Research report

Incorporating motivational factors into agricultural training programmes for farmers in Sub-Saharan Africa

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Abstract

Poverty remains a substantial problem in regions of Sub-Saharan Africa (SSA). The current agricultural production in Africa is the lowest in the world. African farmers do not have the capital to invest in agricultural practices and make it more sustainable. Multiple non-governmental organizations (NGOs) therefore focus on giving trainings to these people to help them improve their livelihoods. Agricultural training programmes are a potential method to increase the productivity and sustainability of farming practices. However, motivation is not always prioritized by NGOs when developing trainings. This research therefore focusses on the importance of implementing extrinsic and intrinsic motivation in the development of training programmes in SSA. Besides this, cultural sensitivity and gender roles are discussed as well as educational theories with the focus on training development. Both desk research and field research in the form of expert interview were conducted to answer the research questions. The Self-determination Theory is used as a conceptual framework. The findings show that it is important to take both intrinsic and extrinsic motivation into account when developing training programmes for farmers in SSA. Moreover, the needs of the farmers are important to consider in the training. In addition to motivational factors and needs, knowledge about understanding the situational circumstances of the farmers such as culture, gender roles, and local context is essential when developing a training programme for farmers in SSA.

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Introduction

In Sub-Saharan Africa (SSA), poverty continues to be a substantial problem. It is even the case that current poverty rates have remained the same over the past decades. Moreover, SSA is the only area in the world where poverty rates are not declining (Fosu, 2014; Asongu & Le Roux, 2018). This phenomenon is being referred to as the poverty trap, which is characterized by an insecure environment where long-term goals are often traded for survival in the short term. It is very difficult to escape this spiral as economic growth is generally very limited (Chronic Poverty Research Centre, 2009). Currently, agricultural production in Africa is the lowest in the wo compared to other regions (Mukute, 2010). Due to the poverty trap, African farmers do not have the capital to invest in extension services to increase their agricultural productivity (Mukute, 2010). Agricultural training programmes are a potential method to increase the productivity of farmers in Africa and eliminate poverty in rural areas of SSA. These trainings have received interest in developing countries as government support is often scarce in these countries (Nakano et al., 2018).

Different non-governmental organizations (NGOs) are therefore developing training programmes to help these farmers to get out of extreme poverty. One of those NGOs is 100WEEKS. The NGO 100WEEKS supports women in their journey to lift themselves out of poverty. Their current training programme targets women in extreme poverty by providing them with weekly cash transfers of 8 euros. These cash transfers are complemented by a series of 100 trainings over the course of 100 weeks. Recently, 100WEEKS has been exploring opportunities to expand their training model to include a more specific focus on agricultural practices. This project team was asked to advise 100WEEKS on the redesign of the training, as this project team has a multidisciplinary background including knowledge in training development, education, psychology, and consumer studies. Therefore, this team can give advice on multiple aspects of the training. Through conversations with the commissioners, it was observed that 100WEEKS was unsure about the implementation of the practices learned by the participants of their training. Therefore, the question changed to a focus on how the sustainability of these training courses can be ensured by enhancing the motivation of the participants.

It is important to look at the motivation of farmers to participate in the training and adopt the practices they have learned during the training. Both extrinsic and intrinsic motivation should be considered to reach the desired behaviour of the farmers (Zossou et al., 2020). Motivation was not considered as an important element when the training programme was developed by 100WEEKS.

Therefore, this study will investigate the importance of extrinsic and intrinsic motivation in the development of training programmes in SSA. The research question that will be answered is *How can farmers in Sub-Saharan Africa be motivated to adopt agricultural practices to improve their livelihoods through trainings?* Besides this, culture and context are strongly linked to motivation, and those are therefore also examined in this research.

Conceptual Framework

As motivation is a very broad concept, this research was anchored on one theory about motivation, the Self-determination Theory (SDT), propounded by Edward Deci and Richard Ryan in 1985. The theory suggests that people are motivated to change and grow when three (3) internal and psychological needs are satisfied: autonomy, competence, and connection (relatedness). Different research on SDT shows that a combination of intrinsic and well-internalized forms of extrinsic motivations can predict positive behaviour in varied contexts (Ryan & Deci, 2019). Moreover, Law, Chan, and Ozer (2017) elaborated on dynamics between intrinsic and extrinsic motivational factors, and how agency (the self-determination path), as well as finances (economic path), can influence desired behaviour (see Figure 1).

In the case of this project, the extrinsic motivational factors available to these farmers include cash of 8 euros per week, training, social support of friends and family, and coaching. However, these farmers need to have intrinsic motivation to balance the effects of these extrinsic motivators (Ryan and Deci, 2019). Farmers are therefore motivated to implement lessons learned from the training programme when they feel they have control over their choices, lives, and when they feel that their actions will affect the desired outcome.

However, the model only works in a given context. Data from desk and field research revealed a lot of other factors that affect the adoption of practices. These factors include issues such as context, which led to broader research on culture and gender roles in SSA. As the model is to be applied in an educational setting, this report has also looked at best practices in training development.

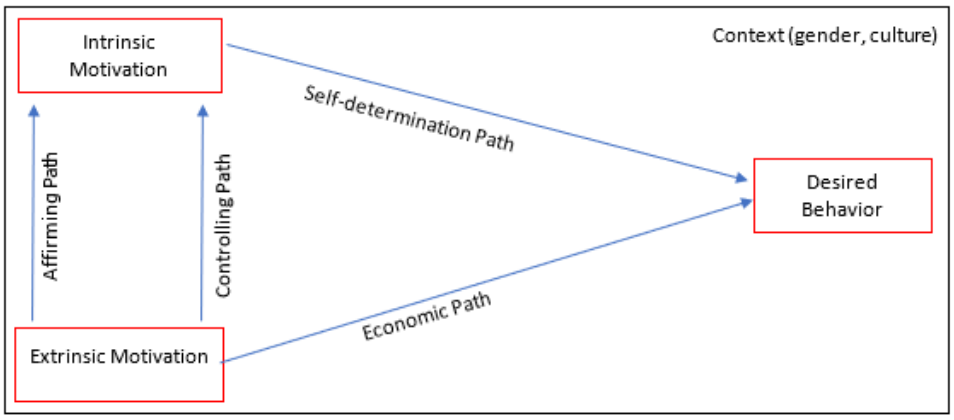

Figure 1: Conceptual framework (Law, Chan & Ozer, 2017)

Methodology

Desk research in the form of literature review and field research in the form of expert interviews and focus groups were carried out to address the main-and sub-questions.

Desk research (Scientific literature review)

Scholarly and peer-reviewed sources, including academic articles and manuals, procedures were used to investigate both, intrinsic and extrinsic motivation, didactics and training development, culture, gender, and context. These research papers included results from a literature search in the databases of Scopus, Web of Science, and Google Scholar and articles recommended and received from the academic advisor, commissioners, and interviewees. The keywords used in the search were relevant to the objective of the project and included words such as *intrinsic motivation, extrinsic motivation, Sub-Saharan Africa or SSA, agricultural practices, training development, culture, gender, adoption of practices, and farmers*. All the articles used were recently published starting from 2010 until now and included the most recently accepted ideas. An exception were the articles that referred to the conceptual framework used in this study. Also, suggestions were given on how to motivate farmers in SSA to adopt agricultural training practices that improve their livelihoods.

Field research (Expert interviews) and Focused group discussions)

Semi-structured interviews were carried out between October 25, 2021, and December 6, 2021, with pre-determined questions based on desk research. These consisted of open questions with the interviewer free to ask follow-up questions based on the answers given by the participant (Rubin & Rubin, 2005). The interview guide provided a structure and contained the main topics of the research. The interviewees were experts in areas and disciplines related to the research topic. Most of them are from Wageningen University, however, to ensure a broad view on the topic, we specifically searched and found experts outside of this university as well. Additionally, some of the interviewees were recommended by the commissioners, academic advisor, 100WEEKS, and by the interviewees. Since we did not ask permission from the interviewees to publish the contact details before carrying out the interviews, we decided to remain them anonymous. Because of this, the list of interviewees and the compilation of the coded interviews are not being published. The interviewees are known by the WUR Science Shop.

A total of twelve (12) interviews were conducted for this research. The interviews were recorded and transcribed by the team and the focus group discussion was transcribed by the programme

manager of 100WEEKS in Uganda. The coding of the interview was done using inductive and deductive methods of coding. In inductive coding, the codes were derived from the raw data of the interviews without any prior notions while in deductive coding, codes were developed with a set of questions based on the research questions and theory. Also, a total of three (3) focus group discussions were conducted by the program manager of Uganda. Two of the focus groups were with the women in the current programme while one was with the coaches.

The data collected through desk research was compared and contrasted with the viewpoints of the experts on the topic and the findings were compared, contrasted, and summarized in a concise research report that served as the basis for an advisory report.

The validity of this research was ensured using triangulation, comparison, and contrast, between secondary data collection through literature and primary data collection through semi-structured interviews. In addition, the interview protocol was reviewed by internal and external experts in the topic area (commissioners) and in the process of doing research (academic advisory).

Chapter 1: Intrinsic motivation

1.1 Definition of intrinsic motivation

Ryan and Deci (2019) define intrinsic motivation as performing an activity for one's own sake because of the inherent satisfaction and the sense of pleasure someone earns by doing. Intrinsic motivation comes from the inner life of the individual and is truly self-determined (Bopp et al., 2019). In addition, intrinsic motivation can be stimulated when working on existential issues; issues that affect your everyday existence (Anonymous #1, personal communication, November 25, 2021). Studies about intrinsic motivation can be built upon the SDT. As described in the conceptual framework, it recognises three basic psychological needs of individuals for autonomy, competence, and relatedness, which form the basis on which motivation is built. The need for autonomy is the need to feel not being forced or coerced in any way but carrying out a task of your own choice. The need for competence in learning is the need to feel being skilled and capable of learning new knowledge and activities. The need for relatedness is the need to feel a connectedness with others in the society (Jambo et al., 2019; Kusurkar et al., 2011).

1.2 Link between intrinsic motivation and farming practices

Although the importance of the role of knowledge, perceptions, and attitudes in the adoption process of agricultural activities has been recognized before, intrinsic motivation has received relatively little attention. There are several challenges about the validity and consistency of methods to measure intrinsic motivation, making it more straightforward to measure characteristics of the farmer or the external environment than measuring someone's knowledge, perceptions, and attitudes (Meijer et al., 2015). However, Twase et al. (2021) conducted a study about Ugandan farmers' motivation to implement acquired knowledge received from agricultural related trainings. The findings of this study suggest that intrinsic motivation is crucial if smallholder farmers are to appreciate the training approaches used during training and that trainers need to pay specific attention to influence internal motivation before, during and after the training. Jambo et al. (2019) also found a close link between intrinsic motivation of farmers and their farming practices during their study about motivation among smallholder farmers in Tanzania and Malawi. Farmers in all six different research sites expressed a strong attachment to their land, illustrating the significant role of intrinsic motivation (Jambo et al., 2019). Moreover, a study from Honig et al. (2015) also concluded that intrinsic motivation is important for farmers to adapt their behaviour in farm management. They argued that intrinsic values can be generated through the development of social capital such as shared trust, reciprocity, and motivation (Honig et al., 2015).

1.3 Integrated farm planning approach (PIP approach)

The integrated farm planning approach, or PIP approach (acronyms in French) can be seen as a concrete bottom-up approach that has a positive effect on the intrinsic motivation of farmers (Anonymous #2, personal communication, November 26, 2021). It is based on motivation, resilience, and stewardship as the three foundation principles. The integrated farm planning approach aims to build a solid foundation for sustainable change toward enhanced food production and good land stewardship (Kessler et al., 2021). Creating an integrated farm plan at household level is a key tool in the approach, since motivated action will arise when the focus is based on households' own capabilities and knowledge, and not on objectives or project targets. Visualizing an attainable future may motivate families to actively search for solutions and it gives families an increased sense of purpose. At village level, through farmer-to-farmer training, capacities can be built in the rest of the community, with even more households becoming motivated stewards of their land (Anonymous #2, personal communication, November 26, 2021). This can be strengthened by exchange visits and the development of village visions (Kessler et al., 2021). Local institutions and extension workers should be closely involved in all activities, given that their motivation and genuine engagement are considered essential for local ownership and the sustainability of all actions. Empowerment, integration, and collaboration are the three guiding principles that aim to guide how organizations and staff work with local actors. Farmers themselves should be the agents of change rather than beneficiaries of a project where only knowledge is being transferred to them. The three guiding principles should therefore be present in each activity (Kessler et al., 2021).

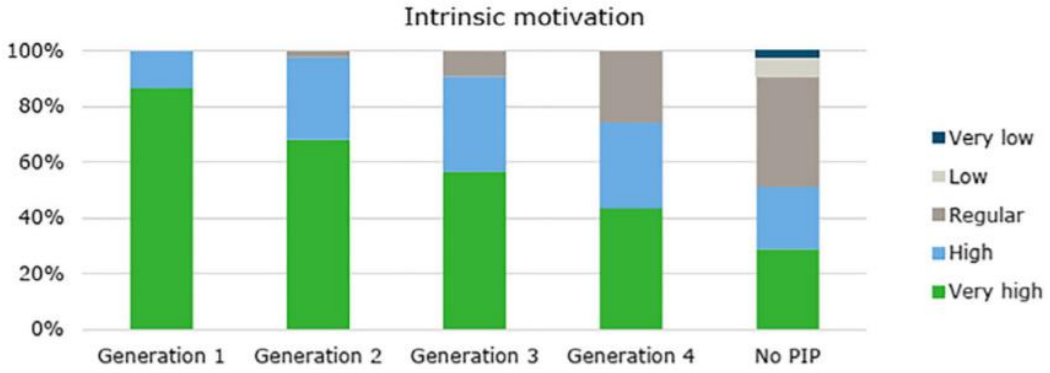

Figure 2: Assessment of motivation of farmers to invest in their farm, across different PIP generations (Kessler et al., 2021)

1.4 Effect of monitoring and evaluation on intrinsic motivation

Monitoring and evaluation during and at the end of the training is important to create intrinsic motivation (Anonymous #2, personal communication, November 26, 2021 & Anonymous #1, personal communication, November 25, 2021). This can be done by taking pictures, making maps, counting, or measuring specific parameters and creating datasets (Anonymous #1, personal communication, November 25, 2021). When farmers, by themselves or together, decide and map out what interventions are available, who has what expertise and how it can be used, it becomes a joint learning process. Then these interventions are co-owned, and farmers feel ownership over what solutions they came up with themselves and that they can influence what is happening. This creates intrinsic motivation (Anonymous #2, personal communication, November 26, 2021 & Anonymous #1, personal communication, November 25, 2021). Especially when farmers can find a way to monitor what is making a difference, how it is making a difference and how it is improving their situation, farmers will feel even more intrinsically motivated (Anonymous #1, personal communication, November 25, 2021). Qualitative evaluation confirms that the PIP approach has a positive effect on the intrinsic motivation of farmers (Anonymous #2, personal communication, November 26, 2021). Farmers seem to feel more esteemed within both, the household and the village, making them feel prouder of their achievements. In the end, this results in more exchange of knowledge and in more collaboration between farmers (Kessler et al., 2021). Figure 2 shows a clear pattern of gradually declining motivation from the first to the fourth generation, being lowest among non-PIP farmers. It should be noted that this figure was based on what farmers have told, so there might be a subjectivity issue. Despite these promising findings, more studies should be conducted to fully understand the integrated farm planning approach (Kessler et al., 2021).

In conclusion, intrinsic motivation is important for farmers to adapt their behaviour in agricultural practices to improve their livelihoods. The integrated farm planning approach can be seen as a concrete bottom-up approach that has a positive effect on the intrinsic motivation of farmers. When farmers can find a way to monitor and evaluate during and at the end of trainings, farmers will feel even more intrinsically motivated. However, also extrinsic motivators are at play, especially the motivation to produce more and the expectation to gain a higher income from farming. This will be further discussed in the next section.

Chapter 2: Extrinsic motivation

2.1 Extrinsic factors

Another type of motivation in the context of training programmes in West Africa is the extrinsic motivation. According to Vallenerd (1997), extrinsic motivation is said to occur when one engages in an activity to acquire value or satisfaction outside of that activity, either to obtain something positive or avoid something negative.

Extrinsic motivational factors are shaped by the promise of a reward or punishment and play a role in the adoption of sustainable practices. Factors that are included in extrinsic motivation are for example, economic, environmental, and social environments (Greiner & Gregg, 2011). These factors influence the likelihood of farmers attending training as well as adopting sustainable agricultural practices (Greiner & Gregg, 2011).

Zossou et. al (2020) acknowledge the importance of the various extrinsic motivational factors outlined above. They argued that farmers' knowledge is determined by the combination of formal knowledge sources, for example, training, and informal knowledge sources such as social networks of friends, family, and fellow farmers. They state that farmers may be primarily motivated through their individual experiences as well as those of fellow farmers to adopt new practices. Farmer to farmer learning has proven to be as an efficient way for farmers to become motivated to adopt new agricultural practices by listening to experiences and seeing the results of other farmers in the community (Anonymous #2, personal communication, November 26, 2021). This extrinsic motivation is needed to take the risk to adopt different practices, as poor farmers do not have the money to take big risks (Anonymous #3, personal communication, November 26, 2021).

2.2 Financial incentives

Financial incentives are also part of extrinsic motivation. It was found that participation in agricultural programmes increased when an economic incentive was present (Läpple & Hennessy, 2014). Literature also shows that external incentives can have a negative influence on someone's motivation, especially when the economic incentive can stimulate certain behaviour. Good behaviour, which is being rewarded will stimulate extrinsic motivation, and can possibly undermine intrinsic motivation (Anonymous #4, personal communication, December 6, 2021). When financial incentives are a condition for participation in agricultural trainings, it can be harmful as farmers will look for the training which provides them with the highest incentives (Anonymous #3, personal communication, November 26, 2021; Anonymous #2, personal

communication, November 26, 2021). It was stated that when participation in the training is a condition for receiving cash, this can have negative effects on motivation (Anonymous #3, personal communication, November 26, 2021; Anonymous #2, personal communication, November 26, 2021; Anonymous #4, personal communication, December 6, 2021).

2.3 Framing

However, it should be mentioned that there are also positive sides to giving extrinsic rewards (Anonymous #5, personal communication, December 2, 2021). There is a nuance in the negative effect of financial incentives on motivation. When it is clearly explained why a certain financial incentive is given and a concrete sustainable spending plan is made by the farmer, this helps in effective use of the financial incentive in practice (Anonymous #2, personal communication, November 26, 2021). It was found that framing is important when cash flows and participation in a training are linked to one another (Anonymous #4, personal communication, December 6, 2021). There are practical boundaries when it comes to participating in trainings which overrule motivational factors. As farmers might lose a working day by joining the training, they will miss a day of income and therefore it is sensible to compensate them for the time and effort they make to come to the training. Therefore, when the money is meant for the farmers to spend on improving farming practices, this will have to be stressed in the communication about the cash flows. Hence, framing and explaining the reason why money is given when farmers are participating in the training will help to maintain the value of the training independent of the financial reward (Anonymous #3, personal communication, November 26, 2021.

In line with framing, extrinsic motivation can be positively stimulated by describing and emphasizing other benefits of the training program (Anonymous #4, personal communication, December 6, 2021). As Greiner and Gregg (2011) explained that social environment is an extrinsic motivator, this social environment exists within a group training program as well. From current experience in trainings, it was observed that participants in the training enjoyed learning from one another and working together for a longer timeframe unites the group, which increases their motivation (Anonymous #6, personal communication, December 1, 2021). When the value of participation in the training programme is stressed by means of building a network and creating a community with the other participants in the training, then this will positively stimulate extrinsic motivation (Anonymous #4, personal communication, December 6, 2021).

To conclude, financial incentives and social environments can stimulate extrinsic motivation. When financial incentives are linked to participation in training, framing why cash is given is most

helpful in motivation. In addition, framing can also be used to give attention to social elements within the training which in its turn stimulates extrinsic motivation as well. As indicated by Mitchell, Schuster, and Jin (2020), external motivational factors are most effective when aligned with intrinsic motivational factors. Therefore, the next chapter will elaborate on the relationship between extrinsic and intrinsic motivation.

Chapter 3: Bridge between intrinsic and extrinsic motivation

3.1 Self-determination theory

As became clear from the previous chapters, both extrinsic and intrinsic motivations are important to take into consideration when developing training programmes in SSA. Intrinsic motivation comprehends the interest and satisfaction that farmers derive from activities, while extrinsic motivation is separated from the activities but based on outcomes and rewards (Mellon-Bedi et al., 2020). The paper from Zossou et al. (2020) stresses that both extrinsic factors such as characteristics of the training practices and intrinsic factors such as knowledge and attitudes of the potential adopters should be considered when analysing the decisions process of adopting the practices learned during the training programme. However, according to both Twase et al. (2021) and Greiner and Gregg (2011), intrinsic motivation can weigh heavier than extrinsic motivation in farmers' decision-making to adopt new practices. Extrinsic motivation can be a powerful tool to change behaviour, but it is most effective when these incentives are in line with a farmers' own values, goals, and identity (Mitchell et al., 2020). Extrinsic motivation will only alter behaviour towards adopting new practices when intrinsic motivation is low. A farmer who is highly motivated will not need extrinsic incentives such as money to increase his willingness to participate in the training program and to adopt the practices learned (Bopp et al., 2019). According to the SDT of Deci and Ryan (2008), intrinsic motivation is undermined by extrinsic motivation. This theory will be explained in the following example. Imagine that a child is playing soccer for no specific reason, only because he wants to. In this case, we talk about intrinsic motivation. On the other hand, if the child is playing soccer because he pursues an instrumental goal such as to please his parents or to win a championship, this is an example of extrinsic motivation. Suppose both intrinsic and extrinsic motivations are combined. The boy who likes to play soccer for his own sake is also offered money for winning. According to the SDT, the boy's intrinsic incentives (enjoying soccer), is undermined by the extrinsic incentives (money, winning). This would mean that in the future, the boy is less likely to play soccer when extrinsic incentives are absent (Reiss, 2012). In training development, attention to the link between intrinsic and extrinsic motivation should be given, as extrinsic motivation can undermine intrinsic motivation (Anonymous #2, personal communication, November 26, 2021).

3.2 Heterogenous motivation

It is important to consider that motivation is not homogeneous among participants of the training. The country they live in, their age, gender or level of education are examples of characteristics that

influence the motivation of participants. Assuming that motivational drivers of the farmers are homogenous, hides the versatility of their motivations. If the diversity of the motivational drivers is not considered, the effects of the training may be minimal or even have the opposite of the desired effect (Zabala et al., 2017). If these differences among participants can be distinguished and grouped, the training programme can be designed to offer different roles to the participants. This will have a positive effect on their willingness to participate in the program (Beza et al., 2017). According to Jambo et al. (2019), most farmers considered agriculture as a satisfactory and important profession. They are prepared to preserve their farms through sustainable agricultural practices. However, most farmers also stressed the need to receive financial support to implement these sustainable agricultural practices. Though, a difference should be made between financial support to implement the sustainable practices and financial support to motivate farmers to adopt these practices. Previous methods which provided financial support or incentives to motivate farmers to adopt sustainable practices often failed to achieve long-term goals as farmers were motivated by extrinsic motivational factors. Their motivation to adopt the practices will cease when the financial support is gone (Bizoza, 2014).

As Pretty et al. (1995) state in their trainers' guide, it should be ensured that participants, in this case farmers, feel necessary, involved, or important. This gives them motivation that is necessary for the learning process to take place. When you make decisions together with the farmers and get knowledge of who already has some expertise and who can make use of this expertise, it becomes a collaborative and joint learning process. This ensures a sense of agency and ownership among participants. So, when you ensure that the training is co-created, then the farmers get the feeling that they partly influence what is happening (Anonymous #1, personal communication, November 25, 2021). Also, plenty of practical exercises should be incorporated in the training programme. When doing these practical exercises, their self-confidence increases, and they can fit what they learn to their own circumstances (Ouédraogo et al., 2017; Anonymous #4, personal communication, December 6, 2021). By creating impact and showing farmers how they can increase their yield in the very short term, farmers are intrinsically motivated to learn and will continue implementing the practices they have learned even after the training has finished (Anonymous #7, personal communication, December 2, 2021; Anonymous #3, personal communication, November 26, 2021). Giving farmers all kinds of additional incentives to adopt the practices from the training programme does not work. It is important that the farmers feel ownership and discover for themselves if the practices work on their farm. If necessary, they can adapt them a bit to their circumstances (Anonymous #2, personal communication, November 26, 2021).

Moreover, new material from the training programme should relate to the information and skills they already own. Besides this, it is important that the farmers clearly observe the problems they face before possible solutions are included in the training programme (Ouédraogo et al., 2017). This minimizes the risks of wasting money and time on the bad adoption of the training program and increases the possibility of obtaining the desired result. Most farmers have no budget or no buffer. So, before they adopt anything they have to make sure that the return on investment is good enough. It is not possible for them to just try out new things with the risk of failure (Anonymous #3, personal communication, November 26, 2021). Besides this, you must take the reality that the farmer faces into account. It could be that farmers are motivated but aren't able to attend the training because they must take care of their children, or they miss out on income that they would otherwise receive if they did not attend the training (Anonymous #3, personal communication, November 26, 2021).

3.3 Rogers' adoption model

For the training programmes to be effective, the people who are responsible for developing these training programmes need to understand what persuades potential farmers to adopt these training programmes. Most studies that have been conducted focus on the comparison between adopters and non-adopters of a new technology or practice. However, investigating the difference between early and late adopters might be more relevant (Läpple et al., 2011). In 1962, Rogers published the paper Diffusion of Innovations. This model suggests that only a few farmers will adopt the new practices in the early stage as only a minority of the farmers have full knowledge of the potential advantages of these new practices. Also, farmers might be reluctant to adopt due to the possible risks that could be associated with the new practices. Therefore, at the beginning, the pace of adoption is slow. However, the fear of risk reduces as more farmers adopt the new practices. The rate of adoption will then also increase. Eventually, the pace of adoption will start to level off, and a maximum is reached (Rogers, 2010). See Figure 3 for a visualization of the model.

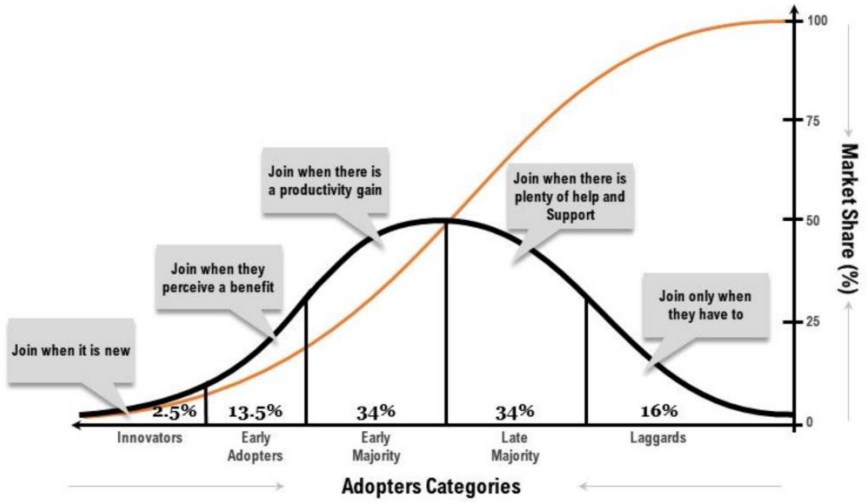

Figure 3: Five social adopter types (Pierce, 2013)

Although five different levels of adopters can be distinguished, several literatures on adoption of farming practices suggest dividing it into three different levels of adopters: pioneers (innovators), followers (early adopters/early majority) and late adopters (late majority/laggards) (Läpple et al., 2011; Zabala et al., 2017). The pioneers are the most likely adopters of the new training programme. They are mainly motivated by potential livelihood benefits that the new practices might bring, rather than other benefits such as environmental reasons. They are willing to adopt these new practices if these can result in potential livelihood improvement, despite the potential risks. These farmers do not need external economic motivators to start experimenting with the new practices. In contrast, followers might only adopt in the first phase if there is external financial support involved or at a later phase when the economic benefits of the practices which the early adopters receive become visible. Overall, both, the pioneers and followers, are less motivated by instantaneous monetary incentives. They are likely to be more responsive to other interventions such as transparency of the practices, information sharing, or claimed benefits. These interventions give an expectation of the benefits and reduce the possible risks of the new practices (Zabala et al., 2017).

After the first phase, when the viability and benefits of the new agricultural practices have become visible, additional monetary incentives might not be necessary to motivate all three types of adopters to participate. The continuance and diffusion of the practice goes by itself. Quick results and wins are very important when you set the farmers together. The late adopters see results from the pioneers that they can easily do by themselves as well. They gain confidence in the trainings that they can participate in the trainings themselves without having to wait for financial

support (Anonymous #2, personal communication, November 26, 2012; Anonymous #4, personal communication, December 6, 2021). Initial monetary incentives might not even result in an increase in adoption but cause for a more uniform adoption process as the late adopters would participate at an earlier phase. Moreover, if the budget for the training programme is stopped, the late adopters will not continue with the program as their main motivation to adopt the practices has disappeared (Pagiola et al., 2007). A potential strategy to target farmers at the start of a training programme is to focus on the pioneers. They are more intrinsically than extrinsically motivated towards experimenting with the new practices. An external incentive that suits the pioneers better than monetary benefits could, for example, be a clear informational strategy that emphasis on the potential benefits in social, economic, and ecological ways when adopting the new agricultural practices. Having this validated by multiple authoritative and trusted sources for the farmers reduces the uncertainty even more. Further, the motivation of other adopters might be spurred if the actions of pioneers are socially rewarded. This can happen, for example, by stressing their service to the community, or by appointing them as coaches for other potential adopters (Zabala et al., 2017; Garbach et al., 2012). Also, information sharing is very valuable. If farmers are put together in a group and are challenged to look at their own practices and knowledge for solutions and sharing this with others, a whole new dynamic appears within the group. It is about changing the mindset of the farmers. If they see the added value of collaboration and learning from each other, the whole learning process changes and you don't really need additional incentives anymore (Anonymous #2, personal communication, November 26, 2021). However, it is important to keep in mind that targeting only the highly motivated people can cause a dilemma. You have a great program as you work with very motivated people but the farmers who didn't enter the program remain in the same situation. It is therefore important to consider this and ensure that late adopters are involved in a later stage as well. If necessary, by offering monetary incentives (Anonymous #4, personal communication, December 6, 2021). The pioneers often don't hesitate to take risks because they have the money to take risks. However, for the followers and late adopters to follow these pioneers they should be like the other farmers (Anonymous #7, personal communication, December 2, 2021). However, you can have a different approach in this, look at the system of the community and find out what works. An NGO might decide to work with local money benders instead of giving the money to the farmers by themselves. In this way, farmers still have access to the money even when the NGO is not operating in their community anymore. They should support these local money lenders and alter their way of working where necessary (Anonymous #8, personal communication, November 25, 2021).

This targeting of potential adopters can be achieved by designing a more dynamic programme. In the first phase, for example, no information about prospective payments or other monetary incentives would be provided, but rather evidence of potential benefits of the agricultural practices. In this way, mostly pioneers will volunteer to participate in the programme. In the second phase, moderate payments may be introduced to stimulate the followers to participate as well. They are still undecided, but these small payments might win them over. In the third phase, the benefits of the new practices become visible and both pioneers and followers have adopted them. Additional payments might be necessary to facilitate the partaking of the late adopters. So, training programme schemes might be designed to attract pioneers who are genuinely interested in the new practices first. These individuals have more incentives to make the new practices a success and may stimulate the other farmers to adopt the practices as well (Zabala et al., 2017).

To conclude, both intrinsic and extrinsic motivation are important factors to consider when developing a training programme. It already starts with selection of farmers for the training. Intrinsically motivated farmers do not need extrinsic motivation to participate in the training. In the case of these highly motivated farmers, extrinsic motivation like monetary benefits can undermine their intrinsic motivation. It is therefore important to consider this when persuading farmers to participate in the training programme. These intrinsically motivated farmers can motivate others to participate as well when the benefits from the training become visible. Moreover, it is very important to consider the needs of the farmers and treat them as individuals rather than a homogenous group. If the farmers can adopt the training practices to their own circumstances, they are more motivated to adopt the practices learned in the long term.

Chapter 4: Cultural sensitivity & gender roles

4.1 Western perspective

Cultural sensitivity within training development for African countries comes from two different perspectives: the Western and the African perspective. Currently, when developing training programmes for an African context, awareness should be given to the different knowledge systems. Western NGOs have the tendency to impose Western knowledge on African systems, and this is a form of epistemic injustice (Anonymous #9, personal communication, December 3, 2021 & Anonymous #2, personal communication, November 26, 2021). NGOs should get an understanding of how the communities are living and their culture to integrate it into the training programmes (Anonymous #8, personal communication, November 25, 2021). So besides being aware of the African culture within a training, Western NGOs also must be aware of their believe systems, and not take a Eurocentric perspective, when developing training programmes for African countries. The African philosophy is much more communal, rather than individual focused. The basis of African worldview is a whole different idea from the Western perspective and this should rather be the basis of a training than a view that can be incorporated after the basis of the training is thought out from a Western perspective (Anonymous #9, personal communication, December 3, 2021). It is important that NGOs and the farmers understand each other. You should understand why people are behaving in a certain way and not just bring your western ideas into the communities. Western NGOs should spend a lot of time and effort to figure out what the farmer groups really need (Anonymous #8, personal communication, November 25, 2021).

4.2 Household dynamics

Largely, women in Africa have a lower status and are inferior to men (Bonis-Profumo et al., 2021). This has mostly to do with social norms and systemic barriers which maintain the inequalities between men and women, but also with culturally defined gender roles about women in most African cultures (Anonymous #10, personal communication, November 23, 2021; Makate & Mutenje, 2021). Women are less involved in decision-making processes, and they also lack access to economic resources (Koralagama et al., 2017). Men voices are mostly heard when it comes to decision making in communities (Farnworth & Colverson, 2015). These gender roles are visible in both household dynamics and agriculture. The work is both for men and women. There is specific work that men are assigned to do. The women cook and take care of them. The women are always by their side, and they also share work. If the woman is capable, she can also do some male work if necessary (Anonymous #8, personal communication, November 25, 2021).

Within the household, men have most influence in decision making, especially when it concerns control over money and expenditures (Farnworth & Colverson, 2015). Besides, men provide most for the household financially, while women do household tasks, cook, take care of the children, and earn some money on the side (Njuki et al., 2021; Farnworth & Colverson, 2015). Women are having children for the men, and the men are there to provide for them (Anonymous #8, personal communication, November 25, 2021). Also, children in the household can be more educated than their parents, making them most suitable for joining certain modules within the training as the children take up tasks such as calculating costs (Anonymous #3, personal communication, November 26, 2021). Therefore, knowledge about household dynamics of the target group has been named essential in the development phase of a training. In addition, elderly people are much respected and therefore, young people will speak less when older people are around. Within culture, elderly will speak first and for the younger people it is the norm that they will respect them, and it is not their place to speak out when the elderly are speaking (Anonymous #8, personal communication, November 25, 2021). The same goes for women in the presence of men, due to cultural norms they will also speak up less. Also, the people in the community will always support the chief. So as soon as you allow the chief to speak, the others will agree with him. This must be considered to ensure that there is dialogue in the group (Anonymous #11, personal communication, November 30, 2021; Anonymous #8, personal communication, November 25, 2021). Therefore, considering cultural norms is important within agricultural trainings, and in deciding on who will be given the training (Anonymous #12, personal communication, November 26, 2021). Women speak up less with a male trainer, especially when it comes to sensitive topic such as family planning. Training couples are advised to overcome this potential limitation (Anonymous #11, personal communication, November 30, 2021).

However, awareness should be given on the fact that household dynamics are being viewed from a Western perspective. In Africa, families are not restricted to the nuclear family, as their communal philosophy makes that they have a much broader perspective of family (Anonymous #9, personal communication, December 3, 2021).

4.3 Gender roles in agriculture

In SSA, the main source of income is agriculture, this sector mostly consists of smallholder farmers (Aguilar et al., 2015). Farmers are a very diverse group which ranges from self-sustaining to more commercial farmers, and there are also varieties in age, gender, and levels of (financial) literacy (Anonymous #3, personal communication, November 26, 2021). Nearly half, and in some African countries even more than half of the people in the agricultural sector can be attributed to women

(Makate & Mutenje, 2021). Gender differences posed by systemic barriers can also be seen in agriculture as well. Women are constrained in access to agricultural resources such as good seeds, and at the same time they lack access to extension services. This causes a gender gap which can be seen in a difference in the yield and productivity of the women farmers compared to male farmers (Anonymous #10, personal communication, November 23, 2021). This gender gap is the biggest for unmarried women, as these women do not have husbands through whom they can access these agricultural resources (Aguilar et al., 2015). In addition, the gender gap can be further explained by the knowledge of women being systematically excluded (Farnworth & Colverson, 2015). Exclusion is seen as a lack of land ownership by women, inaccessibility of resources and knowledge on agricultural extension practices, lack of admission to markets and other levels of the supply chain (Farnworth & Colverson, 2015).

The inequalities between men and women regarding accessibility to resources has been widely acknowledged in literature (Makate & Mutenje, 2021; Aguilar et al., 2015; Bonis-Profumo et al., 2021). It was found that many women farmers have limited access to information systems and to farming extension resources, compared to men farmers (Anonymous #10, personal communication, November 23, 2021). In addition, social norms regarding marital status of women farmers explains their access to agricultural extension and inequalities in agricultural participation. Married women farmers are constrained, as these services will be provided by men as they have access to these services. Single women farmers are even more constrained and experience more cultural and structural barriers (Makate & Mutenje, 2021).

Due to the inequalities of women farmers in African agriculture, empowerment of women farmers has been recognized as important in improving livelihoods by multiple authors (Bonis-Profumo et al., 2021; Njuki et al., 2021; Yaya et al., 2018). Empowerment can be explained as the "ability to exercise choice, voice, and influence" (Bonis-Profumo et al., 2021, p.23). Three factors have been defined to stimulate empowerment of women. The first one is resources, which are needed to make decisions. The autonomy to make one's own decisions called agency, is considered as the second factor. Lastly, achievements are important as these visualize the result of certain actions (Bonis-Profumo et al., 2021). Therefore, needs assessment is important in the process prior to agricultural training development. Knowing their resources and current capacities is the first in defining their current level. Therefore, autonomy in agricultural trainings comes from asking farmers about their needs and involving them in the process of development of the training (Anonymous #12, personal communication, November 26, 2021). The training will focus on the gap between their current capacities and the needs farmers themselves want to fulfil (Anonymous

#3, personal communication, November 26, 2021). When farmers among each other share innovations, this gives, especially the women who shared this knowledge, a sense of empowerment (Anonymous #11, personal communication, November 30, 2021).

FAO (2020) has recognized the gender gap within the agricultural sector in SSA and they named different 'gender transformative approaches' in order to address and overcome the inequalities between men and women in a training setting, while empowering farmers at the same time (FAO, 2020; Anonymous #10, personal communication, November 23, 2021). These gender transformative approaches are about making a gender transformation towards changing those systemic barriers and the norms, making it acceptable to men, women, and the community (Anonymous #10, personal communication, November 23, 2021). Few of those gender transformative approaches are Farmer Field Schools, the Gender Household Approach. The Household approach has been mentioned as an effective measure in financial literacy as well. Besides empowering the household, it is an inclusive approach at the same time (Anonymous #3, personal communication, November 26, 2021). In addition, as there are differences between villages on how people act with one another and what their culture is, this also has influence on the effect of the training in different areas (Anonymous #6, personal communication, December 1, 2021).

In conclusion, farmers are a very diverse group. Therefore, within training development it is important to specify the target group that the training will be aimed at. Besides the diversity of farmers, gender differences play a big role in the agricultural sector when it comes to access to information systems and other resources. Knowledge about cultural norms, household dynamics, gender roles, and which persons from the household are being invited for the training are important factors to be considered when developing a training. The importance of reflection on ones own positionality as a Western NGO operating in SSA countries (and potential differences between these) must be stressed.

Chapter 5: Education theories & training development

5.1 Prior to training development

Before developing an agricultural training, attaining knowledge about the target group is very important (Anonymous #3, personal communication, November 26, 2021). As was mentioned before, farmers are a very diverse group. Interaction with farmers is necessary to identify what traditional knowledge is already there because this knowledge must be the basis of the training (Anonymous #9, personal communication, December 3, 2021). Evaluation of this knowledge, these skills and capacities can be attained by a needs assessment of the target group (Anonymous #3, personal communication, November 26, 2021). With the target group it can be clarified what skills they have and what they wish to improve and learn about. A further description on how this can be done in an educational setting, can be found in chapter 5.4. A side note stated by Anonymous #7 about needs assessment, is that it should be considered that the needs expressed might not always be what is needed. What is meant here, is that one might express the need for e.g., a tv, while water availability might be a more pressing issue (Anonymous #7, personal communication, December 2, 2021). What can be taken from this remark is that it might be a good idea to set a base frame for what needs can be considered in the assessment. For example, a frame can be that it has to do with providing necessities, or that is has to do with agriculture.

Another aspect that needs to be considered before the training starts, is the selection procedure. The question of who is selected to take part in the programme, shapes how the programme will go and how motivated participants will be (see chapter 3.3). This is also influenced by who is selecting the participants. Anonymous #10 has mentioned an important problem that often occurs in selection procedures, namely selection bias, where if only one person oversees selection, family and friends are selected first, excluding the people that would benefit from the training (Anonymous #10, personal communication, November 23, 2021). This could cause envy and jealousy within communities (Anonymous #11, personal communication, November 30, 2021) Both Anonymous #11 and Anonymous #10 suggest working with a locally embedded team that understands the local situation. Anonymous #11 elaborated on this by proposing a community level selection where members of different layers of society are incorporated and a clear set of criteria are used. In this way, a referral system is set in place to 100% rule out favouritism.

Another challenge that could occur, are differences in literacy skills, cognitive thinking levels and development of metacognitive thinking (part of soft skills, self-monitoring, reflection, and self-awareness) (Curry, 2008). Before a training starts, within the training development phase, literacy

levels can be considered by adjusting training materials and use more pictures and drawings (Anonymous #3, personal communication, November 26, 2021). In addition, the training is expected to be suitable for that specific context. This can be achieved by working together with institutionalized local partners as these partners know the local circumstances. By working with local partners, a sustainability strategy can be incorporated as local institutions can take over the training on the long term (Anonymous #3, personal communication, November 26, 2021; Anonymous #9, personal communication, December 3, 2021).

5.2 Adult learning

Knowles (1984) was the first to acknowledge that adults require different education from children, as they differ in life experience and sense of control over education needed. He describes two types of learning: teacher-centered and learner-centered (Knowles, 1984). It is argued that children education can be more teacher-centered, while adult education due to more life experiences and a need for control over the learning process, requires a more learner-centered approach (Curry, 2008). In a learner-centered programme, the responsibility for learning is expected to lay with the adult, as is the motivation to learn. Motivation in a learner-centered program is internal, through their own self-esteem, confidence, and recognition. The role of a teacher in this model is facilitating the process, rather than imposing a subject or learning objective. In a learner-centered programme, a participant is ready to learn, because they are motivated for it, stressing the importance of both intrinsic and extrinsic motivation. Personal experiences, values and goals can be used to shape the programme to facilitate for the participant, ensuring the highest desire and ability to learn (Curry, 2008).

It is shown that adults prefer more problem-based and participatory learning, learning through experiencing; Seeing is believing, and believing is adopting (Curry, 2008; Anonymous #3, personal communication, November 26, 2021). In training development, there is a need for a shift towards more competency-based learning, where the farmers knowledge, skills and attitudes are trained, rather than only transferring knowledge (Anonymous #3, personal communication, November 26, 2021). Learning in the field by means of demonstration and trialling, offers a chance for participants to try out what works most effectively for themselves (Anonymous #3, personal communication, November 26, 2021). When new knowledge from the training is applied and results can be observed, the farmers gain confidence and become more motivated (Anonymous #2, personal communication, November 26, 2021).

Furthermore, adults are more capable of thinking in the long term and usually understand the fact that learning is a lifelong process, where one learns for the future. Combined with a need for self-

directed learning, where individuals take initiative in their learning process, adults' benefit from feedback and evaluation, as it is a moment to set and measure oneself to the (self-set) standards (Curry, 2008). So, a training programme needs to be adaptive to the needs of the participants (Anonymous #1, personal communication, November 25, 2021) and be flexible in nature, rather than rigid (Anonymous #12, personal communication, November 26, 2021). In short, adult education should revolve around the experiences and goals of the participants, with a focus on learning for the future and autonomy over the learning process.

5.3 Moving towards learner-centered

There is however, a challenge of moving from teacher to a learner-centered approach, when students are particularly used to being lectured (Curry, 2008). This move requires a shift in both teacher and participant mindset. Participants will no longer passively absorb information but play an active role in their learning process. For teachers this means to learn to have faith in the participant and let go of control over the learning process (Curry, 2008). If the current training approaches in local context are very teacher-centered, enough effort should be put into aiding the switch to learner-oriented. A switch needs to be made from just transmission of information to transformative learning. Transformative learning is about how the information affects who you are, how it affects the values you live by, and how it becomes an integral part of your being (Anonymous #1, personal communication, November 25, 2021). It is about engaging and emerging yourself in an issue, becoming more aware of how that issue affects you, socially and emotionally. A living curriculum, where a participant can explore, experience, experiment and evaluate, calls for rethinking and redesign. However, an investment in this type of learning will lead to bigger investment returns, compared to investing in a short-term training-oriented work (Anonymous #1, personal communication, November 25, 2021).

In the development of a training, a learner-centred approach furthermore can be achieved by taking time to enable the development of a sense of connectedness (Charatsari et al., 2020). It has been shown that two aspects are of major importance at the start of a training to ensure active participation in the training. The first is instilling a sense of community, of belonging to a group and the fostering of positive relations within this group. This contributes to expression of a collective self (a perception of self, based on the identification with a group), self-confidence, and intrinsic motivation. The experience of positive interactions with other participants increases extrinsic motivation as well, in the form of contagious motivation. Contagious motivation is experienced as the exchange of motivational energy within a group and can contribute to the aspiration to reach group goals and become better farmers. Together with the participants'

interest in the subjects discussed, this increases active participation and allows for more freedom to express experiences and knowledge (Charatsari et al., 2020).

5.4 Training process

In a training, the focus hence should first be on getting to know one another, creating a sense of community and a deeper understanding of the context one finds oneself in. (Anonymous #12, personal communication, November 26, 2021). Intrinsic motivation is always already there, what is needed is listening to the needs of the participants and find what they are intrinsically motivated for (Anonymous #7, personal communication, December 2, 2021). As a training developer, it is not about making the program and finding a way to intrinsically motivate participants, but it is about leaning into the intrinsic motivation that is already there (Anonymous #7, personal communication, December 2, 2021). This crucial first step in a program, creating a common ground to stand on, will ensure that the participants remain motivated and promotes an environment where taught practices are more likely to be adopted (Anonymous #12, personal communication, November 26, 2021).

An educational model building on this first step and creating a full circle approach, was provided by Anonymous #12 (Anonymous #12, personal communication, November 26, 2021). After creating a group identity, the next step will be to decide as an individual as well as a group, where one wants to go, what is the shared vision for the future, and what are the desired outcomes of the training for the community. Then, once a group has described the desired reality to achieve in the next years, it is time to assess why this is not a reality yet. What stands in the way of this goal, what needs to change, or what is missing to achieve the goal? Step four will be to figure out who else is involved in reaching this goal. A stakeholder map for example could be created, to get an understanding of the power and interest dynamics within the area of interest. Who has power, who can you reach out to for information, or who can we bring into the conversation? Next up, a plan of action on how to bridge the gap can be created. Focusing on empowerment, in this sense is done by consciously considering where you are in your environment and actively finding solutions to reach the goal together (Anonymous #12, personal communication, November 26, 2021).

Methods to achieve this problem-based learning is by using small group discussions to exchange knowledge, experiences, difficulties, and solutions (Curry, 2008). Another form could be contract learning, in which participants actively reflect on their needs, set goals and as it were, sign their own contract. However, contract learning is often seen as an individualized form of education, and in this focus might not match the local cultural context, as the African contexts tend to be more

community-oriented (Curry, 2008). Yet, contract learning could be adapted to groups by combining it with small group discussions where a group and community vision and goal can be developed.

These groups then can learn from each other, also called farmer-to-farmer learning (Anonymous #2, personal communication, November 26, 2021). Farmers visit each other's farms and see how other farmers work. Based on these new insights, farmers can try new methods on (parts) of their own plots, and see if it works for them (Anonymous #2, personal communication, November 26, 2021). What the actual learning space is, is often forgotten about when creating a curriculum, while it is important (Anonymous #12, personal communication, November 26, 2021). Learning in just one setting, is quite limiting, as learning is done everywhere, all the time. Furthermore, a farmer cannot be separated from the community, and so the learning space should not be separated from the community (Anonymous #12, personal communication, November 26, 2021). Taking knowledge and experience from the training, into the community, and promoting the sharing of insights, contributes to the sustainability of the project, in the sense that the likelihood of continuation will increase (Anonymous #11, personal communication, November 30, 2021). However, it is good to be aware that there is much more knowledge exchange within the community than outside the community reaching other villages. Agricultural knowledge and practices often do not travel further than five kilometres (Anonymous #11, personal communication, November 30, 2021).

5.5 Co-creation

An approach that incorporates all recommendations above, elaborating on autonomy and gaining control over the learning process, is co-creation. Co-creation is a process where the participants have full ownership over the process (Anonymous #12, personal communication, November 26, 2021; Anonymous #2, personal communication, November 26, 2021). It has been defined as a process through which all actors, both participant and teacher, contribute to the conceptualization, development, and implementation of their own training program (Cook-Sather et al., 2014). Each actor contributes equally, yet not necessarily in the same way, as each can use their talent and expertise to contribute to different parts of the process (Cook-Sather et al., 2014).

The main attributes of co-creation have been identified by Kaminskiené et al. (2020) and consist among others of both a collaborative process and output, with great attention to the learner's autonomy and agency over the process. The community is recognized as an essential aspect of learning, and partnership in learning is crucial. Furthermore, plenty of attention is given to the development of metacognitive practices. These practices help farmers to become aware of their strengths and weaknesses (Kaminskiené et al., 2020). Developing metacognitive skills can among

others be stimulated using transformative learning, where participants will examine, question, validate and revise their perspectives (Cranton, 2006). As co-creation is all about the democratisation of learning, the teacher will serve the role of facilitator as well as co-learner, acknowledging and using the knowledge participants bring to the table (Kaminskiené et al., 2020). As a result, a deepening in innovating capacity through the process of co-creation can be observed (Charatsari et al., 2020). Co-creation has been regarded as an important approach within training development (Anonymous #3, personal communication, November 26, 2021).

5.6 Monitoring and evaluation

Monitoring and evaluation can be done on two levels, first within the training by participants and coaches, the second to assess the impact of the training programme. A good training programme contains both. Within the co-creation training approach mentioned in chapter 5.5, feedback and reflection loops are incorporated. At several moments within a good training, a space for reflection is created. With the end goal and learning goals in mind, tracking the progress along the way is very important (Anonymous #12, personal communication, November 26, 2021).

The importance of monitoring impact of the whole training was mentioned by Anonymous #1, Anonymous #7 and Anonymous #10 during the interviews. A monitoring and evaluation system should include a control group so that impact can really be tracked (Anonymous #10, personal communication, November 23, 2021). Other ideas on impact assessment tools were given by Anonymous #1, such as a monitoring map to track e.g., crop growth of biodiversity, creating a platform to share data and progress and make it available to other communities, so they can benefit as well (Anonymous #1, personal communication, November 24, 2021). At the same time, it is important to be aware that the set of indicators you develop in your monitoring system at the beginning may not be suitable at the end. Frequently a very different impact that you designed for is going to happen (Anonymous #7, personal communication, December 2, 2021).

To conclude this chapter, it is important to consider the following things before starting a training. The first is to assess the local needs and (traditional) knowledge, this must be the base of the training. Secondly, you must think about how participants are selected and how this can be done without creating selection bias. Finally, before starting a training, illiteracy needs to be considered, adapting the programme to include these participants as well. Then, during a training, the focus should be to build on the local context and knowledge and move towards a learner-centered approach. Co-creating a program, based on what participants are most motivated for will increase the likelihood of adoption. The last part that is of importance, is reflection and assessing the impact the training program had on both the agricultural practices and the community.

Chapter 6: Case Study

To get an idea of the experiences of the trainings developed by the Western NGO 100WEEKS, focus groups have been carried out with participants and coaches of the training. As the program of 100WEEKS is still focused on women, only women were interviewed. The main goal of the focus groups was to get a better view on the daily activities of the participants, how they got to know about 100WEEKS and their motivation to participate in the training program. Also, the barriers to participate in the training and to adopt it and opportunities to improve the current program were discussed.

6.1 Daily activities

Most women that were interviewed perform farming practices for a living. This can both be animal rearing or growing crops. Most women have in common that they wake up before their children or husband. They must take care of the children, prepare the meals and doing house chores. Besides this they perform farming activities such as gardening, milking the cow or trade products on the market. After a long day of work they go back home to prepare dinner and take care of the children again. The financial diary is also filled in by the women, mostly at the end of each day (Group discussion women).

The daily activities of the coaches are comparable with those of the women who participate in the training. They also wake up early in the morning and take care of their family. They perform some farming activities like taking care of the animals and gardening. In the evenings they have some more time to relax compared to the women. For example, they can watch some TV before they go to bed (Group discussion coaches).

6.2 Participating in the 100WEEKS programme

Most women have heard about the 100WEEKS programme through the coach. Some of them were approached by an employee of 100WEEKS, the coaches or other central persons within their community. Others happened to hear of the programme through acquaintances. It is noticeable that multiple women also mentioned the cash transfer when they told how they got to know about 100WEEKS. When the women were asked why they decided to participate in the programme, all responded that they were told that the NGO would give them money every week when they would participate in the training. As many of these women reported that they did not have capital themselves, this money transfer would be a good opportunity for them to invest this capital in their business. Also, the fact that the money was free without a loan was a good reason to take part in the programme. Besides the cash transfer, being part of a women group was a reason to

participate as this would be an opportunity to make new friends and learn from each other (Group discussion women).

One of the coaches was asked to participate in the training by a man who was doing construction work at her home. He got the task to search for women to lead the group. She already had some experience with working with women. She was therefore convinced that she was able to lead the trainings as the women would listen to her and follow her instructions. She moved around the village to mobilize women to participate in the programme and received training from 100WEEKS before she started giving the trainings to the women. The other coach was approached by a catechist from her village. Although she had no experience as a teacher, she was selected because she has experiences with running a business. She had to go through a selection process with other women to eventually be selected as a coach. They both got involved as a coach because they like to work with women and help them. Also, receiving a small amount of money convinced them to accept the task of becoming a coach (Group discussion coaches).

6.3 Barriers to participate

The most common barrier for women to participate in trainings was their hesitance/distrust towards Western NGOs. A lot of NGOs already came by, promising to help but they never came back to really help the women. This made it hard for them to believe 100WEEKS as well and this made them hesitant to participate in the programme. Also, the ignorance on the selection criteria and the amount of time they must invest in the programme made some doubt. However, when these became clear, the women were willing to participate in the training program as they agreed with terms of the programme (Group discussion women).

Some of the barriers the coaches see for women to participate in the programme, is that they do not meet the requirements to join. For example, they do not have a national ID or are above the maximum age. Also, some people are known for their bad behaviour. They are therefore not selected to participate in the program as they will spend the money they receive on bad things like alcohol (Group discussion coaches).

6.4 Barriers to adopt the practices

The women face different barriers to adopt the practices they have learned on the long term. The fluctuating prices on the market are a big uncertainty. They invest the money they receive from the training in their farming practices as well. They buy seeds to plant crops or fertilizer from it, but the prizes fluctuate so much that by the time they harvest, they are not able to realize a profit. Also, other unforeseen circumstances are causing a barrier to adopt the practices. Examples of

these barriers are bad harvest due to soil depletion, animal diseases and less demand due to the COVID-19 lockdown or their children or themselves getting sick. Also, people who borrow money from them and not return it in time, prevent them from adopting the practices. However, the women are very confident in continue to adopt the practices they have learned after the 100 weeks are finished. The practices have taught them new skills and due to this, they are able to meet the basic needs for themselves and their family. The 100WEEKS programme really made a change in the lives of the women and got them into a better situation (Group discussion women).

According to the coaches, the main barrier to adopt the practices is the difference in motivation of the participants. Some groups consist of highly motivated women who try to understand the training and who keep to the agreements of the programme. For example, the motivated women understand that the money is not for spending, but that it is a way to help them invest and develop themselves. In this way, they already accomplish a lot of things during the training programme. In other groups, some women have a habit to not pay during the cash rounds. This demotivates others to save money as they fear that the other women might borrow the money but are not paying it back. This creates tension in the group (Group discussion coaches).

6.5 Suggestions to improve the current program

Overall, the women are very content with the training programme. However, they would like to have a more in-depth training on farm practices on different crops, which feed to give to the animals, and how to use fertilizers. Also, more knowledge about modern farming practices is mentioned as a possible improvement of the programme. Help on the economic side of farming would be appreciated as well, how to sell your products and which markets to focus on. More monitoring of the women during the training would be appreciated to ensure that they are using their money properly. This would also help to keep track on their initial goals. Facilitating agricultural materials such as pesticides and herbicides was suggested by one of the women to give them more space to save their money instead of investing it immediately in agricultural practices. Providing more room in the training for the specific interest of women would be appreciated as well.

The part of the training the women most liked was the Village Savings and Loan Association (VSLA) trainings. The saving aspect of the training is highly appreciated as it teaches them to save the money they earn and not spend it on unnecessary things. Also, the training on 'the good and bad wolf' is pointed out as part of the training that they really enjoy. This training makes them think more about their own will. The good wolf wants them to achieve good things while the bad wolf prevents them from reaching these good things. With this part of the training, they developed a

whole different way of thinking about who they are as a person and how they can get in their own way. The budget training on the other hand could be improved as it is hard for them to understand. It would therefore be good to simplify this budget training more. Also, more knowledge on how to run a business should be incorporated in the training programme. Working as a group is much appreciated as this stimulates the women to advise each other and share ideas. It would also be beneficial according to the women to interact with other groups who received the training to share knowledge and experiences. Include men in the training will stimulate the knowledge sharing as well according to the women. Men could bring new ideas to the group. Besides this, at home, women and men also mix. It would therefore not be a problem to mix the training as well. Also, men participants and coaches could bring new skill to the training where the women can learn from. However, the other focus group that was interviewed suggested to keep men and women separated as it can cause for commotion around money matters, or because men are less willing to participate in the training as they have less spare time.

Overall, the women would really recommend the training to others. However, they stress that they are not sure whether others will participate in the training if they would not receive a financial gain from it. Also, the women might feel uncomfortable toward other farmers that did not receive the training. They benefit from the training and others become jealous as they were not selected to participate and therefore do not gain from the training. The illiteracy level of some people gets them worried about how they can attend the trainings as they are not able to read and write. It is therefore important to involve more people in the training if possible. Besides this, trainings and help on how to speak English, water sources, electricity and climate changes are given as suggestions for improvement as well (Discussion group women).

The coaches on the other hand, would like 100WEEKS to have a presence in the training occasionally to serve as motivation to the participants while taking them through the benefits of savings and personal development. They believe that the presence of 100WEEKS will reaffirm and reinforce the trainings these women receive. They suggested empowerment of these women to improve their motivation and providing them with resilience training.

Also, while the women said they liked the VSLA, the coaches are worried about the loan defaulters in the association who take loans and do not pay back, and at the same time skip the training. The coaches will like 100WEEKS to help the group to retrieve their money by deducting the loan from the defaulters' weekly transfers (Discussion group coaches). In training for both men and women farmers, the coaches have varying suggestions. Some advocated for having a mixed group of men and women farmers because of the different roles men and women play in agriculture so they can

be made aware of these roles. Whereas others advocated for separate groups between men and women because of their varying interests, hence, men should have their own group with a male coach who will train them in what they are interested in as men, and the same goes for the women (Discussion group coaches).

In general, the coaches would like 100WEEKS to provide the women with herbicides, pesticides, fertilizer, and improved seeds to help them to produce healthy crops. Some of the coaches suggested providing these women with materials they need to set themselves up like calves, piglets, or chicks instead of cash because in some cases, the cash they receive is not enough. Finally, the coaches are eager to learn more through more trainings and they see their opportunity to teach these women as an opportunity for them to learn as well.

Discussion and limitations

Limitations of the research

In this research the aim was to understand how farmers in SSA can be motivated to adopt agricultural practices to improve their livelihoods through agricultural trainings. However, farmers are also influenced by other factors to the extent they can adopt agricultural practices and it is not only about motivation and trainings (Teklewold, Kassie & Shiferaw, 2013). Several other factors could for example be economical conditions like distance to markets and mode of transportation. Furthermore, it is important to take health, safety, and environmental conditions into account (Veisi, Carolan & Alipour, 2017). Policy variables also have a high impact on how farmers can improve their livelihoods. Several factors could for example be social safety nets, social capital, market access and tenure security (Teklewold, Kassie & Shiferaw, 2013). These findings highlight the relevance of including these kinds of variables.

Furthermore, this research also focused on cultural sensitivity. It is still important to be aware that it might reflect a Western bias with an emphasis on the individual as the unit of analysis and a lack of attention for the socio-cultural contexts (Taylor, Duveskog & Friis-Hansen, 2012). Less attention was given to deeper analysis of social relations within the farmers' communities and the relations with institutions. However, according to Frisk & Larson (2011), understanding the larger system can also create a barrier to change as individuals when they realize that their actions alone will not lead to substantive outcomes. Improving livelihoods of farmers can be made through individuals acting as a part of the collective, while building the social knowledge needed to advance these improvements (Frisk & Larson, 2011).

Since this research was done by seven young women of whom six out of the seven have a Dutch nationality, it is good to take positionality into consideration. The position of the researchers in relation to the study could potentially have influenced different aspects of the study, because of the cultural background and personal views (Qin, 2016). The researchers recognize these biases and try to gain insights on how to approach this research setting by involving people with different positionalities as much as possible.

In addition, in this research the focus was on SSA. However, when looking at agricultural-ecological and socio-economic context, there is a strong heterogeneity in many locations (Beza et al., 2017). According to Anonymous #10 (2021) and Anonymous #11 (2021) there are big gender differences between Eastern and Western Africa for example. In Western Africa, households are bigger, and women and men live more separately. In East Africa, households are smaller and women and men

are living more together as one team (Anonymous #10, personal communication, November 23, 2021 & Anonymous #11, personal communication, November 30, 2021).

The available time to study the research problem was only eight weeks. Even though a research problem was chosen that could be completed within this timeframe, there were still some time constraints. For example, the focus has not been on how to train illiterate people. Furthermore, multiple suggestions have been offered how to stimulate motivation of farmers, and important aspects when developing a training have been identified. However, this research has not given practical guidelines on how this can be implemented within the context directly (the development of monitoring and evaluation forms for example). Moreover, there is a need for further research which will be discussed below.

Limitations of the research methods

Since the focus groups in Africa could not be performed by the research team, the focus groups were done by the programme manager of 100WEEKS in Uganda. Because of this, secondary data was used to receive information. As the women and coaches in the focus groups know the moderator, they might have felt more open to share their ideas. At the same time, people could have felt more insecure about sharing their ideas. Furthermore, it is important to consider that the focus groups were done in local language and that they were translated and transcribed by The programme manager herself, so there might be a subjectivity issue. Moreover, the focus groups only included women who are practicing some agricultural activities. Since the training programmes of 100WEEKS for farmers did not start yet, information could only be received about women who are already joining programmes of 100WEEKS. Lastly, it is good to be aware that the focus groups only took place in Uganda, while the research focus was on SSA.

This research is based on qualitative research where interviews, focus groups and secondary research were used to get in-depth insights about how farmers in SSA can be motivated to adopt agricultural practices to improve their livelihoods through trainings. When using this type of research, it is important to be aware of some practical and theoretical limitations. Conclusions cannot be generalized over larger populations since the information may be biased and unrepresentative of the wider population. Furthermore, the research cannot be replicated since interpretations of information can vary greatly.

Although interviewees were selected from different areas and disciplines related to the research topic, it is important to realise that most of the interviewees are from Western countries, having their own (Western) perspectives and points of view. This could have set boundaries to the access

to relevant information. In addition, only English sources were used during this research, which could create some extra challenges with implementing indigenous knowledge in this research, since there could be a translation bias.

Future research

Despite the contribution of our study, it still faces some limitations as described above that merit further research. First, further research about motivational factors, culture, and gender sensitivity as well as educational theories and training development approaches should be performed to support the results of the research report and get even more in-depth knowledge. It would be good to include more existing practices such as experimentation in public engagement and multi-stakeholder dialogues (Pereira et al., 2020). Furthermore, it is recommended that future studies will consider both types of motivation and to focus more on different opinions and perceptions about the value of financial incentives, since there might be a nuance in how harmful this is.

Second, the programme manager in Uganda of 100WEEKS mentioned in the interview that 100WEEKS is now starting with a pilot training whereby women joining the programme will not receive money during the first month. The results of this pilot could give more insights in the value of financial incentives and if it might be useful to give money in a later stage of the program as to first stimulate intrinsic motivation.

Conclusions

The objective of this research was to broaden knowledge on how farmers in SSA can be motivated to adopt agricultural practices that improve their livelihoods. Our results suggest that from an intrinsic motivation perspective, autonomy and choice over own learning is found to be very important. When there is focus on farmer's own knowledge and capacities, motivation to act will follow. In addition, farmer-to-farmer learning plays an important role. When farmers listen to experiences from other farmers and see the results and benefits from different practices, they will be motivated to adopt these practices themselves.

Furthermore, extrinsic motivational factors such as social environment and financial incentives are found to have an influence on motivation. Especially, the motivation of farmers to participate in trainings for the sake of their community is meaningful. Literature and experts have different opinions on offering monetary incentives and the conditionality of money depending on the attendance of trainings. The opinions on linking cash flows to participation in a training programme are mostly negative, but there is also a nuance. When offering money, awareness should be given to the explanation of financial incentives, to have a positive impact. Only when the goal of monetary incentives is framed correctly, it can be an addition to intrinsic motivation. Both intrinsic and extrinsic motivational factors are important to recognize when developing training curricula. It was found that intrinsically motivated farmers require less extrinsic motivational factors. Besides, in some cases it is possible that extrinsic motivation can undermine intrinsic motivation. Therefore, most attention should be given to intrinsic motivational factors when developing training programmes.

Besides motivational factors, the local context, culture, and situational circumstances play a role in an effective training environment as well. Especially gender roles were found to be influential on training groups and input which will be given by the participants. Within farmer's own reality, it emerged that motivation to participate in the training is dependent on feasibility within their personal situation considering costs, work, and childcare.

Finally, it appeared that these motivational factors can be stimulated by different training designs. Those are participatory learning, farmer-to-farmer learning, transformative learning, and co-creation. Before starting the training, it is important to assess the local needs and knowledge, think about the selection procedure to prevent a selection bias and, illiteracy should be considered to

include more participants. Essential in all these trainings is the agency of farmers to decide upon their own goals and learning process, which is found to be motivational.

In conclusion, knowledge about the elements of the SDT is important to consider when designing an agricultural training programme. Intrinsic and extrinsic motivational factors both play a role in participation in training and the adoption of agricultural practices. In addition to the SDT, knowledge about situational circumstances such as culture, gender roles and local context are essential in understanding the circumstances of the farmer. Mapping out these variables provides a true understanding of the given context. They create pathways towards advanced international development practices that depart from local, pre-existing knowledge systems in which trainings given by external NGOs can be seen as complementary tools to these present practices. These various variables have been taken into consideration as an academic foundation for the rest of this report, offering academic recommendations and suggestions.

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