Is A Holistic Approach Relevant for Non-Governmental Organizations’ Agricultural Extension Strategies?

- Case Studies from Tanzania

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Abstract
Agricultural extension can play a major part in the development and adoption of sustainable agriculture practices. Local NGOs have a unique opportunity to serve as extension agents due to their acceptance and close relationship in communities. The paper argues that agricultural extension needs to adopt a holistic approach to the communities’ development to achieve a lasting and sustainable agriculture. This study examines four NGOs in Tanzania to see 1) how they provide extension services; 2) if they have a holistic approach; and 3) if the holistic approach is a conscious strategy. The findings show that a mixture of extension methods is commonly used by all four of the NGOs. Moreover, the NGOs offer a wide variety of projects, which focus on different issues. This results in a holistic approach, even though this probably is rather a result of funding practices than a conscious extension strategy.

Key words
Extension theory; Participation; Sustainability; Tanzania; Sustainable Development Goals

List of abbreviations
4H - Head Heart Hand Health
AGM - Annual General Meeting
BRELA - Business Registration and Licensing Agency
FA - Farm Africa
FIDE - Friends in Development
ICT - Information- and Communication Technology
NGO - Non-Governmental Organization
PYD - Positive Youth Development
SDG - Sustainable Development Goal
TAS - Taxpayer Advocacy Service
TCCIA - Tanzania Chamber of Commerce, Industry and Agriculture
ViCoBa - Village Community Bank
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**Introduction**
In September 2015 the United Nation’s general assembly adopted 17 sustainable development goals (SDGs). These goals have a holistic view of development and addresses problems all over the world. These are now to be implemented across the world with the aim to be achieved by 2030. This requires global, regional, national and local mobilization and adaptation (UN 2015). A sustainable approach towards agriculture is seen to be a means to reach several of the SDGs. Such an approach can include: managing in-field biodiversity to enhance resilience to climate related impacts (SDG13) and combat malnutrition (SDG2); planning landscape configuration to maximize multiple agroecosystem services such as pest control and pollination to improve food security (SDG2) and reduce disease risk (SDG3); or implementing riparian and field margin buffers to secure clean water (SDG6) (Wood & DeClerck 2015). In an approach like this agricultural extension becomes an important factor to transfer knowledge between scientists and farmers. Useful extension agents are the local non-governmental organizations (NGOs). NGOs’ holistic view and the fact that they are integrated and accepted in the community, give local NGOs an advantage compared to larger international NGOs like Green Peace and WWF (Ménard 2013). Most NGOs are dependent on external funders. The majority of the funding originates from international actors, while little funding comes from domestic private actors. A small number of NGOs receive the majority of the international grants, while most NGOs have little or no funding at all which can make it difficult for NGOs to have their activities (Barr et al. 2005).

**Problem and purpose**
Local NGOs play a big part in the development of Africa, but is it a sustainable development? Much have to be done to fulfill the new SDGs, and every level of every society have to adapt and play their part. In the process of implementing the SDGs, it is useful to know what is already being done and which tools to use. If the work of the NGOs leads to a sustainable development, this has to be highlighted, encouraged and maybe used more extensively. If, on the other hand, it leads in the wrong direction or no direction at all, they may need an alternative approach.

The aim of this study is to find out what methods the selected NGOs use in their extension and if the NGOs already play a part in the process towards a sustainable development. The study also aims to find out if the NGOs can use a holistic approach in their work for a sustainable future. This knowledge can hopefully be used in the implementation of the SDGs in similar communities, to avoid spending time and money on reinventing the wheel.
Research questions

To fulfill the aim of this study, I intend to answer the following questions:

1. What kind of agricultural extension methods are used by the selected NGOs?

2. Do the NGOs work with a holistic approach?

3. Is the holistic approach a conscious strategy for a better extension or is it an adaptation to the funding system?
**Theoretical framework: Agricultural extension**

There is no universal definition of agricultural extension. The term extension can be examined by looking at a number of statements that have been written about it (quoted in Black 2000):

“… extension involves the conscious use of communication of information to help people form sound opinions and make good decisions”; “the use of communication and adult education processes to help people and communities identify potential improvements to their practices, and then provides them with the skills and resources to effect these improvements”; “… public and private sector activities relating to technology transfer, education, attitude change, human resource development, and dissemination and collection of information”.

There are four different main types of methods of agricultural extension theory and practice; “top-down” transfer of technology; participatory “bottom-up” approaches; one-to-one advice or information exchange; and formal or structured education and training. No method or model is likely to be sufficient by itself – they complement each other (Black 2000).

*Top-down* transfer of technology

For many years the extension agents’ main task was to promote the researchers’ new technologies and knowledge to farmers. The focus was on farmers who were thought to be “early adopters”, and it was expected that once they embrace the technology other farmers would follow their example. Training and Visit is one such approach. The “top-down” method has however been subject to much criticism. It was judged not to pay enough attention to the long-term environmental, economic and social effects of the new technologies. The assumption that the practices would automatically diffuse down to other farmers has been questioned, even though many successful examples remain. There is also doubt that the adoption of whole concepts, such as agroforestry would prove as successful as the adoption of simpler technologies. A critique regarding that farmers were being devalued in this “top-down” approach led to the rising of a more inclusive and participatory “bottom-up” approach, also termed “group-empowerment” (Black 2000).

*Bottom-up* approaches or Group empowerment

The more participatory methods of the “bottom-up” approach developed in different directions. In some methods the farmers acted as information sources for researchers, who created solutions to be adopted by the farmers. Other methods strived to empower farmer-groups to receive the knowledge and resources to develop their own economic, social and environmentally sustainable productions. Chambers et al (1989) (quoted in Black 2000) explain the “farmer first” approach: “Instead of starting with the knowledge, problems, analysis and priorities of scientists, it starts with the knowledge, problems, analysis and
priorities of farmers and farm families. Instead of the research station as the main locus of action, it is now the farm. Instead of the scientist as the central experimenter, it is now the farmer, whether woman or man, and other members of the farm family.” Advantages associated with participatory methods include: the recognition of local knowledge and traditions; enhancing local capabilities, which leads to higher likelihood to generate sustainability; empowerment of local farmer groups; and information-, idea-, experience- and risk-sharing amongst farmers. However, there are also critiques against this kind of methods; farmers could miss the “big picture”, which could have devastating environmental effects; differentiating values, resources and ideas amongst a community could lead to distress or uneven distribution of power; the solutions may not meet the expectations; and there may be little or no spread of knowledge beyond the group (Black 2000).

**One-to-one advice or information exchange**
Advice or information given to only one recipient to increase his/her income or harvest can be seen as a private good, and should be paid for by the recipient. If, on the other hand, the information gives benefits beyond the farm, e.g. concerning environmental issues, it can be seen as a public good. This service can therefore be divided into public extension services and private farm management consultant services. This is seen to be less efficient than group-based methods, since the knowledge or technology reaches fewer people. Concern is sometimes expressed over the lack of coordination between different information sources, which can lead to differentiated advices (Black 2000).

**Formal or structured education and training**
Studies from Australia show that farmers are reluctant to attend formal long-term higher education, like that offered by universities. They refer to a lack of time, non-relevant or non-important courses, lack of awareness in the courses available, lack of confidence, and patriarchal thinking in rural communities. On the other hand, many farmers are positive to education that covers a short period, is relevant to his/her farm and gives measurable outcomes. The most preferred learning methods involve watching, listening, asking questions and doing, while reading is not popular. The social factor can serve as a motivator for those attending group-based education and some sort of certificate that validates their knowledge and can offer work opportunities is probably appreciated. It has been found that farmers, who have higher qualifications and who attends field days, seminars, conferences or industry meetings, make a higher profit of their farms. It also shows that these farmers are less reluctant to change their practice to improve the long-term effects of the farm. However, there
is little evidence to support any correlation between farmer’s formal education and good farm management (Black 2000).

**Agricultural extension today**

Dunn et al. (2000) argue that extension practice needs to move its focus away from individual decision responses toward fostering the cultural conditions in which farmers are empowered to make decisions which can account for the range of factors affecting their lives. The social context and a holistic approach are important factors in extension. A holistic approach entails a broader perspective to development. It requires a view of the community as an interconnected system which depends on all the different parts of the system to function (Allahyari 2009). A case study from Iran and a comparative study from Mexico and Peru give the same conclusion, a holistic approach is needed in extension for a sustainable agriculture practice (Allahyari 2009; Hellin 2012). Yet another case study from Iran argues that conflict management should play a large role in agricultural extension. This adds to the holistic approach to view the societal problems in agriculture (Ahmadvand & Karami 2007).

Aker (2011) explores the new possibilities to use information and communication technology (ICT) like mobile phones as tools in agricultural extension. A case study from Kenya argues that extension services need to be more accessible, and that ICT-based services is one way to achieve this (Gido et al. 2014). ICT-based extension can be a tool to a more holistic extension model (Baig & Aldosari 2013).

**Definition of participation**

Participation can be defined in different ways, and since this study will group extension methods according to how participatory they are, this needs to be defined.

Participation can vary from a people-centered to a planner-centered perspective. In a planner-centered perspective, the participation can be a means to reach the planners objectives. A participatory project is more likely to get the participants engaged and makes the new inventions accepted and lasting. A people-centered participation, on the other hand, focuses on empowering individuals or groups to make their own decisions. It is argued that sometimes the decision has already been made, and the voices and votes of the people gives legitimacy to the decision. Participation can also be seen as a process that creates arenas for discussions, where previously none existed because of difficult power relations (Kateka 2010).

In this study, the participation is defined as people-centered, where the decision-making lies with the group or individual.
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**Research methods**

**Time and place**

The study was performed during five weeks in two places in Tanzania, Babati and Tanga. Babati district is located not far from the northern border in the Manyara region in the middle of the country and is divided into Babati town and Babati rural. The district has 312,392 citizens, of which 93,108 lives in Babati town. Tanga is a coastal city, also located close to the northern border, in Tanga region. The city has 273,332 citizens (National Bureau of Standard 2013).

![Figure 1. Map over Tanzania (EMapsWorld 2016)](image)

**Selection**

The NGOs studied were Farm Africa, Friends In Development (FIDE) and Tanzania Chamber of Commerce, Industry and Agriculture (TCCIA) in Babati and 4-H (Head Heart Hand Health) Tanzania in Tanga. To select which NGOs to study, the criteria was based on the 4H organization, which is an NGO that has agricultural extension activities for youth. The common criterium of the NGOs was therefore that they work with agricultural extension. The key informant, Mr. Calyst Kavishe suggested which NGOs in Babati that fitted the criteria. 4H Tanzania is based in Tanga. The informants were selected with help from the field assistants, Mwanahamisi Hussein and Patrick Mchau. The criteria for informants were that...
they were farmers, members or participants of the selected NGOs, and equal numbers of men and women to get information from different views. However, it turned out to be difficult and the study had to interview the members/participants who were available. This means that the studied NGOs or the informants were not chosen at random.

**Semi-structured interviews**

To answer the research questions, a qualitative study with a total of 22 interviews was made with three NGOs from Babati and one from Tanga. The interviews were of a semi-structured nature, which allowed some improvisation and responding to questions answered, yet still have the basic questions.

To get a better picture of the NGOs interviews were made with both leaders and four members/participants of each NGO. In Tanga, an extra interview was made with a club-advisor. Had interviews been made with leaders only, the risk of over positive pictures were apparent.

The interviews lasted no longer than one hour and two different question forms were used, one for the leaders and one for the members/participants. They were however structured the same, with similar themes (see appendix 1). Since it was not certain that the NGOs were familiar with different extension methods, they were asked to describe their methods. The methods are analyzed and connected to suitable extension theories. In some interviews the field assistants acted as translators.

**Ranking technique**

To find out which SDGs were relevant, the leader of each NGO was asked to choose five goals they identify the organization’s activities with, using a ranking technique. This efficiently excludes any personal valuation from the interviewer, but there may still be some personal values from the informant. The participants/members of the NGOs were asked if the NGOs approach have given any positive results in their lives over time, and if indeed the work with the SDGs have been successful.
Secondary data
To give the reader some background and a bigger picture, the paper is built up by information and facts from secondary data. This forms the introduction and theoretical framework and enhances the analysis and discussion. The texts used are mostly peer reviewed scientific articles, but also official reports and books.

Limitations with the chosen research methods
Since there is a risk that the researcher's presence might make the informants tell a story that sounds better than reality, there may be some bias. To minimize this risk, the study was constructed to get information from two sides, both leaders and members/participants.

Because of the limited time it was not possible to reach equal numbers of men and women. This have resulted in information from mainly a male point of view. In hindsight it is apparent that the study in Babati should have been limited to two NGOs. By doing that it would have been possible to acquire a deeper knowledge from more of the members/participants, and thereby a better picture of what they perceive is a good method.

It turned out difficult to find NGOs who were dealing with only agricultural extension. This is because of their dependence on external funds, which makes their projects goals vary. The short term nature of the projects also made it difficult to find members/participants to current projects. Some of the informants participated in projects that are no longer running.

Some of the interviews were made with a translator. This may have resulted in some information getting lost or some incorrect translations.
Results from case studies
Above we have addressed previous research and how the data collection was conducted. Now we turn to the results of the research. Below is a summary of the information received from the interviews with the leaders and the members/participants of the NGOs Farm Africa, FIDE, TCCIA and 4H Tanzania (see information about informants in Appendix 2). The results are analyzed and discussed in the following chapters.

Farm Africa (FA)
We reduce poverty permanently by unleashing African farmers’ abilities to grow their incomes and manage their natural resources sustainably. We work with the farmers… to achieve long-term improvements in their lives (FarmAfrica 2016).

FA is currently running a project in Nou Forest. A few years ago FA started a project together with the villagers with the aim to conserve the forest. The forest is important, amongst other things, for providing water to a big part of Babati. However, it was threatened by grazing cattle, food collecting and trees that were cut down for firewood and logs. There is also the issue of coal sink for the climate.

FA pressed the importance that the villagers owned the ideas, even though the ideas came from somewhere else. To get everybody involved and on board was the key to a sustaining project. To stop people using the forest for their own private good, FA arranged workshops to inform villagers of the importance of managing the forest and to discuss alternative ways of earning an income in the area. The workshops came up with many ideas, but mushroom farming, bee keeping and grass weaving became most successful and popular so FA organized the project around these enterprises. They arranged study visits and seminars to enable the villagers to come up with a best practice and acquire knowledge of how to add value to their products, e.g. make candles out of bee wax. FA then linked the producers to the market to give them proper price for their product.

Now there is a problem that the demand of mushrooms and honey is higher than production. More people want to join the project, but the time of the project has run out. There is room and interest to expand the project, but no money is available (IP4). The project and the
organization is dependent on money from external funders, but the participants still believe that the new enterprises will sustain, even if the support from FA is gone.

The Nou forest project also established a rotational funds based system called Village Community Bank (ViCoBa) in ten of the villages surrounding Nou Forest. The aim was to enable the villagers to save their money somewhere close to home, and from the same place take small loans to increase their business. It became very popular and the number of initiatives fast grew to thirty.

Participatory land management is also a part of the project. FA encourages farmers to conserve their soil and halt erosion by planting trees and adopting terrace farming. The tree seedlings were initially given for free, but after some time it became clear that it gave the trees less value, and people did not care for the trees. To solve the problem FA encouraged some villagers to start a business with tree nurseries. They were trained in groups in basic business keeping and how to grow trees with different properties. This became a win-win solution for entrepreneurs and soil conservation.

Friends in Development (FIDE)

FIDE envisions a poverty free society, which lives in harmony with the environment. (EYD 2015)

FIDE is a local NGO registered in 1992. The organization is based in Babati and operates in Manyara, Arusha, Kilimanjaro, Singida, and Tanga regions. FIDE have a wide variety of projects, depending on where the funds come from. They have one project which encourages people to make their own biogas and use as energy source. They go to village meetings and inform about their project and people can volunteer to join. The people who join are given personal advice from FIDE about how to make the biogas and how to use it. The participants have to have some money on their own to invest. The goal of the project is to reduce firewood to protect forests and improve health conditions.

The Nutrition project works with women who are pregnant or their partner to reduce maternal anemia and childhood stunting by eating nutritious food. Together with community healthcare workers and nurses, FIDE informs groups of 12 (6 males and 6 females) about how to get proper nutrition. They promote breast feeding, vegetable gardening and poultry. This is a 5-year project, entering its final year.

On the border to Tarangire National park, FIDE ha a project in three villages to solve the problem of grazing livestock in the park. They inform the men of a modern way of keeping
livestock, which does not bother the park. The women are encouraged to do handcrafts and poultry. They are trained in groups in different handcrafts and given good hybrid chickens. FIDE also connect them to hotels in Tarangire where they can sell the eggs and handcraft.

A recently launched project promotes supplementation of vitamin A to sunflower oil. FIDE promotes to shop keepers and the community to buy this special oil from the producer. At the moment there is only one producer, but FIDE encourages oil producers to start. To add Vitamin A would help with problems that arise from a lack of vitamin A, such as problems with sight, weak immune system and bad skin quality. They use different information channels such as leaflets, billboards, information kits, clinics, community health workers and markets.

The interviewed participants all had experience of projects that were no longer running. They were however very happy with the approach which was a mixture of theory and practice. Both were participatory approaches, where they discussed best solutions and exchanged ideas in the theoretical part, and used this knowledge in farm field schools where they could practice. IP10 think it could have been sufficient with only practice, but the others like the mixture. All of them are very happy with the training, since it led them to a better practice with bigger harvest and more profit. The extra money has improved their lives notably and they are now able to put their kids in school.

IP8 concluded the interview by insisting that NGOs should be more empowered to help communities help themselves. More funding should go to NGOs.

*Tanzania Chamber of Commerce, Industry and Agriculture (TCCIA)*

TCCIA’s mission is to facilitate Private Sector Development in Tanzania by providing exceptional value to members and business community… in a more professional, resourceful and sustainable manner (TCCIA 2016).

TCCIA offer a variety of services to their members, depending on what the members decide at the AGM and what they get funding for. Their main focus is to improve the situation for business owners. They provide participatory, demand driven group trainings in best practice for farming, record keeping, basic business, tax education and market training. They also offer situation analysis and business consulting for their members. The analysis shows how much a
business keeper have to sell to make a profit. These services are very appreciated amongst members, since it helps them focus on their business and enhance their income.

Other services TCCIA provides is lobbying and advocacy towards government, e.g. Taxpayer Advocacy Service (TAS). TAS is a new instance where business owners can leave complaints about their calculated tax. The tax is based on production and not income, which sometimes would lead to bankruptcy. TCCIA also advertise businesses in different forums and magazines, empower youth and women via title deeds for land which makes it possible for them to take loans, offer company and business registration as an agent of BRELA (Business Registration and Licensing Agency), organize networking between members, provides certificate of origin, which allows exportation, provides a database with business information and connect business with markets

Since TCCIA works with any kind of businesses, only two of the informants were actually farmers. However, the ones who were not farmers had made a bigger profit because of the services provided by TCCIA. The network organized by TCCIA is a forum where members can get advice on how to improve their farming practices (IP9). Group training was a much appreciated approach, since they could exchange ideas and discuss together. The business analysis allows the business owner to get a structure in the business and provides an overview of how much expenditures and profit the business has.

4H Tanzania

We advance the 4H youth development movement to build a world in which youth can learn, grow and work together to become economically independent and responsible adults. (4HTanzania 2016)

4H Tanzania is a youth organization based on voluntary leaders and democratic club meetings. The organization was established in 1976 in Lushoto, but came to Tanga 1986. The majority of the clubs are based in schools, where the teachers (so called “club advisors”) on voluntary basis teach the youth how to grow vegetables or trees, and how to make a profit out of it. Some clubs are out of school and teach e.g. tailoring and carpentry. 4H work with the
motto “learning by doing and earning while learning”. They have a gender policy and it is 50-50 girls and boys as well in member figures as in deciding positions. All the members learn entrepreneurship, how to make their own money and not fall into poverty. Their overall aim is to empower youth to be self-sufficient.

Their enterprise garden project takes place in schools and in the members’ homes. The members decide in club-meetings what they are supposed to grow in the school project. Club advisors show youth the best practice, teaches them to make organic compost and how to mix different crops, vegetables and trees at the school project. The members practice at their home project and sell the vegetables at the market or to their parents and neighbors.

The million trees project is similar to the enterprise garden project. It is based in schools with a democratic club-process and a club advisor who show youth how to grow and take care of trees. They have also established tree nurseries from where they can sell seedlings to earn some money.

The renewable energy project is quite different. It is part of a larger project called Local Capacity Builder with the aim to create opportunities for youth employment. Individuals who want to do something with their lives and show potential are selected to take part in a group training. In the training they learn how to install and repair solar energy and biogas systems. They are then connected to the employment market.

In all their projects 4H use a practical methodology, learning by doing. They have adopted the “Positive Youth Development” approach. It consists of 6 C:s; Competence, Confidence, Character, Connection, Caring and Contribution (Dr Richard Lerner). This approach enables youth to be comfortable in learning and understanding. Youth makes all decisions, at the same time as adults provide them with a best practice. This is necessary since the kids have to little experience to know the best practice, but they are clever enough to think for themselves and make good decisions. 4H used to have another approach, called “Youth adult partnership” which is more of a top-down-approach. They find PYD is better since it empowers youth to make own decisions, which in turn provides them with the self-confidence needed to improve
their lives. Research shows that youth who have been 4H-members have a better chance to succeed in life than non-members.

Some years ago 4H used to have a national 4H-day, where clubs from all over the country gathered and showed their projects. It was also a competition of which club had produced the best results. This was a great motivator both for the members and club advisors, who were showed some appreciation for their voluntary work. Unfortunately, because of lack of funding, this event is no longer possible. There are more youth who want to join 4H, but because of a lack of club advisors, this is not possible. The groups would be too big.

**Sustainable Development Goals**

None of the NGOs were familiar with the new UN goals. The leaders were however able to identify their organizations’ aims and activities with some of the goals. All of them identified with end poverty (SDG1); end hunger, improve nutrition and promote sustainable agriculture (SDG2); and achieve gender equality (SDG5). All but TCCIA identified with forest management (SDG15). FA also identified with coal sink for the climate (SDG13); FIDE with health (SDG3); TCCIA with growth and decent work (SDG8); and 4H with renewable energy (SDG7). The members/participants, however, all have a narrower view and see only their own earnings as sustainable.

**Information and communication technologies (ICTs)**

Mobile phones have become an important tool in communication between NGOs and their members/participants, especially when it comes to organizing different events. They have not yet started using tablets or computers extensively because many of the members/participants
lack access to these technologies. They do, however, see a potential in using tablets, laptops etc. in their extension to show demonstration videos, but this would require funding to provide the members/participants with the relevant technology.
Findings

Extension methods
The extension method used by FA is partly a top-down approach. The fact that FA intervene in how the villages manage the forest and soils, and make them change practice is connected to a top-down approach. In the process that follows it seems important for FA that the individual is involved in decision making and practice, which are characteristics of a people-centered participatory approach. However, the decision might have already been made by the NGO and the donors, and this participation gives that decision legitimacy.

FIDE uses a mixture of extension methods. On the one hand they transfer research-knowledge with a top-down method, using pamphlets, billboards, village meetings etc. In the biogas project they also use one-to-one advice. On the other hand, in previous projects, they used group discussions and practice to empower the farmers to develop and change to a better practice. This is more in line with a participatory method.

TCCIA is based on participation. Since it is a membership based organization, the members have all the power over the organization. The AGM decides what services the organization should provide. This system can risk that a few active and loud members take over the power, but it is a democratic system. The core-service of TCCIA is the business analysis. This is one-to-one advice on how to strengthen individual businesses and enhance income and knowledge of individuals. Often this is combined with group trainings and discussions.

4H has made a conscious choice in adopting the PYD method as their extension method. It is based on participation and decision making by the members, with some influences of top-down transfer of knowledge from the club-advisors. Making decisions and democratic learning at a young age empowers the youth to take control over their lives.

None of the organizations use formal or structured education and training as an extension method. There are no resources or ground for such an approach in their context.

In summary, the NGOs all use a mixture of extension methods. This is in line with what Black (2000) says, that no method is likely to be sufficient by itself – they complement each other.

Holistic approach
FA works to empower groups and individuals to take control over their life, at the same time as they establish financial systems and aims for gender equality. Thereby they seem to have adopted a holistic approach in their agricultural extension. They do not only give advice on how to farm, but how to develop the community in a lasting and participatory way.
FIDEs projects are very varying in character. Some address health- and nutrition-problems and some address improved agricultural practices. The biogas-project is connected to the climate and the Tarangire-project to forest management. All the projects have one thing in common, and that is reduced poverty and an improved life. This wide spectrum of issues addressed is mostly a result of the possibilities and limitations of funding. Though this might be seen as a problem, that FIDE can’t focus on one specific issue, it also results in a holistic view of societal development.

TCCIAs activities is much about strengthening the individual business. Other services they provide, such as networks, market connections and administrative assistance, gives the business owner chances to improve their economy and agricultural practices, which in turn can result in environmental and social winnings.

4H Tanzania’s activities aim firstly to reduce poverty and hunger, but they also result in knowledge about democratic processes, entrepreneurship, and organic agriculture practices. Together these skills empower the youth to take charge of their own life, and really make a change.

The wide spread of issues the NGOs projects address, concerns a variety of SDGs and all three bases of sustainable development: economic, social and environmental. It therefore seems apparent that all four organizations have adopted a more or less holistic approach for their activities. Whether or not this is an active strategy by the NGO is difficult to determine. The difficulties in receiving funding, and the short-term nature of most grants, could explain why the NGOs remain unspecialized. However, their missions and goals seem to be holistic in nature. They aim to improve lives and use different tools to do that. The NGOs holistic approach is therefore probably a result of a mixture of conscious strategy and adaption to the current funding system of which they are dependent.

The results show that the leaders of the NGOs and the participants/members have very different views of sustainability. This relates to the fact that the farmer’s world and possibilities is small and limited, while the SDGs are holistic and address problems all over the world. The NGOs have to have a wider perspective to be able to get funding. The issue of ICTs is also connected to a holistic approach. If the members/participants can’t afford or don’t have access to the required technologies it is not a practical tool to use in extension. When people can come out of poverty and stop worrying about putting food on the table, then ICTs
Is A Holistic Approach Relevant for Non-Governmental Organizations’ Agricultural Extension Strategies?

can really be a useful and potentially successful tool. Until then ICTs might be used when there is money for such technology included in a project.

In summary, the NGOs have adopted a more or less holistic approach for their extension. This is in line with previous research in the field of agricultural extension (Dunn et al. 2000; Allahyari 2009; Hellin 2012).
Conclusions
The aim of the study was to find out what kind of agricultural extension methods the NGOs use, if they work with a holistic approach, and in that case if the holistic approach is a conscious strategy or an adaptation to the funding system. The study shows that a mixture of extension methods is a popular and effective way to go. Participatory group empowerment methods are dominating the extension practice, but both top-down and one-to-one advice methods also play a role. The level of participation varies from actual decision-making where the members have all the power, to planner-centered where the participation is a means for NGOs to reach people with their knowledge.

The NGOs do work with a holistic view, and it seems to be the result of both a conscious strategy and a way to receive funding. To assess what the NGOs are working with provides a useful tool in the work to implement the SDGs, since many of the NGOs already work with similar goals. To use the NGOs for this purpose is a win-win-win solution. The farmers receive advice, help and are empowered to take themselves out of poverty; the NGOs receive funding for their activities; the world works towards a sustainable future. However, it is a problem that the projects generally operate on short-term. This gives the NGOs difficulties to survive and the results of the projects can easily fade. To ensure a sustainable development, the projects have to be more of a long-sighted nature. That is when there is enough time to actually make a difference. This is not in the NGOs hands to change, but in the donors’.

In the beginning of the research-period, it seemed like it was a problem for the study that no organization focuses on one specific issue. Even Farm Africa does not work with only agricultural extension. It is now evident, though, that because of the wide varieties of the projects, there is a more holistic and thereby more sustainable view of development. In the process of creating a sustainable future, a holistic approach is important. To see the community as an interconnected system, where all parts of the system is important for supporting the system as a whole. Enabling people to rise out of poverty needs a holistic approach, and agricultural extension is a useful tool to do it.
Discussion

Big goals for small farmers
The SDGs are holistic goals that urges bold and transformative steps to change the world in a sustainable direction. The 17 goals are unified and undividable and balance the three bases of sustainable development: the economic, social and environmental. For a small scale farmer in a developing country these goals can be difficult to grasp. To be able to put food on the table, provide for the family and educate the children are top priorities. These issues are in fact included in the SDGs, but it can be difficult to take notice of, or care about, the synergistic effects resulting from e.g. starting a mushroom farm instead of harming a forest or enhancing the harvest by conserving the soil. This is why the NGOs and a holistic extension approach play a very important role in the development.

There can, however, arise problems with unspecialized NGOs, if the individual has one specific problem and don’t know where to turn to because the NGOs focus on varying issues. This needs more attention, but this study argues that the NGOs probably have a basic ground, e.g. agriculture or health, but address a wider range of issues which are also important for a sustainable development.
References


Appendix 1 Interview templates

NGOs

Background informant

Name:

Background NGO

Name of NGO:

How many years have the NGO been active in Babati/Tanga?

What kind of projects do your organization run?

How many have participated in your projects?

Extension methods

How do you give support in the different projects? (Participatory group activities, information-meetings, one-to-one, structured training)

- Do you use information and communication technologies (ICTs)?

Which method(s) do you think is most successful?

- Why?

- Different target groups, different methods?

Sustainable development goals

Are you familiar with the Sustainable development goals from the UN?

Can you please rank the goals your projects work the most with?

How do you work with these goals?

Moving on

Can you provide me with a few (5) names/villages who have participated in your projects?

Do you have any questions for me?
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Members/participants

Background informant

Name (anonymous?):
Age:
Sex:
Family:
Education:
Profession:

Contact with NGOs

What kind of project(s) have you participated in with the NGO?

Extension methods

What kind of approach did the NGO use in the project(s) when they offer service? (Participatory group activities, information-meetings, one-to one, structured training)

Did the project(s) result in a changed practice for you?

What kind of support-method(s) are you most happy with?

- Why?

- What do you think of information and communication technologies (ICTs)?

Sustainability

Do you perceive the results of the project(s) is sustainable?

- Why/in what way?

Do you feel your life have improved since you participated in the project(s)?

- In what way?

Do you have any questions for me?
Appendix 2 Informants

Table 1. List of informants

<table>
<thead>
<tr>
<th>Acronym</th>
<th>NGO</th>
<th>Age</th>
<th>Sex</th>
<th>Household</th>
<th>Education</th>
<th>Profession</th>
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<tbody>
<tr>
<td>IP1</td>
<td>FA</td>
<td>44</td>
<td>Male</td>
<td>7</td>
<td>Primary level</td>
<td>Own and run a tree nursery</td>
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<tr>
<td>IP2</td>
<td>FA</td>
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<td>Male</td>
<td>3</td>
<td>Primary level</td>
<td>Extension officer and mushroom farmer</td>
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<tr>
<td>IP3</td>
<td>FA</td>
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<td>Male</td>
<td>8</td>
<td>Primary level</td>
<td>Tailor and bee keeper</td>
</tr>
<tr>
<td>IP4</td>
<td>FA</td>
<td>45</td>
<td>Female</td>
<td>10</td>
<td>Primary level</td>
<td>Mushroom farmer and shop owner</td>
</tr>
<tr>
<td>IP5</td>
<td>TCCIA</td>
<td>25</td>
<td>Male</td>
<td>1</td>
<td>Secondary level</td>
<td>Owner of a boda boda business</td>
</tr>
<tr>
<td>IP6</td>
<td>TCCIA</td>
<td>31</td>
<td>Female</td>
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<td>Secondary level</td>
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<td>IP7</td>
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<td>54</td>
<td>Male</td>
<td>6</td>
<td>College</td>
<td>Crop farmer and processor of sunflower oil</td>
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<tr>
<td>IP8</td>
<td>FIDE</td>
<td>50</td>
<td>Male</td>
<td>5</td>
<td>Primary level</td>
<td>Crop farmer and processor of sunflower oil</td>
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<tr>
<td>IP9</td>
<td>TCCIA</td>
<td>44</td>
<td>Male</td>
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<td>Primary level</td>
<td>Crop farmer and chairman of a sunflower association.</td>
</tr>
<tr>
<td>IP10</td>
<td>FIDE</td>
<td>44</td>
<td>Male</td>
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<td>Primary level</td>
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<tr>
<td>IP11</td>
<td>FIDE</td>
<td>52</td>
<td>Male</td>
<td>8</td>
<td>Primary level</td>
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<tr>
<td>IP12</td>
<td>FIDE</td>
<td>45</td>
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<td>10</td>
<td>Primary level</td>
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<tr>
<td>IP13</td>
<td>4H</td>
<td>30</td>
<td>Male</td>
<td>1</td>
<td>Secondary level</td>
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<tr>
<td>IP14</td>
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<td>6</td>
<td>Secondary level</td>
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<tr>
<td>IP15</td>
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<td>14</td>
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<td>20</td>
<td>Male</td>
<td>12</td>
<td>Secondary level</td>
<td>Goat farmer</td>
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</tbody>
</table>

Table 2. List of interviewed NGO-officials

<table>
<thead>
<tr>
<th>NGO</th>
<th>Name</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Africa</td>
<td>Mabula, Thomas and Kileo</td>
<td>Business development officer, Land planner and Bee keeping expert</td>
</tr>
<tr>
<td>TCCIA</td>
<td>Ramadhan Rashidy</td>
<td>Business development officer</td>
</tr>
<tr>
<td>FIDE</td>
<td>Ibrahim</td>
<td>Field officer, nutritionian</td>
</tr>
<tr>
<td>4H</td>
<td>Bernard Goliama</td>
<td>Finance and administrative officer</td>
</tr>
<tr>
<td>4H</td>
<td>Julieth Makrita</td>
<td>4H Club-advisor and teacher</td>
</tr>
</tbody>
</table>