to a shared agricultural growth and poverty reduction agenda is one of the central objectives of the CAADP framework.”* (PAD, p25). The principles within the PD aim at increasing long-term support from both public and private sector and aim at a common vision of agricultural development (PAD, p25). The project was restructured once, however, most of the restructuring was about funds being redistributed, instead of real project activities that were changed (ICR, p10; ICR, p18). Moreover, the PAD states that one of their objectives will be to strengthen the capacity of country level advisory service stakeholders in improving their advisory service and setting priorities (PAD, p11). They also researched the capacity of institution in Africa and came to the conclusion they did not have the sufficient capacity to launch an advisory service (PAD, p12). In the ICR, one can find that the project support these institutions and country level advisory service stakeholders by training, coaching and small grants, which seems to have worked and increase their knowledge (ICR, p15). In the PAD, there is a strong emphasizes of including local stakeholders in the project design (PAD, p10; PAD, p12; PAD, p18). For instance, the PD states the following: *“At the governance level it should ensure that farmers are represented in all AFAAS governance structures and within the multi-stakeholder innovation platforms of Country Fora (CF). It should ensure that representatives of farmers and value chain actors take part in its planning, monitoring, evaluation and learning systems”* (PAD, p12). However, looking at the ICR, one can say including local stakeholders in the project design was not completely successful. The forum that was established did not meet the farmers’ needs, and the reform of the forum calls for a more client-driven and farmer empowerment approach (ICR, p14). In the pick of technology, they state they make sure that the farmers have the right capacity to use the new technology before introducing it (PAD, p20). They included this, because of lessons learned from former projects. Lastly, within the PAD, they included a risk analysis and showed how to mitigate the risks (PAD, p26).

The M&E system during the project implementation was rated modest in the ICR (ICR, p22). The M&E will continue, and some of the project members of this project are still included

in other project related activities, even though they don't have to (ICR, p14). This makes the project more likely to have sustained benefits.

The project design and implementation of the country forums are customized to the local institutions in place in that specific country (ICR, p25). This makes the existing policies standing less in the way of success and sustained benefits and decreases the occurrence of problems. Moreover, with the forums being established, local stakeholders have the opportunity to communicate better among each other.

The economic and financial aspects are important for the sustained benefits. One big risk of the project is stated as follows: *“Despite the relevance and achievements of AFAAS in contributing to CAADP implementation and to agricultural development in Africa, the major risk at this stage to sustaining AFAAS’s considerable contributions to important development outcomes (including, but not limited to the PDO for the project itself) is AFAAS’s ability to raise sufficient funding to continue to operate at the desired level in the future.”* (ICR, p24). More funding is needed to sustain the benefits achieved in this project.

The project is environmentally sustainable, since it does not harm the environment with its project activities, and via the online platform farmers can learn from one another. For instance, they can learn about new environmentally sustainable practices and techniques (PAD, p32). Both the PAD and ICR state nothing about political instability, or other external factors as being a risk for the project outcomes. Therefore it is hard to say if they thought about external factors in-depth.

#### Project 6. Kenya - Agricultural Productivity and Sustainable Land Management Project

**Project objective:** Facilitate agricultural producers in the targeted operational areas to adopt environmentally-sound land management practices without reducing their incomes.

**Start date / end date:** 17 November 2010 – 31 December 2016

#### **Summary**

This project was a follow-up project, to support and complement the KAPAP (the first project) on issues of sustainable land use (ICR, p2). The project did think about capacity building in the PD, which seemed to be successful looking at the ICR, which states that through capacity building local stakeholders were able to share knowledge about sustainable land management and to identify needed interventions (ICR, p19). The project aimed at local farmers adopting new technologies, but the adoption rate of the technologies was low, below 50 percent (ICR, p23). Beneficiaries stated this was because of a lack of tools, money and labor to use the technologies (ICR, p23). Many of the project activities were not long enough into operation to say anything about reaped benefits and benefits to continue. Therefore, one can also not say if the farmers

would have enough incomes from the project to continue project activities on their own. It is therefore hard to conclude if the project could have sustained benefits.

Sustainability of the project was not really thought for in the PD, however, in the project implementation, which was highly compressed due to several delays, the focus of the project executors was mostly on establishing activities instead of also developing an exit-strategy, with local beneficiaries taking project activities over (ICR, p8). This can decrease the sustained benefits of the project, since beneficiaries need to know how to do it themselves in order to continue the benefits of the project. The adaptability of the program seems questionable. They did make some changes, wherein the biggest change was to drop two operational areas, because of the need to concentrate project activities to have the best impact (ICR, p3). The project did think of the capacity of local stakeholders. One component of the project was about capacity building of stakeholders in the targeted communities and service provider levels (PAD, pIX). This seemed to be satisfactory. In the ICR one can find that through this capacity building, stakeholders were able to share knowledge among each other (ICR, p19). The PD did not really engaged local stakeholders in the development of the project. However, when selecting technologies for sustainable land management that the farmers were supposed to use, a community could select from a menu of technologies (ICR, p3). Moreover, the technologies that were picked were assessed by a cost-benefit analysis, and tested in local conditions. However, adoption rate of the technologies was low, below 50 percent (ICR, p23). Beneficiaries stated this was because of a lack of tools, money and labor to use the technologies (ICR, p23). The PAD did contain a good risk analysis, both describing internal (farmers not wanting to cooperate) and external risks (political instability).

The M&E system did not support effective management of project implementation, because it failed to take into account institutional capacity, delays in establishing capacity and the complexity of project implementation (ICR, p9). Therefore it was not sufficient.

However, the institutional environment seems to be sufficient for the project. Investing in Sustainable Land Management remains a priority for the government, which shows the support of policies (ICR, p10). This can increase the sustainability of the project. Moreover, government agencies seemed to be willing to continue the project as well, only the funding may not be completely in place yet (ICR, p20). The communication between stakeholder did also not go as smoothly as it was supposed to (ICR, p8). Some of the service providers did not have the capacity to deliver the promised services. This resulted in some conflicts, and did not support project growth.

Project implementation was too short to conclude if incomes of the beneficiaries would continue or not in the coming years (ICR, p17). As stated in the ICR: *“The majority of project activities were simply not in operation long enough to ensure practices were adopted, incomes increased and ecosystems maintained.”* (ICR, p19). The allocation of resources seemed to be fair, by support 225 communities with micro-projects, and having the aim to include an adequate representation of society (ICR, p15; PAD, p8). The benefits of the farmers were recognized only by the end of the project. As the ICR states: *“The project came to an end when farmers were just starting to realize the importance and benefit of the SLM technologies.”* (ICR, p23).

Since the project was about sustainable land management, it also took an environmental sustainable approach. The project also contained a Global Environment Objective which was the following: *“Reduce and mitigate land degradation in the targeted operational areas and contribute to maintenance of critical ecosystem functions and structures.”* (ICR, pVII).

#### Project 7. Eastern Africa Agricultural Productivity program

**Project objective:** The PDO was to: (i) enhance regional specialization in agricultural research; (ii) enhance collaboration in agricultural training and dissemination; and (iii) facilitate increased transfer of agricultural technology, information and knowledge across national boundaries. (ICR, pviii)

**Start date / end date:** 20 January 2010 / 21 December 2015

#### **Summary**

This project was supposed to be the phase one project of an in total ten year program, which would include two phases. The second phase was supposed to build on the activities in this project, and strengthen the regional collaboration between stakeholders. If this project would have taken place, the project was to be expected to have more sustained benefits. As the ICR states: *“It is possible still to preserve the benefits of Phase I, but, as witnessed during the ICR mission (March 2016), already significant momentum had been lost, with Phase I teams beginning to disperse to other assignments in the agriculture sector”* (ICR, p25). Some of the benefits were already lost, only 4 months after the main project activities had stopped.

However, there are still some good points of the projects to have sustained benefits. For instance, the capacity of the local stakeholders was well thought of in the PD, and was not overestimated (ICR, p4). A very strong factor of the project was that they specifically included local stakeholders in the PD: *“Because of the regional nature of the Project, much up front consultation was essential for success. All countries had to be on board with the rules for scientific exchange and the choice of commodity in which to specialize. These agreements*

*required numerous negotiations with a wide variety of government, AR&D and farmer stakeholders attending workshops.” (ICR, p7).*

The communication between stakeholders during the project was carried out well: a part of the project was to the consultation of regional stakeholders, which resulted in a strong regional attitude (ICR, p8). This can result in more sustained benefits. Moreover, one can see how the factor *benefits recognized by local stakeholders* can influence the project implementation and outcomes. The project speed up once agricultural scientists experience the knowledge exchange, and saw the regional benefits of this (ICR, p8).

Starting with the project design, this project was supposed to be the first project of a 10 year during program, which would include this project as the first five years of the program, and was supposed to have a follow-up project for the second five years of the program (PAD, p5). This project was about the establishment of agricultural production, and the second project would concentrate on strengthening regional collaboration and expanding both in commodities and more countries (ICR, p12; PAD, p5). One can argue if this project on its own would be thought of sustainability without the second project following this project.

The program was restructured twice, one time to reallocate funds and one time to extend the project with a few months (ICR, p5). Moreover, some of the Regional Centers of Excellence, which were established to share agricultural knowledge within regions and among regions, were tailored to the specific needs of the country (ICR, p8). So one can say the project was adaptable to the country conditions. The PAD also stated that several activities of the project would include research and training, and investments to improve skills and facilities of local stakeholders (PAD, p7). In total, 161.931 farmers received capacity training and support for the adoption of new technologies, and capacity building seemed efficient analyzing the ICR (ICR, p4). In the establishment of the PD, they did engage local stakeholders, to make sure that everyone involved in the project would agree with terms and conditions (ICR, p7). As the ICR states: *“Because of the regional nature of the Project, much up front consultation was essential for success. All countries had to be on board with the rules for scientific exchange and the choice of commodity in which to specialize. These agreements required numerous negotiations with a wide variety of government, AR&D and farmer stakeholders attending workshops.”* (ICR, p7). Moreover, the PAD included a risk analysis, which gave several mitigation measures for the risks, and was rated as moderate in the PAD (PAD, p18-19).

The M&E system did perform well, it made key improvements to project implementation and indicated that more funding was needed for some activities (ICR, p11). Nowhere in the ICR is stated that the M&E system will continue monitoring and evaluation.

Existing policies do stand in the way of sustained benefits of the project. As the ICR states: *“The PAD explicitly recognized the risk that there could be an inadequate policy environment for facilitating regional technology transfer and this risk was to be mitigated by EAAPP countries agreeing in advance to implement measures already agreed with specific focus on the selected commodities. This risk did materialize and has threatened continued progress in regional cooperation since the close of the EAAPP and in the absence of a Phase II.”* (ICR, p6-7). The trading of seeds, breeds and planting materials between the involved countries was supposed to fall under the second phase of the project, which is not taking place (ICR, p6-7). The communication between stakeholders during the project was carried out well: a part of the project was to the consultation of regional stakeholders, which resulted in a strong regional attitude (ICR, p8). This can help to have sustained benefits as well.

The ICR states the following about sustained benefits: *“It is possible still to preserve the benefits of Phase I, but, as witnessed during the ICR mission (March 2016), already significant momentum had been lost, with Phase I teams beginning to disperse to other assignments in the agriculture sector”* (ICR, p25). Some of the benefits were already lost, only 4 months after the main project activities had stopped. This is a bad indicator for sustained benefits over a longer time-period. Within the project, they made sure that seeds and breeds were widely available for local farmers, and funds were reallocated because of the growing demand of farmers for those improved seeds, breeds and planting materials (ICR, p4-5).

In the project, one can see how benefits recognized can help to speed up the project. *“As agricultural scientists went to other EAAPP countries and began experiencing the knowledge/technology exchanges, they became more and more convinced of the regional benefits and the Project picked up speed.”* (ICR, p8).

Lastly, the project is environmental sustainable, since it supported agricultural technologies that promote a better use of land and water (PAD, p26).

#### Project 8. Malawi - Irrigation, Rural Livelihoods, and Agricultural Development Project

**Project objective:** To increase agricultural productivity of poor rural households in all districts; and (ii) strengthen institutional capacity for long-term irrigation development. (ICR, p viii)

**Start date / end date:** 24 May 2005 – 30 June 2015

#### Summary



This project is likely to have sustained benefits. In the PD, they really thought about the capacity of local stakeholders (PAD, p10; PAD p11). In the ICR, one can see that even though the capacity was a high risk for the project success, they did manage to train local stakeholders to get the right capacity to continue on their own (ICR, p12). This is an important factor for sustained benefits of the project. In the engagement of local stakeholders in the PD, the project performed good as well. The PAD states the following: *“for successful implementation, stakeholders must be involved in the conceptualization and design of a project. The proposed project has involved extensive consultations with farmers, district assemblies, government, and non-governmental organizations (such as Emmanuel International) to build understanding and ownership for the project design.”* (PAD, p11).

Moreover, the government support is to be expected to do well. Agricultural development is still a main priority of the government, and the government showed sustained commitment to the sector during the project (ICR p9; ICR, p11). Financially, the beneficiary farmers had improved production and more incomes, and they can be expected to sustain themselves (ICR, p20-22). The project had environmentally sustainable land practices (ICR, p14; PAD, p10). Related to the external factors, one can read in the ICR, that even though many risks were mitigated for, there are still some external risks, like natural disaster (ICR, p23). The project did manage to design a Disaster Risk Response, to deal with those risks in the future (ICR, p6).

The sustainability in the PD is thought for. In the PAD, they state they want to strengthen the local capacities in order to have long-term development (PAD, p5). Moreover, in the PAD they give several ways on how they want to achieve sustainability of the project. For instance, an Irrigation Advisory Service will be established, which should assist farmers who have issues with good irrigation practices, also after project activities have stopped (PAD, p16-17).

The program was restructured several times, wherein some project activities were changed based on the local needs, and the number of beneficiaries were increased (ICR, p3; ICR, p6). The capacity of local stakeholders was well thought of in the PD. One of the objectives stated in the PAD was capacity building for farmers (PAD, p11). Moreover, the PAD also stated that the capacity of districts should be increased as well (PAD, p10). In the ICR, one can see that even though the capacity was a high risk for the project success, they did manage to train local stakeholders to get the right capacity to continue on their own (ICR, p12). In the engagement of local stakeholders in the PD, the project performed good as well. The PAD states the following: *“for successful implementation, stakeholders must be involved in the conceptualization and design of a project. The proposed project has involved extensive consultations with farmers, district assemblies, government, and non-governmental organizations (such as Emmanuel*

*International) to build understanding and ownership for the project design.”* (PAD, p11). The PD does not say much about the pick of technology, but they did include an extensive risk analysis in the PAD, with mitigation measures.

The M&E system performed well, and gave sufficient evidence of project performance (ICR, p15). Moreover, since the project was quite big, each region had their own supervisor of main activities, which contributed to project performance (ICR, p11).

The government support for this project was good as well. Agricultural development is still a main priority of the government, and the government showed sustained commitment to the sector during the project (ICR p9; ICR, p11). The project was also in line with the national policy strategy, which contributes to sustained benefits (ICR, p17). During the project implementation, there was also a good system in place for communication among stakeholders, which has a positive impact on project outcomes. There were review meetings among local stakeholders, and joint field trips to project activities (ICR, p11).

Financially, the beneficiary farmers had improved production and more incomes, and they can be expected to sustain themselves (ICR, p20-22). Moreover, the number of beneficiaries was increased during the project, since the project activities went so well. Lastly, the benefits of the project were recognized by the governments, which made them invest more in project activities (ICR, p13).

The project had environmentally sustainable land practices (ICR, p14; PAD, p10). Related to the external factors, one can read in the ICR, that even though many risks were mitigated for, there are still some external risks, like natural disaster (ICR, p23). The project did manage to design a Disaster Risk Response, to deal with those risks in the future (ICR, p6).

#### Project 9. Angola: Market Oriented Smallholder Agriculture Project

**Project objective:** The project development objective is to increase agricultural production through provision of better services and investment support to rural smallholders in selected comunas and municipios of the Recipient's provinces of Bie, Huambo and Malange.

**Start date / end date:** 30 June 2010 / 31 March 2016

#### Summary

This project has a planned follow-up project, named: *The Smallholder Agricultural Development and Commercialization Project (SADCP)*. It is good they have this follow-up project, so that

beneficiaries can grow even further and expand their capacity. The beneficiary farmers in this project did have an increased income at the end of the project, however, the absolute positive gains are quite low, since production and incomes of those farmers was already low at the start (ICR, p17). Moreover, a major risk for sustained project benefits is described in the ICR as follows: *“A major risk to sustaining project achievements will be whether investments in improving capacity and skills can be leveraged into greater commercialization and profits for farmers. This will be influenced by Angola’s larger social and economic context, which presents a difficult environment for smallholder farmers to boost production significantly.”* (ICR, p23). It can be hard for smallholder farmers to sustain the benefits achieved from the project, or to increase those benefits in such an environment.

The environmental risks of the project are considered low, and investments in sub-projects did not cause any environmental damage (ICR, p23). It is therefore expected not to do it in the future as well. The institutional environment wherein the project takes place can be a risk, looking at what happened during the project with the outbreak of the second phase of the civil war and the elections that took place (ICR, p7).

The project is adaptable to local conditions, which is mentioned specifically in the PAD (PAD, p4). Moreover, the project supported capacity training of local stakeholders in several ways, and did manage to provide the local stakeholders with the right capacity to improve production (IR, p17; ICR, p3; PAD, p4). Moreover, when introducing new technologies to the farms, the project provided farmers with capacity training as well, in order for them to work with those new technologies (ICR, p4). There were some institutional delays at the beginning of the program, however Angola’s National Development Plan, does lay a strong emphasis on agricultural productivity and diversification, which can benefit project outcomes on the long-term as well (ICR, p13).

In the PD, the sustainability is well thought for. The PAD states four key activities of the project, on how the project will achieve sustainability (PAD, p14). For instance, they want to stimulate private operators to take over functions and roles that are currently provided by the government (PAD, p14). In the PAD, they talk about flexibility of the project, in a way that it can reflect to the social and environment in rural Angola (PAD, p4). Therefore, the project is adaptable to local conditions. Moreover, the project supported capacity training of local stakeholders in several ways and did manage to provide the local stakeholders with the right capacity to improve production (IR, p17; ICR, p3; PAD, p4). They build capacity of smallholders and their organizations, services providers and other stakeholder involved in the agricultural production and value chain (ICR, p3). While analyzing the PAD and ICR, one cannot really find

anything that states that local stakeholders were engaged in the PD. However, a community demand-driven approach was used to ensure project beneficiaries had a voice in determining project activities that matched their needs (ICR, p13). Moreover, when introducing new technologies, they provided farmers with capacity training as well, in order for them to work with those new technologies (ICR, p4). A risk analysis was included as well, wherein they provide several risks, and for every risk give several mitigation options (PAD, p15-16).

The M&E system performed well, although there were some project implementation delays (ICR, p9). It was used regularly, and reviewed regularly the implementation progress (ICR, p11). Nowhere in the ICR or PAD is stated that M&E activities will continue.

During implementation, the policies of the government of Angola caused quite some delays. Moreover, the outbreak of a second civil war in Angola, and legislative elections also affected the project implementation (ICR, p7). This can happen in the future again, however, Angola's National Development Plan, does lay a strong emphasis on agricultural productivity and diversification, which can benefit project outcomes on the long-term as well (ICR, p13).

The project did improve the incomes and production level of many farmers (ICR, p15). However, their incomes and production was very low at the beginning, so in absolute gains they would not be able to sustain themselves (ICR, p17). The ICR also describes a major risk for sustained project benefits: *"A major risk to sustaining project achievements will be whether investments in improving capacity and skills can be leveraged into greater commercialization and profits for farmers. This will be influenced by Angola's larger social and economic context, which presents a difficult environment for smallholder farmers to boost production significantly."* (ICR, p23). It can be hard for smallholder farmers to sustain the benefits achieved from the project, or to increase those benefits in such an environment. The allocation of resources within the program was done well, and several rural communities were able to receive support (ICR, p16).

The environmental risks of the project are considered low, and investments in sub-projects did not cause any environmental damage (ICR, p23). It is therefore expected not to do it in the future as well. The institutional environment wherein the project takes place can be a risk, looking at what happened during the project with the outbreak of the second phase of the civil war and the elections that took place (ICR, p7).

#### Project 10. Zambia: Agricultural Development Support Project

**Project objective:** The project development objective is to support increased commercialization of smallholder agriculture through improved productivity, quality and efficiency of value chains where smallholders participate.

**Start date / end date:** 12 September 2006 / 15 May 2014

## **Summary**

This project is expected to have sustained benefits, without any follow-up project. Many of the project indicators were met, and for instance incomes from households were increased substantially over four times (ICR, p10). Moreover, some project activities were taken over by private sector partners (ICR, p8). The capacity of local stakeholders to continue benefits seems efficient, since production improved and incomes increased (ICR, p10). As the ICR states: “*The Agricultural Development Support Project contributed to building long-term capacity in many areas.*” (ICR, p18). Moreover, the project increased access to areas that were previously not accessible, which have opened up for economic and social activities (ICR, p18).

The project did state a page in the PAD related to sustainability (PAD, p16-17). Herein, they state how they want to achieve sustainability, e.g. by designing the project that it will fit the local institutions and policies, and for instance by provision of resources to enter new markets and improve efficiency (PAD, p17). The project did think about the capacity of local stakeholders. For instance, one of the activities of the project included capacity building for business plan development (PAD, p8). They did think about it as well, but at the beginning of the project, the capacity of some stakeholders was lower than expected, which caused delays in the project implementation (ICR, p22). However, they did manage to come to the right level of capacity to work on their own, so it should not decrease the likelihood of sustained benefits. The adaptability of the program also seemed in order. During project implementation, some proactive restructuring was done, in order to address implementation bottlenecks (ICR, p9). This did not influence project outcomes. Moreover, the project design was restructured, based on the government’s priorities and key stakeholders, to ensure strong commitment of them (PAD, p10). They provided a risk analysis in the PAD, with nine risks and several mitigation measures.

The M&E systems was not able to collect all information needed in time, to appraise the project during implementation (ICR, p7). Therefore, some of the indicators had been changed during project implementation (ICR, p2). Moreover, nowhere is stated if the M&E will continue.

The project did follow current policies and institutions that were in place in Zambia, which increased project success. The project beneficiaries are likely to receive support from the government in the future (ICR, p19). Moreover, the project managed to increase collaboration between local stakeholders. “*ADSP has strengthened collaboration among all players along agricultural value chains, and benefitted smallholders, agribusiness enterprises, large-scale estates and commercial farmers, input suppliers, traders and financial institutions.*” (ICR, p20). The project is expected to have limited environmental impacts.