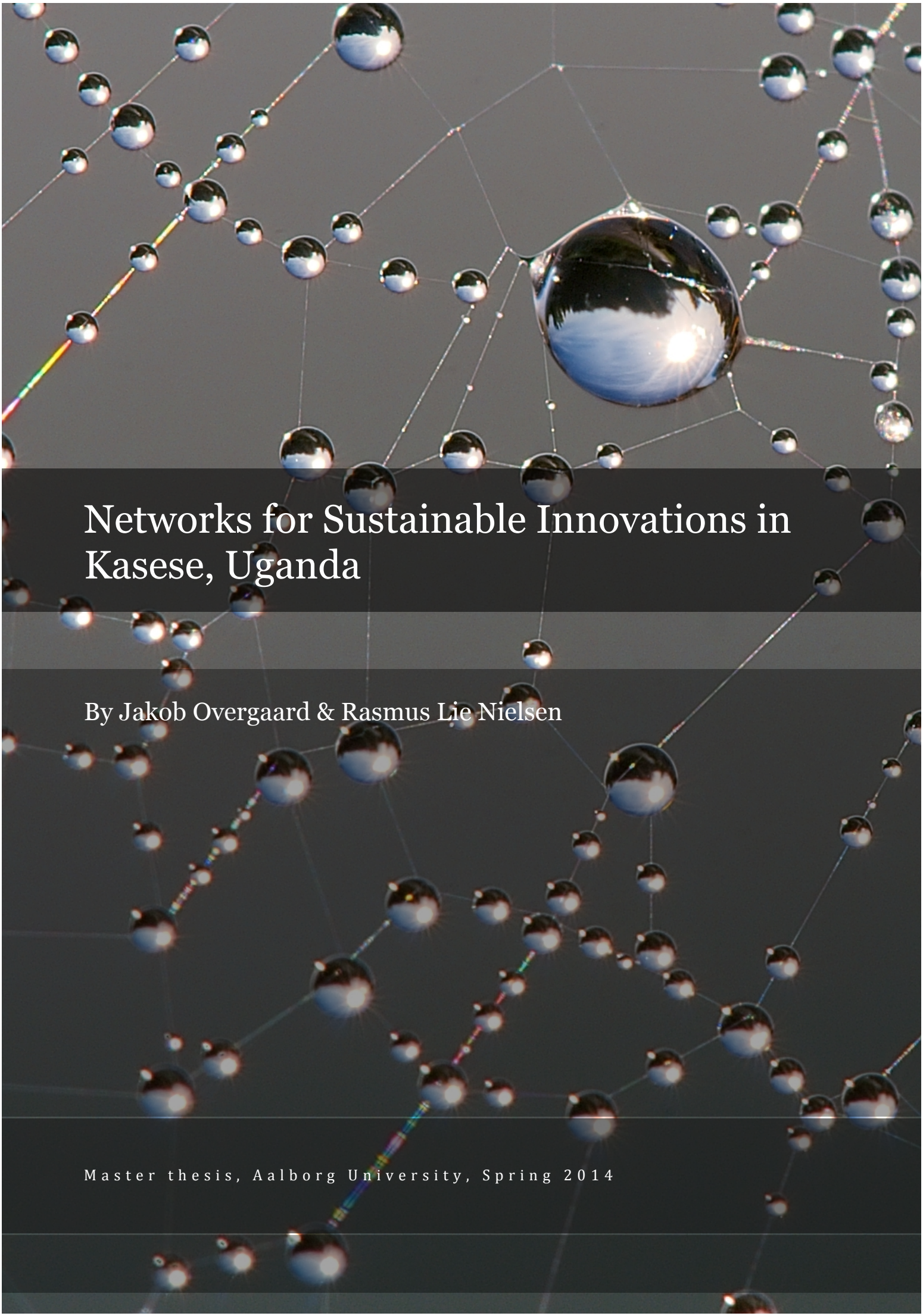

# Networks for Sustainable Innovations in Kasese, Uganda

By Jakob Overgaard & Rasmus Lie Nielsen

Master thesis, Aalborg University, Spring 2014

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**Abstract**
This project is based upon research on how working in networks can contribute to innovative and sustainable solutions in third world countries in order to support sustainable development. Networks are seen as appropriate ways to combine knowledge from civil society, universities, governments and businesses, which are convenient because sustainable innovations are best created by combining various knowledge fields. The research included a field trip to Kasese, Uganda for investigating the network operating in Kasese Clean Energy Champion District Initiative, launched by WWF. The analysis showed that key organizational and social/cultural elements are missing in the network. Among others, the network showed to have challenges regarding network governance, challenges in collaboration and trust. By supporting and strengthening the organizational and social/cultural challenges simultaneously, a basis for interaction can be created and hereby knowledge can be strengthened through a learning process. Acknowledging the fact that networks differ based on local settings in terms of social, cultural and local characteristics, it has been learned that context must be considered before facilitating a network. The people operating in networks are also influencing them and it is therefore important to include locally integrated social entrepreneurs who have ability and willingness to contribute to sustainable development.

# 1 Preface

The following project represent a master thesis conducted by Jakob Overgaard and Rasmus Lie Nielsen on the program Environmental Management and Sustainability Science at Aalborg University. The master thesis was conducted during the period 1st February to 4th June 2014.

Data for this project was collected on a field trip to Uganda in the period 3rd - 24th April 2014. In that regard, our list of people to thank is long. Especially two persons warmly welcomed us and helped us during our stay in Uganda. Without the help from these people this research had not been possible. At first, we will use the opportunity to thank The Mayor of Kasese; Godfrey B. Kabbyanga, who welcomed us and helped us out with practical matters during the whole stay. He also did his best to present us for Ugandan culture and traditions, which we fully enjoyed. Another person we owe big thanks to Baluku Didas, a member of the city council, who helped us out with everything from interviews to guide us on tours.

The Harvard Method is used for references, meaning author and year of publication is included in the text. A detailed list of references can be found at the last pages of the report. On the following page an overview of the abbreviations used can be found.

## 1.1 ABBREVIATIONS

| | |
|---|---|
| **a2i** | access2innovation |
| **AAU** | Aalborg University |
| **AFODE** | Alliance for Development |
| **BoP** | Bottom of the Pyramid |
| **CBO** | Community Based Organization |
| **CEO** | Chief Executive Officer |
| **FURA** | Foundation for Rural and Urban Advancement |
| **FoN** | Friends of Nature |
| **KADDE-Net** | Kasese District Development Network |
| **KCECDI** | Kasese Clean Energy Champion District Initiative |
| **KDLG** | Kasese District Local Government |
| **KMCL** | Kasese Municipal Council |
| **NAO** | Network-Adminstered Organization |
| **NGO** | Non-Governmental Organization |
| **ROI** | Return of Investment |
| **SNV** | Stichting Nederlandse Vrijwilligers (Netherlands Development Organization) |
| **TBL** | Triple Bottom Line |
| **WWF** | World Wide Fund for Nature |

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# 2 Project structure

Chapter 3 is an introduction to the project, which narrows focus from Bottom of the Pyramid-issues to the approach chosen focus on sustainable innovations through networking. Lastly the chapter ends by presenting the case of Kasese Clean Energy Champion District Initiative, which have been the used for carrying out current project.

Chapter 4 presents research design and methodology used to conduct this report.

Chapter 5 introduces a theoretical outset used for understanding background for current project. This part contains an understanding of innovation, sustainability and networks. The chapter will end up presenting an analytical framework to analyse the network in Kasese

Chapter 6 will use the analytical framework to analyse the network in Kasese Clean Energy Champion District Initiative. The analysis will use the interorganizational network model together with innovation, sustainability and collected data.

Chapter 7 discuss key findings in the analysis together with adopted theory. This includes a discussion of organizational challenges identified by investigating the network in Kasese together with the social/cultural challenges that needs improvement.

Chapter 8 summarizes the main recommendations given in the project on basis of the discussion

Chapter 9 presents main conclusions made in the investigation of the network in Kasese. The research question is answered through three sub-questions.

# 3 Introduction

Humanity is facing major challenges such as environmental degradation and a rapid growing world population, which increases the pressure on the global environment and resources. Just after World War II the planet carried two billion people (Hart 2010), today the global population has exceeded 7,2 billion (GeoHive 2014) and furthermore United Nations predicts around 9,6 billion in 2050 (United Nations 2013).

Three billion people lived on less $2,5 per day in 2005 (Shah 2013). Today, more than four billion people are placed in the base of the economic pyramid, earning less than $1500 annually, while people at the top of the pyramid only represent 800 million people (Hart 2010). So far, poverty has largely been handled through grants and aid, which seems to have failed and in many cases not contributed to the desired development in third world countries. Therefore, there seems to be a need for another approach to bring development to these countries.

By introducing the concept “Bottom of the Pyramid” (BoP) in 2002, (Prahalad, Hart 2002) conceptualized a new idea to create development in poor countries. This concept introduces how businesses and technologies, through market-based and entrepreneurial activities, can reduce poverty and generate development for markets placed in the base of the economic pyramid.

According to (Hart 2010) vast and relatively unexplored markets exists in developing countries. These markets can create lucrative opportunities for the private sector, while at the same time serve the worlds poor by producing appropriate affordable technologies, which can improve the quality of their life (Kandachar, Halme 2008).

The World Resources Institute has investigated potentials in the BoP-market. They claim there is a potential of 5 trillion USD, which proves that large business opportunities exists within these markets (World Resources Institute 2007). (Karnani 2007) points at medium- and small-scale companies as the ones, who especially can benefit, while serving the poor.

There have been examples, where companies and technologies have served people in the base of the economic pyramid. For example, in some developing countries, where the cellular technology was introduced before landline telephones made it possible skip the phase of big, expensive infrastructure for landline telephones (Hart 2010).

However, all these examples have not necessarily considered environmental issues, therefore we focus at, what (London, Hart 2010) presents as taking “The Green Leap”. These two concepts with clean technologies on one side, and business opportunities in developing countries on the other, have historically been treated separately (London, Hart 2010). Green technologies have been developed to reduce environmental impacts in the developed “world”, while poverty reduction efforts has to large extend been driven by NGO’s, through aid and development assistance to developing countries. Therefore, the green leap focuses

on combining these two “worlds” and use the knowledge and technologies to develop sustainable solutions that will support development for the poor and at the same time make economic benefit for the private sector (Hart 2010).

The aim of taking the green leap is at the same time to avoid that BoP societies are using unsustainable technologies and fossil fuels for energy production (Hart 2010). An example could be instead of building expensive infrastructure for energy distribution from central and polluting power plants, it is possible to take the green leap and introduce green energy solutions, such as solar micro grids or biogas solutions and thereby decentralize the energy supply. In development countries, it can to be important to skip these expensive investments in big infrastructures from centralised plants and instead introduce a shift from unsustainable solutions, such as kerosene lamps, to sustainable and innovative energy technologies, like small solar lamps for households. This approach is suitable for almost any economical starting point, as it legitimizes to start small and expand in line with the development unlike centralized plants as these have big upfront costs.

The upper half of figure 1 seeks to illustrate the green leap approach of entering the BoP-market, which we wish to look deeper into in this project.

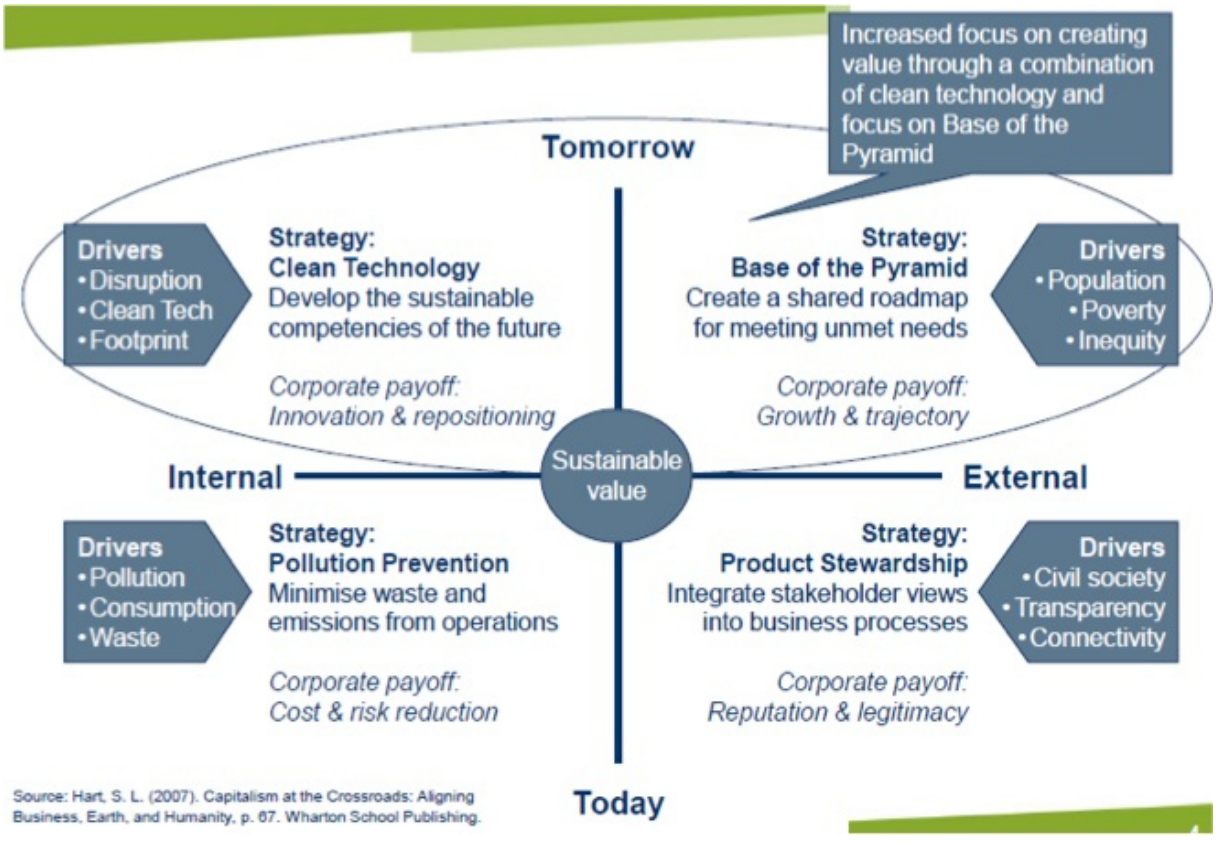


**Figure 1: Shows the possibility of combining poverty reduction, environmental friendly technologies as a business opportunity to create development in both the bottom and the top of the economical pyramid (Hart 2010).**

The approach breaks with the tendency that green technologies are only for the rich and that environment is something to be dealt with after reaching a certain level of economic development. Green technologies can be implemented in both small- and large scale and therefore it should benefit the people in the base of the economic pyramid as well.

To summarize, the green leap approach is the part of the BoP-paradigm, which this project will be focusing on, as energy needs, poverty and environmental degradation are some of the World's largest challenges to date. These challenges can be linked with economic development by taking the green leap. The green leap considers the three dimensions of sustainability, which will be explained and used later in this report. Green leap differ from other approaches in the BoP-concept because of the environmental focus. Therefore, this focus is chosen well knowing that it is possible to do business and serving the poor in several other ways. For example could the poor be assisted through trade combined with aid, business and development assistance but approaches like this will not be investigated further.

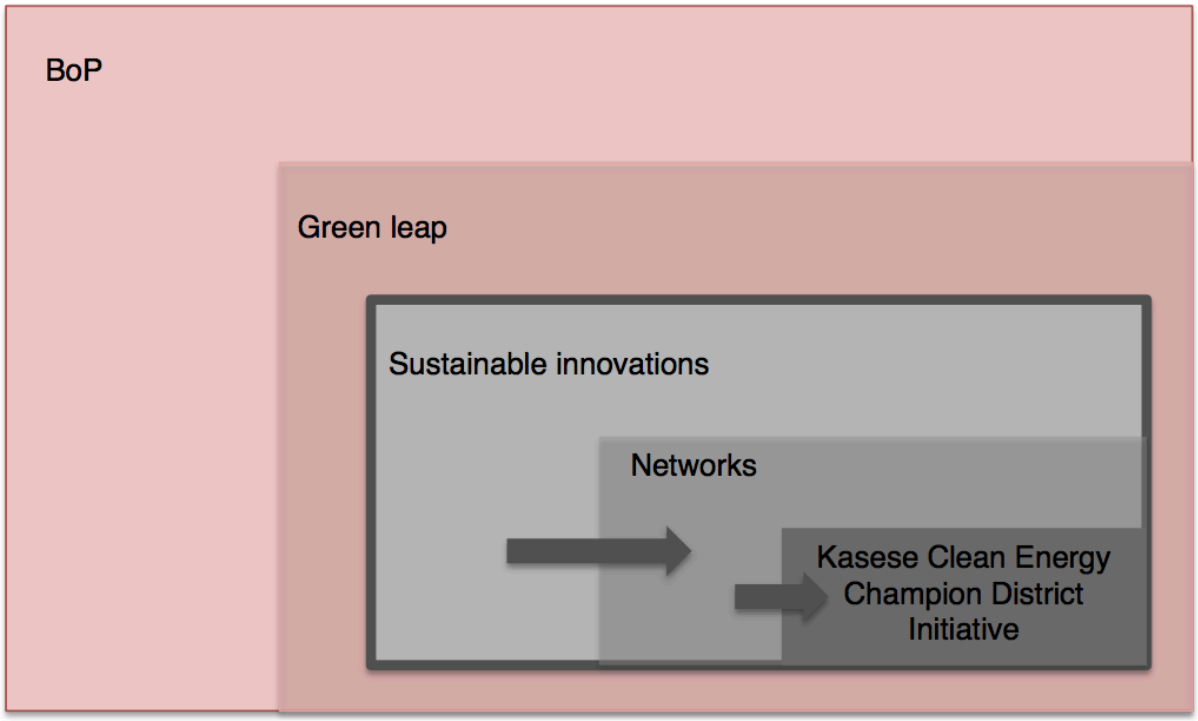


**Figure 2: Illustrates the focus of current project. Starting from overall frame of the BoP-literature to focus on the green leap. In order to take the green leap sustainable innovations is necessary to suit the solutions for the BoP-context. Networks are one way to secure that innovations are implemented sustainably. Kasese Clean Energy Champion District forms an example of such a network, which therefore is chosen as the case of the project. Own illustration.**

A wide range of elements is relevant to investigate to accomplish this, such as innovations, business models, sustainability, product technologies etc.

However, even though several elements within the BoP-strategy could be interesting to investigate it is chosen to look at sustainable innovations in current project, as figure 2

illustrates. It is argued by (Hart 2010) that actors must be innovative in order to exploit the vast and unexplored market; both in terms of the technologies that is to be implemented in the communities, but also in terms of the strategies companies use to penetrate the market. In other words, the products and solution must be implemented in innovative ways in order to fit the completely different socio-cultural setting that development countries provide. According to (Leonard 1995) innovation occurs at the boundaries between mind-sets:

> *"Innovation occurs at the boundaries between mind sets, not within the provincial territory of one knowledge and skill base"* (Leonard 1995).

This illustrates the importance of making interactions between people with different competences and skills in order to create innovative solutions. However, the term of innovation include many aspects such as product innovation, process innovation, design innovation etc. This project does not focus on one specific type of innovation but rather sees innovation as a necessity to approach the context of development countries, as technologies from the western world can not just be dumped but must be proper implemented in communities. Innovation is needed to do this, as it is not about dividing "bread" into pieces that the poor can afford. It is about being innovative and creating solutions, which trigger development. (Berkhout, van der Duin 2006) argue:

> *"Innovation is more than just a technical invention: Economic, social and cultural aspects are often decisive. It is the symbiosis of these components that will determine what is a true innovation."* (Berkhout, van der Duin 2006, p. 1)

According to this statement, sustainable innovations only become possible, when combining different dimensions within the society. Therefore, networks can be acknowledged as way to create sustainable innovations.

Furthermore, it is stated in (NBS, Network for Business Sustainability 2013), that networks are essential for achieving sustainable development. Sustainable solutions cannot be created without partnerships, because it is impossible for one business or organization to have the knowledge and competences needed to fulfil all dimensions of sustainability (NBS, Network for Business Sustainability 2013).

Even though other types of partnerships exist such as strategic alliances and consortiums a network approach seems most suitable for doing business in the base of the economic pyramid (Ravn 2012). Strategic alliances are long-term agreements concerning at least two individual firms and are related to their resources. The idea is that by combining their resources they stand stronger in the market but without a total merger of the firms (Shenkar, Reuer 2005). A consortium is likewise consisting of two or more partners (companies, individuals or governments), which work together in order to achieve a chosen objective. The partners are only responsible to the other partners in the consortium regarding the contents in the consortium's contract (Investopedia 2014).

However, the network approach is more appropriate, because of the assumption that collaboration between the end-users, NGO's, local companies, universities local governments is necessary in order to get the needed insight to open opportunities for markets in development countries (Ravn 2012).

To sum up, networks are seen as a convenient way to create sustainable innovations and solutions, suited for people at the base of the economic pyramid. However, there seems to be limited research on this topic. Therefore, we see this gap in the BoP-literature, as a relevant topic for some contributing research. We seek to investigate networks, which allow economic, environmental, social and cultural aspect to overlap in order to create sustainable innovation and development.

As an example of a network operating in the BoP-market, current project takes point of departure in the Kasese Clean Energy Champion District Initiative, which will be described further below

### 3.1 Kasese Clean Energy Champion District Initiative

The concept of Kasese Clean Energy Champion District Initiative and its network are created by WWF and includes different stakeholders such as central and local government departments, NGO's[1], CBO's[2], researches, non-governmental- and international partners such as the Danish network organization access2innovation (a2i) (Hårklau, Reinvang 2013). The network of the initiative can be seen as two individual networks. A main Ugandan network facilitated by WWF and a Danish network facilitated by a2i, which are linked together.

A2i seeks to link competences from Danish companies, scientists, NGOs and local governments through a network approach, with the intention of creating innovative, appropriate solutions for use in humanitarian and development aid, when at the same time creating a platform for Danish companies to make use of the relatively unexplored, but vast market in third world countries. Behind the initiative lies the assumption, that if company's technologies and knowledge are linked with the universities state-of-the-art insight in methods, innovative and appropriate solutions can be developed in close collaboration with the local communities through networks (access2innovation 2014).

A2i and their network-approach have formed the project groups' initially curiosity and inspiration on how networking can be used to access the BoP-market successfully. The Kasese Clean Energy Champion District Initiative provides a sufficient platform and will therefore serve as basis for research in current project.

[1] NGO: Non-Governmental Organization, voluntary, private group of organizations or individuals that normally works independently of government and are non-profit and seeks to advocate a public policy or provide services (Encyclopædia Britannica 2014).

[2] CBO: Community Based Organization, private or public non-profit, which is representative of the community or at least a significant part of this and is engaged in meeting, environmental, human, educational or safety needs in the community (National Network of Libraries of Medicine 2007).

Kasese District can, like the rest of Uganda, be defined as being a part of the BoP-market (CIA 2013). Here, appropriate solutions are sought launched in order to contribute to development. The reason for the initiative was that the population in Kasese district has limited access to energy (Seleverio 2012). This is a serious matter, as the methods used for lightning and cooking are very expensive and can cause serious damages to health as a result of indoor-pollution. Furthermore, these methods cause serious damages to the environment because of emissions and deforestation.

97% of the population uses the three-stone-method for cooking, with firewood or charcoal as fuel, which is very inefficient, expensive and polluting. For lightning, the Kaseseians uses a small lamp filled with kerosene, which is a leftover product from the production of gasoline. This is likewise very expensive and polluting, and provides very little amount of light. And because of heavy smoke and toxic gasses, it is estimated that lamps like these kill 1.6 million people on a global scale every year (Augustine 2013). Therefore, the main focuses of the initiative are to replace these traditional ways of cooking and lighting with more sustainable and innovative solutions such as solar-driven lamps and energy efficient cook-stoves. This, to support the goal of making a replicable model, which is climate resilient and efficiently can provide renewable energy resources to meet all domestic, social and productive energy needs for human development in Kasese (WWF 2012).

With Kasese Clean Energy Champion District Initiative as a case, it will be attempted to investigate how networks can be used to bring in sustainable innovations as alternatives to inefficient methods. Furthermore, the possibilities and challenges for such a network-approach to contribute to poverty reduction and sustainable development in the base of the economic pyramid will be investigated. On the basis of this and the inherent introduction the initiating research question of current project is formulated:

> *Can a network such as Kasese Clean Energy Champion District Initiative create sustainable innovations in a BoP-context?*

In the following chapter the methods used for the theoretical outset and the investigation of the network in Kasese Clean Energy Champion District Initiative will be explained.

# 4 Research design and methodology

This chapter will explain the research design and the chosen methods for current project. This includes presenting of scientific inference, how data was gathered and how it has affected the reliability and validity of the project.

## 4.1 Scientific Inference: Abductive approach

Current project is problem-based work where the process has been abductive, which include an interactive work process that goes forth and back through the project progress. This abductive approach differs from other approaches such as inductive and deductive approaches, as inductive methods seek to generalize and conclude from observations and thereby build theories on the observations. In deduction, the approach is the opposite, as the laws and theory is used to make the conclusion.

Abduction, on the other hand, is built on own hypotheses that are verified through the whole process. By using this approach, we were allowed to come up with interpretations and solutions that may contribute to new knowledge. Some of the characteristics from induction also count in abduction, as knowledge is gained through observations.

To sum up, abduction allows expanding to new concepts and moreover ensures reflection throughout the whole working process (Bryman 2008). This approach turned out to be very beneficial for current project, as our presumptions about the networks in Kasese before the field trip changed when we got there. Problems existing in the networks became visible during the first interviews, why it became necessary to change analytical framework, as these problems differed from the presumptions existing before the field trip. In other words, the abductive approach allowed us to use the theory to make a hypothesis, test it in Kasese empirically and then again return to the theory and shape the frame for the project. This is a great advantage of an abductive approach, as the data you think you will get might not be the ones you are actually able to collect.

## 4.2 Data collection

In data collection two types of data exist: primary and secondary data. These data can either be qualitative or quantitative. Quantitative data is about proportions, quantities and numbers, which typically are collected through questionnaires, statistical research etc. With this type of data problems can become more generally formulated, which thereby affects the conclusions to be more general (Rienecker, Jørgensen 2012).
Qualitative data is typically not about numbers but based on observations, interviews etc. (Rienecker, Jørgensen 2012). When data collection is done, researchers typically have to consider the two data collection approaches separately, even though both can be used within the same research (Andersen 2008).

In current project, a qualitative method approach is used for data collection in order to answer the research question, as all data collected is in the form of semi-structured

interviews. This approach was chosen because of its convenience in getting information about networks in Kasese Clean Energy Champion District Initiative by interviewing different actors in the network.

### 4.3 Literature review

A literature review is a logical review of existing available literature for the topic. Throughout the review ideas occur, which makes it possible to focus the project in the desired direction (Rienecker, Jørgensen 2012). In order to obtain knowledge about different aspects of the project field literature review was used. Therefore, these gaps were attempted closed by similar literature about networking, innovation, sustainability and the links between these terms. Furthermore, reports and documents already existing about Kasese Clean Energy Champion District Initiative were used. This includes an assessment of the initiative made by (Hårklau, Reinvang 2013) for WWF.

However, literature of different types was applied in the study including articles, books and reports. Literature for this study is found using several sites, which include the Internet and databases. For instance, some of the literature was found using the library of Aalborg University's database, as this database makes it possible to get articles from numerous of approved databases. While using Internet and databases appropriate search topics were used in order to ensure the relevance of the literature found.

Literature used for this project was found sufficient, well knowing that other literature could be used to answer the research question. In this way, the interest of the authors is reflected in the selection of literature.

### 4.4 Semi-structured interviews

Interviewing is a qualitative method (Bryman 2012), which was used for data collection in this project. It was decided to make semi-structured interviews, because the answer cannot be found in a theory alone but must be supplemented with inputs from reality. Therefore, switching between theory and reality in order to achieve a more accurate answer is convenient and matches the abductive approach of this project. Different relevant actors in the network operating in Kasese Clean Energy Champion District Initiative were interviewed in Uganda. The interviewees were chosen because of their role in the network.

Comprehensive questions were asked during the semi-structured interviews in order ensure that the question is answered. Using interviewing as a method is flexible because it allows the conversation to follow the interviewees' direction, which is positive as it will contribute with aspects of the topic that the interviewed person find relevant and interesting. Moreover, it is in this way possible for the answer to be more detailed and may even include information that was not expected prior to the interview (Bryman 2012). Interviewing is basically about getting understandings about topics of the everyday life from the point-of-view of the respondent (Kvale 2009).

During our time spent in Kasese and Kampala, Uganda, we conducted several interviews to create a comprehensive picture of the Kasese Clean Energy Champion District Initiative. The interviewed persons listed in table 1 include local government officials, local CBOs and stakeholders, businesses, employees of WWF and citizens.

As mentioned, the initiative was originally initiated by WWF and it was therefore necessary to conduct interviews with people involved in the initial stages. Therefore we arranged an interview with Vian Musika, who is leading the department of WWF in Kasese district. Morever, Job Mutyaba, a former WWF-employee and now SNV-employee, who also had great insight in the early stages of the initiative was interviewed.

The Department of Natural Resources at Kasese District Local Government is now formally the ones leading the initiative. Here, we interviewed Joseph Katswera, who are the head of department, and also Kooli Augustine who is the Environmental Officer in the department.

Kasese Municipal Council is also a big stakeholder in the initiative, where the Mayor Godfrey B. Kabbyanga is spearheading many of the activities in the initiative, and therefore naturally a man we had to interview. Also the Deputy Town Clerk, Mukobi Seleverio, who is also the Environmental Officer is very central on the municipal level and therefore has beneficial knowledge about the initiative. Both the Mayor and the Deputy Town Clerk visited Denmark in September 2013 in connection with the signing of an MoU between Aalborg University, Danish municipalities and a2i. Here, we both got the opportunity to meet the Mayor and the Deputy Town Clerk for the first time. It was a great advantage to know these persons on beforehand.

In Kasese a lot of local CBOs are working to do their part of the initiative and therefore some of these have been interviewed as well. We were advised to talk to Reuben K. Mbauta who is the CEO of FURA in Kasese; Charles, the CEO of AFODE in Kasese and Paul, CEO for Friends of Nature in Kasese District. The interviewed CBOs are among the most important COBs in the initiative.

Another important stakeholder on the local level is David Bradford Mguru, who is the leader of a network operating in Kasese called the Kasese District Development Network (KADDE-net), which is a network organization of most local CBOs working in Kasese District.

On the business-level we interviewed Rose Kato, who is the CEO of Barefoot Power, Uganda in Kasese. Barefoot was identified as the biggest supplier of solar products in Kasese District why it was chosen to interact with them.

It was also convenient to talk to citizens of Kasese District to have their take on some of the initiatives being implemented in line with the Kasese Clean Energy Champion District initiative. The selected citizens were locals in the village of Kayanya, where System Teknik have put up a solar micro grid. Here the project group spoke to the leader of the fishermen's

association, the technician who runs the solar grid when System Teknik is not present and also some villagers who have been connected to the grid.

**Table 1: Interviews held for current project.**

| Interviewee | Occupation | Location | Date |
|---|---|---|---|
| **Reuben K. Mbauta** | CEO at FURA, Kasese | Kilembe Quarters, Kasese | 9th of April 2014 |
| **David Bradford Mguru** | Leader of KADDE-net | Virina Gardens, Kasese | 10th of April 2014 |
| **Charles Masumbuku** | CEO at AFODE, Kasese | Nyawamba Division, Kasese | 14th of April 2014 |
| **Joseph Katswera** | Head of Natural Resources, Kasese District Local Government | Kasese District Headquarters, Kasese | 15th of April 2014 |
| **Kooli Augustine** | Environmental Officer, Kasese District Local Government | Kasese District Headquarters, Kasese | 15th of April 2014 |
| **Vian Musika** | Employee at WWF Uganda, Kasese Division | Virina Gardens, Kasese | 15th of April 2014 |
| **Paul Baluku** | CEO at Friends of Nature, Kasese | Nyawamba Division, Kasese, | 16th of April 2014 |
| **Mukobi Seleverio** | Deputy Town Clerk, Kasese Municipal Council | Kasese Municipal Council Headquarters | 16th of April 2014 |
| **Godfrey B. Kabbyanga** | Mayor of Kasese Municipal Council | Kasese Municipal Council Headquarters | 16th of April 2014 |
| **Users** | Users of solar micro grid | Kayanja, Kasese District | 17th of April 2014 |
| **Local technician** | Local technician of solar micro grid | Kayanja, Kasese District | 17th of April 2014 |
| **Rose Kato** | Barefoot | Café Bravo, Kampala City center | 21st of April 2014 |
| **Job Mutyaba** | SNV. Former WWF Uganda | Café Bravo, Kampala City center | 22nd of April 2014 |

Appropriate interview guides were made prior to all conducted interview in order to ensure the relevance of knowledge achieved during the interview. However, these interview guides were rather used as “checklists”, as the interviews were made as semi-structured interviews. The interview guides both contained general and specific questions. All questions were asked for the purpose of answering the sub-questions of the research question. However, in some interviews it was not possible to get the desired information, why some interviews were changed in the direction of the interviewee and therefore provided unexpected but yet useful information. This means that some of the elements the analysis concerns might be more

superficially described and analysed, as a more deep analysis would require more data of the elements. All the interviews have been recorded and transcribed and available on the disc attached.

However, a higher number of interviews could have benefitted the project further in case of a longer stay in Uganda and an extended project period. For instance, users of solar lamps and cook stoves could have been interviewed in order to gain a better insight in how well they are educated in the solutions. Moreover, more inputs on which problems they have experienced and how they have been involved in the initiative could have been useful for the project. Furthermore, interviews with political departments on national level could also have contributed with useful knowledge on how planning issues within development and green energy are dealt with in Uganda and also issues regarding replication of the initiative could have been interesting to investigate.

In Denmark it had been relevant for the outcome of the project to interview a2i, System Teknik and WWF Denmark, as these are important actors in the initiative. Due to lack of time to conduct interviews, this has not been done. However, it was decided that we already got enough insight in a2i work and initiatives, as one of the authors has been involved in connection with his internship. In case of expanded project period interviews with a2i, System Teknik and WWF Denmark should have been conducted. In case of future contributions to this project it is recommended to make interviews missing actors mentioned above.

### 4.5 Being involved

We stayed in Kasese and Kampala for approximately three weeks as participant observers. During the visit we had close interaction with members of the municipal council in Kasese. The relations to these members were both of informal and professional. (Bryman 2008) describes participant observation as:

> *"Research in which the researcher immerses him- or herself in a social setting for an extended period of time, observing behavior, listening to what is said in conversations both between others and with the fieldworker, and asking questions. Participant observation usually includes interviewing key informants and studying documents and as such is difficult to distinguish from ethnography."* (Bryman 2008).

We have gained a broad understanding of the social realty in the settings where the research took place. During our stay in Uganda we interacted with both relatively educated people from the municipal council, Kasese District Local Government, NGO's and CBO's to people of low social standings in poor rural areas.

In order to be respected and address people from different backgrounds it is convenient to learn the local language (Bryman 2008). We therefore made an effort to learn some of the common greetings in the local language Lhukonzo. This showed out to be worth the efforts,

as the reactions were smiles and laughs and it clearly made a very good impression. Clearly, the spoken language is not enough in order to be fully accepted in the different settings in Uganda. We also learned the importance of adapting the local way of dressing and acting, when addressing and approaching people.

It can even be argued that we were more involved in the local settings, where the research took place, than a participant observer would be. One of the researchers has stayed in Kasese before for six weeks during his internship in the fall 2013 and therefore already had relations and connections in Kasese and knew the area well, which was a great advantage. During his internship he was conducting research about energy planning in Kasese.

The other researcher has stayed three months in Zanzibar and Mainland Tanzania during his internship in the fall 2013. During this period he stayed on his own in a house on Zanzibar, while conducting research on sustainable livelihoods in the coastal areas. Therefore, he has obtained great experience on how to live, interact, dress and travel in African countries as well as handle everyday problems that occur, when living and function in a local neighbourhood in Africa.

Our experiences must be seen as a big advantage for the outcome of the project. By already having learned about culture we avoided problems, which would occur to most first-time travellers in Africa. As mistakes in dressing and acting etc. already were experienced and lessons have been learned by our earlier travels.

We made close friends and relations in Kasese and were invited to different events such as a wedding (figure 3), a few Roteract meetings etc. This of cause also built up trust in the people of Kasese. By showing our willingness to spend time with the locals and participate in daily life activities on the same conditions as the local people made the research process much easier. Becoming friends with the citizens, giving out a beer or similar, makes people want to help you with almost everything, which can be very beneficial.

**Figure 3: The project group attending local wedding in Bwera, Kasese District (Own photo).**

However, our close relations to the local society might also be reflected in the outcome of this project. The interviewees might have given out different kind of information to us than if other researchers with no relations to the local society had made the same research. Meaning, that it is possible that some interviewees might reply in order to please and help us and not as objectively as they would have done to researchers with no relations. However, we still argue that being involved in the local society has contributed to a more comprehensive and detailed data collection, even though the data might be affected. That said, it would decrease the reliability and validity of the data. Reliability and validity will be explained in the following.

### 4.6 Reliability and validity of the current project

Reliability and validity need attention when during research. Reliability concerns the consistency and credibility of results. For instance, if a number of researchers in different places and time, using the same methods, reach the same results, the reliability is high. For this to be possible the research must be probably planned, the measurements must be made accurate and the coincidence must be eliminated in the best way possible (Kvale 2009).

Validity concerns the strength, accuracy and truth of a statement that is obtained by making continuously control of the quality throughout the entire working process instead of doing all control in the end of the process (Kvale 2009). Consideration must also made in order to evaluate if the methods and the interviewed persons are right. Furthermore, it must be considered if questions asked are contributing to answer the research question (Riisgaard 2012).

All the interviewees were chosen with their relevance to the research question in mind and the questions asked were evaluated in regard to their accuracy in order to get the required outcome, which makes validity rise. Using interview guides in all the conducted interviews helped ensuring the reliability of the project. However, can be argued that the reliability of the project could be higher, as it will be difficult for other researchers to obtain the same results if during the same research. This is due to our close relation to the local society and people from different societal standings.

During some of the interviews the project group got the impression that some interviewees sometimes were afraid to say something wrong that could affect them negatively on a personal level. Furthermore, some seemed to be afraid of losing status and thereby tried to hide that they had lack of knowledge within some topics. This may affect the outcomes if the interviewees are changing their answers because of these circumstances.

The research design and methodology were explained above and will create basis for creating the theoretical outset, which will be presented in the following chapter.

# 5 Theoretical outset

On the basis of the problem field explained in the introduction, this chapter seeks to combine different theoretical fields in order to uncover and close the gap identified in the BoP-literature regarding a proper network approach. This will result in an appropriate analytical framework for analysing the network of Kasese Clean Energy Champion District Initiative. This will be done using theoretical literature in order to unfold our understanding of the three elements: Innovation, sustainability and networks, which are seen as vital when providing solutions for sustainable development in the BoP-market. We know that several other fields could be relevant to investigate for contributing to the BoP-literature but it is chosen to look deeper into the three elements mentioned above. Finally in this chapter the main research question of the project will be created on behalf of the theoretical outset.

## 5.1 Understanding innovation

To be innovative should be an essential part of a companies business strategy and is often associated with survival and growth (Tidd, Bessant & Pavitt 2005). Innovation is defined in (Tidd, Bessant & Pavitt 2005) as being:

> *"A process of turning opportunities into new ideas, and afterwards converting the idea into practice."*

In current project innovation will both be seen as the ability for a network to create new solutions that can be suited for a given environment, but just as much, it can be the innovative ideas behind a business strategy that can help a company or organization to penetrate the BoP-market. This arises from the statement by (Berkhout, van der Duin 2006) that innovation is far more than just technical improvement:

> *"Innovation is more than just a technical invention: Economic, social and cultural aspects are often decisive. It is the symbiosis of these components that will determine what is a true innovation."* (Berkhout, van der Duin 2006, p. 1)

In this section radical and incremental innovation will be described. Afterwards different understandings of innovation will follow together with an argumentation of why it can differ according to the context where it is pursued.

### 5.1.1 Incremental and radical innovation

Current project will focus on two types of innovations: Incremental and radical innovation. Incremental innovation can be seen as the knowledge and practice embedded in organizations, utilized by configurations of existing products, business plans and management, which thereby contributes to continuously improvement. Incremental innovation is based on existing knowledge, supporting competence, processes and structures in the organization (Hargadon 2002).

Radical innovation has a focus on the ability to develop new configurations of products, markets, strategies, technologies etc. It involves a re-thinking and re-development of existing products, services etc. Radical innovation can be seen as a linkage between existing incremental innovations (Hargadon 2002). Although radical innovation holds great potential, it can be linked with certain challenges, as it is hard to break out of the routines because of the uncertainties linked with approaching new markets.

This said, solutions aimed at the markets in base of the economic pyramid calls for radical innovation as there is a need for re-thinking and re-developing existing products and make them fit the given context in the area where it is sought integrated. Some of the products or solutions needed in developing countries might already exist to some extent but needs to be modified in a sudden way that is it appropriate for the local settings. The technologies that are attempted sold in the BoP-market are often incremental innovations, as the technologies often have existed for several years. However, the different context and way of life in Kasese calls for radical innovation within knowledge connection and network, as the incremental innovations need radical, comprehensive approaches because innovation is not just technical.

This said, it will not be investigated in depth whether the innovations in Kasese Clean Energy Champion District Initiative are incremental or radical. The two types of innovation is considered when investigating solutions in Kasese. In the following two different approached to understand the innovation process is described.

### 5.1.2 A rational understanding of innovation

A way of looking at innovation from a business perspective can be illustrated in figure 4. Innovation is seen as a linear process following a timeline and consisting of three steps: Search, select and implementation.

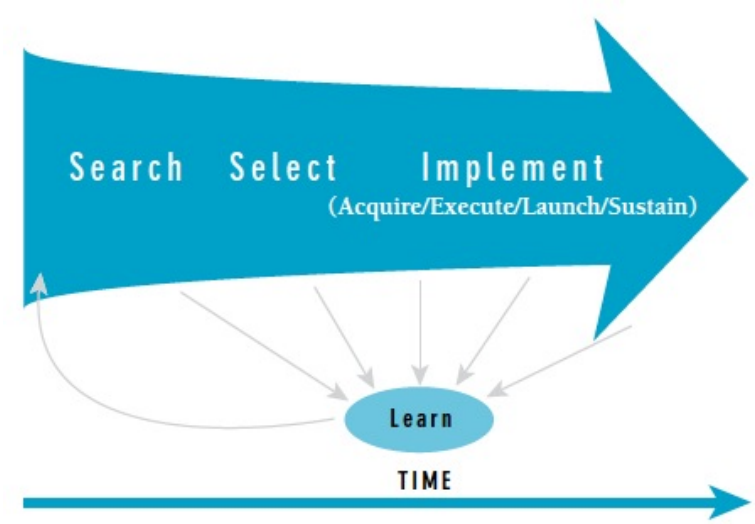


**Figure 4: A linear understanding of innovation (Tidd, Bessant & Pavitt 2005).**

In the illustration, *Searching* is seen as a process where the organisation is looking for relevant signals, threats and opportunities for development from the surrounding environment. After this, a *selection* is done, based on a decision of how the organization can react to the signals identified. The implementation phase consist of several steps describing the way of converting an idea into practice and get it on the market (Tidd, Bessant & Pavitt 2005).

The arrow represents a rational, stepwise approach to innovation. In reality the process might not always be linear, which is also somewhat illustrated adding the learning-perspective. Based on the context of the situation and environment where innovation is pursued, the arrow might evolve and look differently for every time a new lesson is learned.

Therefore, we are sceptic about a rational way of viewing innovation as a straight arrow, although it is agreed that the progress follows a timeline and learning is achieved in every single step the organization or company takes. It has been learned that the context in Kasese differ very much from the environments in which Danish companies normally operate. Assumptions made by companies on beforehand may change radically when coming to Kasese and there will therefore be a need to focus on a more dynamic innovation process, which are explained below.

### 5.1.3 A dynamic understanding of innovation

(Berkhout, van der Duin 2006) is likewise arguing that the linear innovation models are not sufficient for creating sustainability because it has certain limitations. For example, it is not giving insights in the dynamic properties of the innovation process, undermining the social and behavioural science and the complex interactions between new technological capabilities and emerging markets.

Because everything around us is changing (Berkhout, van der Duin 2006) argues, that the innovation process needs to change as well. Therefore he presents an approach both considering the external and internal learning aspects in the innovation process. This includes relationships, where users, partnerships, competitors and suppliers are included in the dynamic innovation process.

According to (Hargadon 2002) the best way to develop innovative solutions is to interrogate with other professionalisms and see the product or service from a new point of view. By introducing known technologies in new environments where it is not known, new combinations and products can be created (Hargadon 2002). When such connections are made, existing ideas often appear new and creative as they change form, combining with other ideas to meet the needs of different users. (Selsky, Parker 2005) also argue that:

> *"When actors from different sectors focus on the same issue, they are likely to think about it differently, and to be motivated by different goals, and to use different approaches"* (Selsky, Parker 2005, p. 851).

We acknowledge a dynamic learning approach to innovation as an interaction between several different stakeholders. Though it is recognized that all doors to the different stakeholders may not be open at the same time and not all stakeholders might be willing to share knowledge and experience with the same generosity as will be explained in the analysis. This approach is closer to the view of innovation in this project. Among others, the acknowledgement that *"Users play an increasing role in making product innovation successful"* (Berkhout, van der Duin 2006) is recognized and interesting for a project carried out in the context of Kasese.

As mentioned, (Berkhout, van der Duin 2006) highlights the absence of the dynamic properties in the innovation process such as social and behavioural science and the complex interactions between new technological capabilities and emerging markets. Figure 5 is showing interactions between these sectors presented by a circle of change. The upper part is showing the "hard" technical world and the lower parts illustrate the dynamic interactions in the "soft" behavioural world.

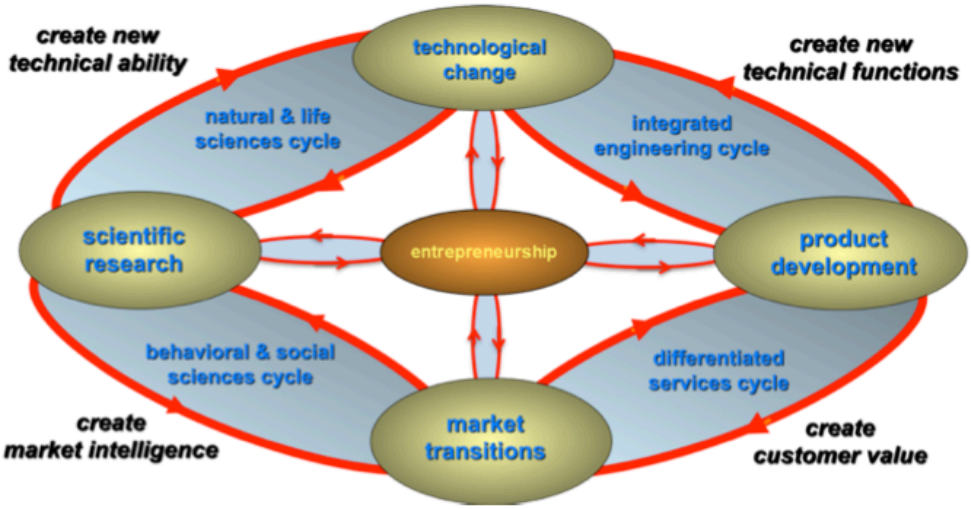


**Figure 5: A dynamic innovation process (Berkhout, van der Duin 2006).**

In an ever-changing world, innovating processes need to change as well and consider the dynamics between different "worlds". For innovation to occur the hard world of technological change must be combined with the soft world of changing needs and concerns, to achieve a holistic system.

As has been described in current section we pursue radical innovation to be able to create solutions fitted for the conditions in Kasese. This includes re-thinking and re-developing products and solutions that might already to some extent exist in the western worlds, but needs to be adjusted to fit the given situation.

According to (Tidd, Bessant & Pavitt 2005) innovation can be seen as a rational process following a timeline. We seek to extend the innovation approach to a more holistic view that includes the dynamic properties that exists in an innovation process as described above.

(Berkhout, van der Duin 2006) argues that the “soft”, social and behavioural “world”, has been neglected in earlier innovation models and therefore he includes this in his view on sustainability. Including the “soft” world of social and behavioural science is very central in this project, where the context of Kasese is not to be undermined with the importance of including citizens in the solutions are very crucial for success.

A way to merge different knowledge fields is what (Etzkowitz 2002) presents as the “Triple Helix Model”. He argues that cooperation between universities, government and industry can benefit all participators, as they are able to learn from each other, and thereby contribute with more appropriate innovations. As described in the presentation of a2i and further discussed in **chapter XX** a fourth type of actor, NGO’s, can be added to the model and thereby create a “quad helix”. The NGO’s has knowledge about of local settings and are normally trusted by the communities in the BoP-market. We have experienced during the data collection that inclusion of the users in the innovations process is crucial when innovating for the poor, why the “quad helix” is seen as an appropriate model in this project. The model is illustrated in figure 6. Where the four knowledge fields meet innovation can be created.

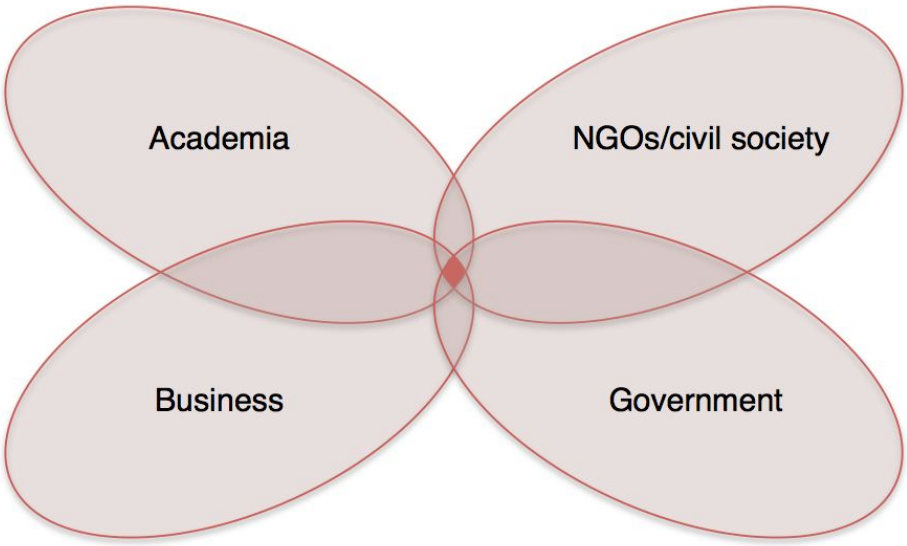


**Figure 6: Quad helix model. Inspired by (Etzkowitz 2002) and a2i. Own illustration.**

This comprehensive approach is seen as very important, because it is important to expand the view on innovation to also include sustainable measures. This includes not only to focus on the economic benefit innovation can create but also to include social and environmental issues as a part of the innovation perspective. The following section will include our understanding of sustainability using existing definitions and strategies.

### 5.2 Understanding Sustainability

Since 1987, when The Brundtland Report “Our Common Future” was published, the definition of sustainable development has been topic of discussion over and over. Countless definitions of the term sustainability are available, why it is important to define how sustainability is understood in current project. However, one general definition states the importance of achieving harmony between industrial systems and nature, while preserving

the lives of humans and other species as well as future generations (Senge et al. 2007). The original definition from the Brundtland Report “Our Common Future” is:

> *"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs"* (United Nations World Commission on Environment and Development (WCED) 1987).

This definition is often presented by three dimensions; economic, environmental and social dimensions, which all should be equally represented in order to achieve sustainable development. The three dimensions are shown in figure 7. Where the three circles overlap sustainable development can be is achieved.

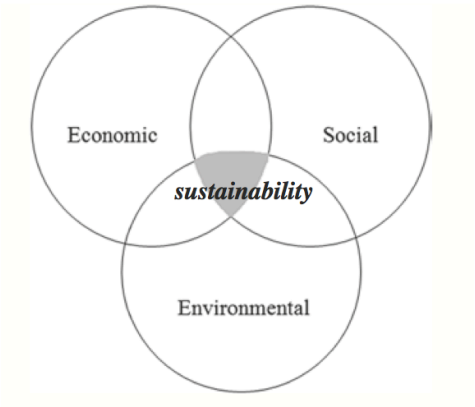


**Figure 7: The three dimensions of sustainability (Morse & McNamara, 2013).**

The importance of each circle is seen differently depending on the individual view. The economic circle will for some be argued to be the most important, while others will view the social or environmental dimension as the most important. However, in reality a totally equalized distribution of the three dimensions is almost impossible, which legitimize the principle of weak sustainability. This concept allows one dimension to be slightly more represented than the others, as long as balance between the dimensions is kept. It can be visualized as a triangular table with three legs, where the legs represent the three dimensions of sustainability. If one leg is slightly shorter than the others, the table will still stand but if the presence of the three legs gets too uneven the table will collapse. In current project weak sustainability is to some extend accepted.

In current project sustainable development can be achieved through solutions, which do not harm the environment or any aspect of the social dimension and at the same time increase the economy in the community and businesses providing the solutions. However, this idea is supported by John Elkington’s introducing of Triple Bottom Line (TBL) in 1994. In this model the three bottom lines are known as; profit, people and planet (The Economist 2009). Elkington suggested the need for businesses not only to measure their success by the standard bottom line of financial benefit but include performance on the overall economy, environment and the society where they operate as well. The companies do not only use

financial resources but also resources from the environment (raw materials, energy and water) and social resources including public infrastructure, the employees' time and talents. Therefore, sustainable businesses must be able to report positive impacts ROI (return of investment) in all three bottom-lines. In other words TBL seeks to measure sustainability by looking at the impacts the company's activities have on the world (Savitz, Weber 2013).

This means, for a company to reach a positive TBL it needs to see an increase of the company's value (financial) as well as contributing with improvement in both the social and the environmental capital (Savitz, Weber 2013). Elkington's work is central in order to understand sustainability in this project because the measurement of the sustainability has become advanced science and the definition is as mentioned above widely discussed (Savitz, Weber 2013). However, it must be argued that there is a problem regarding comparison of the three bottom lines, as it is not possible for example to calculate environment and social performance in the same terms, why merging of the three bottom lines become difficult (The Economist 2009).

Moreover, another important aspect of the understanding of sustainability in this project is that the solutions can be sustained in the community, meaning that they can be operated and maintained within the community itself.

When the networks in Kasese Clean Energy Champion District Initiative seeks to promote innovative, sustainable solutions the actors' individual views on sustainability are important to address, as these individual views might differ from the definition presented in this project.

As been described in the two previous sections, neither sustainable innovations nor sustainable development can be created alone. In both, there is need to consider a comprehensive approach including partners from several fields. Creating networks is one way of combining these fields. Our perception of *networks* is explained in following section.

### 5.3 Understanding networks

The perception of networks in this project is influenced by (Podolny, Page 1998) and will be defined as: Any collection of actors consisting of three or more units, with knots tying them together, working together to achieve not only their own goals but also a collective goal. The knots can be seen as relations with one another, and can be various flows such as exchanges of products, services, financial resources etc. Also is the understanding influenced by (Provan, Kenis 2006), that reckons networks being more than just the sum of actors and their links. The reason for choosing this view is that it underpins a perception of synergy created in networks can lead to innovative solutions.

This project seeks to evaluate on the network in Kasese Clean Energy Champion District Initiative in relation to the interorganizational network-approach, which will create the basis for the analytical framework used to analyse the network. Therefore we have investigated networks operating in Kasese. Following chapter will therefore unfold the understanding of interorganizational networks and the analytical framework this leads to.

### 5.3.1 Interorganizational networks

The understanding of networks in current project is based on interorganizational networks also known as “whole networks”. When studying networks it is necessary to distinguish between different views from where the networks are observed, as observation can take place both at organizational or network level. Historically, most studies have been focusing on networks from an organizational or individual level to evaluate how the members within the network affect the outcomes and actions of the network (Powell, Fish & Sydow 2007). This project seeks to evaluate the network from network-level with an objective view on the operating network and the relations in it.

When analysing networks at network-level, focus is not on the individual actors’ outcome but on the characteristic and properties of the whole network (Powell, Fish & Sydow 2007). In this we wish to examine the central players involved in networks and their experiences from working in it. Together with previously obtained knowledge and experiences from working in Kasese we seek to evaluate how networking has contributed to the common goal of the initiative.

As earlier mentioned the network in Kasese will be examined by applying the interorganizational network model, which basically contain three parts: *Organisation of the network, facilitation* and a part describing elements that affects the *effectiveness of networks*. The three parts are summarized in table 2 and will be described more thoroughly in the following.

**Table 2: The three overall parts when analysing interorganizational networks: *Organisation of the network, facilitation and network effectiveness*. Influenced by (Provan, Kenis 2006). Own illustration**

| | |
|---|---|
| **Organisation of the network** | Participant-governed network |
| | Lead organization |
| | Network-administered organization |
| **Network effectiveness** | Number of participants |
| | Trust |
| | Goal consensus |
| | Competences |
| **Facilitation** | Knowledge mobilisation |
| | Appropriability |
| | Stability |

The following three sections will unfold the idea of the three elements in the interorganizational network analysis.

### 5.3.2 Organisation of networks

Networks is one way of combining the public and private sector, which can lead to enhanced learning, increased capacity and a more effective use of resources if it is properly organized and governed (Provan, Kenis 2006). Though, it is recognized that other ways of combining

the public and the private sector exist such as consortiums, strategic alliances etc. However, networks is as mentioned in the introduction found most convenient in a BoP-context.

Network governance is an important element in a proper functional network (Provan, Kenis 2006) and therefore this section presents three basic forms of network governance: The *participant-governed network*, the *lead organization* and the *network-administered organization (NAO*), which are listed in table 3.

**Table 3: Three forms of network governance. Influenced by (Provan, Kenis 2006). Own illustration.**

| | |
|---|---|
| **Participant-governed network** | Participants are governing the network |
| **Lead organization** | Head organisation manages the network |
| **Network-administered organization** | A separate organ (NAO) governs the network |

*Participant-Governed Networks* is the simplest and most common form of network governance. In this form the participants are governing the network, and the partners are collectively making all the decisions and manage the network activities. Governance can be accomplished either formally through regular meetings, or informally through uncoordinated efforts from the stakeholders. Shared participant-governed networks depend on the involvement and commitment of all stakeholders involved in the network and are therefore particularly good for building capacity in communities. Only by having stakeholders participating on an equal basis, they can be committed to the goals of the network. However, this type of governance only allows a limited number of members (Provan, Kenis 2006).

Networks governed by a *Lead Organization* often occurs in vertical, buyer-supplier relationships, where all major network-level activities and key decisions are coordinated through a single participating member, acting as a lead organization. In this type of network-governance, the common goal might be closely aligned with the goal of the lead organization(Provan, Kenis 2006).

The basic idea behind the *Network Administrative Organization (NAO)* approach is that an organ separated from the network act as the administrative entity and governs the network and its activities. The members of the network still interact with each other but the NAO is coordinating key activities in the network (Provan, Kenis 2006). A2i can be recognized as being the NAO in their network, as they are the leading organization coordinating key activities in the network. One might argue that this type of governance is more bureaucratic than the two others, but allows a high number of actors (Provan, Kenis 2006).

### 5.3.3 Network effectiveness

Table 4 shows four important elements for effectiveness of networks. Effectiveness of networks is understood as the ability to create a proper functional network leading to a desired outcome. When we investigated the network in Kasese additional aspects also

showed to be important, which shows that the context of investigation is very important to consider. The observations done in Kasese will be described more thoroughly in **chapter XX**: AAA. However, following four elements were the ones identified before travelling to Kasese by literature review and were the point of departure of the analysis.

**Table 4: Four important elements for efficiency of networks. Own illustration.**

| | |
|---|---|
| **Trust** | The willingness to accept vulnerability on behalf of positive expectations from others |
| **Number of participants** | The number of participating organizations are important for the governance |
| **Goal consensus** | Agreeing on a common goal is crucial for motivation and participation |
| **Competences** | The competences have to support the goal of the network |

*Trust* can be explained as "The willingness to accept vulnerability based on positive expectations about another's intentions or behaviours" (Provan, Kenis 2006, p. 237). Studies have shown that trust is essential for sustaining a network and improving the performance of it (Provan, Kenis 2006). (Provan, Kenis 2006) claims that trust in networks must be strong and deep and cannot just exist as a dyadic tie between two partners, but needs to be incorporated in the whole network so that a common perception of trust are shared amongst the members in the network (Provan, Kenis 2006). In NAO governance members are tied to the leading organization, and have the capability to access and monitor the actions of the NAO leadership, whereby in a lead organization where governance is built around a collection of dyadic ties, trust can be lower to incorporate in the network (Provan, Kenis 2006).

The *number of participating organizations* in the network is important for carrying out activities. More members are significant for the innovation, because it gives a more holistic approach to the innovation process. On the other hand more members make the network harder to govern, especially when spread geographically (Provan, Kenis 2006). However, it can be argued that *number of participants* is an element of a more institutional character, as the other elements within the *network effectiveness* are about social relations and interactions.

*Goal consensus* is crucial for the motivation and participating in activities in the network. When the overall goal is similar, the participants are more involved in participation. This does not necessarily mean that the individual goals for the members have to be the same. Goal consensus is not necessarily related to trust. Trust is based on experience, reputation and past interaction in the network, while goal consensus is based on the similarity of participants' purpose of joining the network. (Provan, Kenis 2006)

The last point of network effectiveness is ensuring appropriate *competences* are present in the network. Appropriate competences are competences that support the goal of the network. Competences unable to reach for some companies can be shared in a network, so these become available for all members. Securing the competences can also be a motivation for a company or organization to join the network. In general, organizations join or form networks because they seek to achieve something they could not achieve independently. Therefore, it is important to achieve the necessary competences required to attain the network-level goals. NAO-governance is more able to develop speciality skills related to network-level needs (Provan, Kenis 2006).

It can be argued that network "*effectiveness*" is slightly misleading name, as three of the four elements are related to people and their relations. The element "number of participants" differentiates from the other elements by being more "organizational" in character. However, in the discussion in **chapter xx** the elements will be divided into two dimensions: the organizational- and the social/cultural sphere, as this division is seen more appropriate due to the characteristics of the elements.

Table 5 shows the identified elements together with the different governance forms in order to give an overview of inherent competences in the different forms. It can be argued, that trust becomes less densely distributed throughout the network, as the number of participants gets larger. Moreover, as the network goal declines and the need for network-level competencies increases the network-brokered forms like NAO and lead organization becomes more effective than shared-governance networks (Provan, Kenis 2006)

**Table 5: Shows the relationship between the governance form and effectiveness of the network. Own illustration.**

| Governance Form | Trust | Number of Participants | Goal Consensus | Need for Network Level Competencies |
|---|---|---|---|---|
| **Shared Governance** | High density | Few | High | Low |
| **Lead organization** | Low density, highly centralized | Moderate number | Moderately low | Moderate |
| **Network Administrative Organization** | Moderate density | Moderate to many | Moderately high | High |

A participant-governed network form does not allow too many members, because it can be harder to manage and also keep trust between the members. When the network members increases, a NAO is more able to manage activities, because participants no longer interact directly with each other, but rather interact directly with the lead organization or NAO (Provan, Kenis 2006).

High goal consensus is necessary and an advantage when building network-level commitments. Especially self-governed forms are most effective when the network level goal is consistent to the participants' goal. But at the opposite extreme, when there is little goal consensus, there might be no point in network involvement after all. In the NAO form the goal consensus may be quite strong, although there may be agreement on the desirability of a network and on the value of an NAO, there may only be modest agreement about what the network should be doing and how participants should be involved.(Provan, Kenis 2006)

When it comes to goal content and process, network participants are more likely to be involved in network activities and committed to work together in the absence of hierarchy. Not necessarily does the goals of the network members have to be similar in fact this can result in difficulties in the corporation, when competitive pressures makes the participants unwilling to share their information with other members (Provan, Kenis 2006).

### 5.3.4 Facilitation of networks

The following will describe the facilitation of network, which are important for the effectiveness of the network. The network manager is important because it has the role of transferring knowledge in between different knowledge fields, which is crucial for creating innovations. The section will handle the three elements: *Knowledge mobilisation, appropriability* and *stability* and are listed in table 6.

**Table 6: Three important elements in facilitation of networks. Own illustration.**

| | |
|---|---|
| **Knowledge mobilisation** | Knowledge gain more value when its shared |
| **Appropriability** | Knowledge and its value is equally distributed in the network |
| **Stability** | Creating trust and stability, and on the other hand creating flexibility |

As has been mentioned earlier innovation occurs within the boundaries of mind-sets. This explains why *knowledge mobilisation* is an important for the network manager to support. The task for the manager is to absorb relevant information, and share it equally in the network. This is also important for creating trust among members in the network in general, but also to the knowledge manager. The broker should be taking lead and be creating a common access and ownership, which are important for the social aspect and also the ability for members feel ownership and identity in the network.

The interorganizational network model contains an element of *appropriability*, which basically is to secure that knowledge is equally distributed in the network. This is based on the assumption that trust, transparency, ownership and common problem solving is crucial for securing a proper level of appropriability. These conditions are likewise very hard to explore in Kasese, and therefore the analysis has mostly been focussing on the platform for knowledge sharing.

*Stability* in network is to secure the innovation process happens as intended. On the other hand it is still very important to keep a certain level of flexibility to adapt to the different processes as it also has been mentioned earlier. These included creating legitimacy to the network by attracting new members and thereby strengthen the innovation potential and the future possibilities. The project group will therefore investigate relationships between members to be able to evaluate on the legitimacy to the network.

### 5.3.5 Other additionally identified elements

Beside the basic elements mentioned an interorganizational network analysis could also include following identified factors: *centralization, multiplexity, Density, fragmentation, structural holes* (Powell, Fish & Sydow 2007)

*Centralization* considers if one organization is more centrally connected than the other partners in the network. This meaning if one organization has considerably more ties and links than other organizations (Powell, Fish & Sydow 2007).

*Multiplexity* is linked to the *centralization,* as it is the strength of the organization's relationship to the network. Furthermore, it is about the number of different types in links to others partners (e.g. goods, personnel and knowledge (Powell, Fish & Sydow 2007).

*Density* is concerned with the overall level of connection among the members of the network. Meaning, if are some members are more fully connected than others or if is connectedness is even throughout the network. A high level of density is not necessarily a good thing, as the coordination burden might increase (Powell, Fish & Sydow 2007).

*Fragmentation, structural holes* are about the connections in network and if all partners are connected either directly or indirectly or if the network is broken into fragments. In case of fragmentation the network has structural holes (Powell, Fish & Sydow 2007).

*Progression:* As has been mentioned earlier it is difficult to examine the progress of interorganizational networks, because it takes a very thorough and deep analysis that is both time consuming to conduct. Therefore, the data collected do not allow us to analyse the progression of the network in Kasese Clean Energy Campion District initiative very detailed.

The additional elements described above will be included in the analysis of the network in Kasese Clean Energy Champion District Initiative to a limited extent.

The challenge for a network is, among others, to build network legitimacy both internally and externally and also to address the potential tension between them. It is important for participants, to reckon the benefits for them in networking and collaboration with others.
The flexibility the networks can provide has great advantage over hierarchies that have a more bureaucratic approach for achieving their goals. As has been described earlier working and interacting in a network is an ideal way of combining existing knowledge into new ideas

and solutions. This can lead to innovative solutions that can support sustainable development.

Following section will present two suggestions on how the three theoretical fields of innovation, sustainability can be brought together.

### 5.4 Innovating for sustainability through networks

In order to create sustainable development there is a need for participating organizations. According to the report "Innovation for sustainability" published by the Canadian Network for Business Sustainability there is three stages of which an organization can perceive their sustainability of their business (NBS, Network for Business Sustainability 2012). The three stages are summarized in table 7.

**Table 7: The three stages of sustainability. Inspired by (NBS, Network for Business Sustainability 2012). Own illustration.**

| **Stage 1: Operational optimization** | **Stage 2: Organizational transformation** | **Stage 3: System building** |
|---|---|---|
| "Doing the same things better" | "Doing good by doing new things" | "Doing good by doing new things with others" |
| Compliance with regulations | Making profit while doing good | Creating positive impact on people and the planet |
| Incremental innovations | Radical innovation | Radical innovation and thinking beyond the firm |
| Reduce costs or maximize profits | Viewing sustainability as a market opportunity | Perceiving their economy as part of the society |
| Pollution control, effective use of raw materials | Innovating for changing consumption habits | Corporation with other organizations to create "Circular economy" |

According to the report, 70 percent of today's organizations are working in stage 1, which involves operational optimization. The focus is here to improve efficiency of production and products – "Doing the same things better" to reduce harms of production. Thereby, the organization can achieve increased efficiency and thereby profit, when at the same time make compliance with regulation and legislation. The innovations on this stage is typical incremental and are addressing one single issue at the time. On an organizational level this can include pollution controls, when looking at the product-level it could be reduced packaging or a reduced use of raw materials for production (NBS, Network for Business Sustainability 2012).

In the second stage the organization are viewing sustainability as a market opportunity and are inspired by "doing good", while still benefitting from gaining access to new markets of sustainable products. To move to this level the organization must undergo a transformation in

mind-sets from “doing the same things better” to “do new things”, which therefore involves radical innovation. An example given by the report could be to create CT scanners that are portable, durable and have minimum functionality – making them affordable and useful for health care providers in developing countries, which is a very useful example in connection to this project (NBS, Network for Business Sustainability 2012).

In the third stage we find the system builders, these organizations have a holistic approach to sustainability, and consider other organizations and companies as possible collaborates, which they can benefit from. The system builders are carefully considering all three elements of TBL: People, planet and profit, while doing business. They perceive their economic activities as being a part of society and not distinct from it. This requires an even bigger change in mind-set to become a system builder, because the organization moves from “Doing new things” to go beyond, and thinking about serving new markets and think beyond the firm. The perception is moreover that almost every organization or company is unsustainable when working alone, the system builder-approach is highly considered in this project, because it legitimizes working in networks to obtain sustainability (NBS, Network for Business Sustainability 2012).

This is also the argument in Network for Business Sustainability’s second report “Sustainability through Partnership”, where they identify working partnership as being a natural way to address sustainability issues, because it can help businesses to innovate, improve society and environment, when at the same time acquire new skills, knowledge and resources. It is also argued that the partnership types should be more transformative instead of reactive, by seeking to create wider societal improvement by meeting all partners’ objectives and at the same time empower the communities (NBS, Network for Business Sustainability 2013).

We see the third stage of the strategy, as the stage the networks of Kasese Energy Champion District Initiative should be aiming at. This stage is central for the focus of current project, as it forms the motivation for an ambitious goal of the project, which is to navigate the networks in the direction of this stage.

Many of the same characteristics are found in the strategy of Shared Value. The concept is based on the publication “Creating Shared Value” from 2011 and seeks to re-establish the relation between business and society, as businesses in the past has been seen as a major reason of environmental, social and economical problems. Moreover, it seems that “social responsibilities” still seem to be placed in the periphery of the business’ strategies. The Shared Value Concept seeks to provide a framework to address these issues and form a new business approach for innovation and growth (Porter, Kramer 2011).

The concept is defined as operating practices, which enhance to competitiveness of the company while at the same time advancing the social and economic conditions in the communities they operate in. In other words the creation of shared value is about identifying and expanding the relations between economic and societal progress. Companies can

create economic profit by creating societal value. However, shared value is not sustainability, social responsibility or social responsibility but should instead be seen as new way for companies to achieve success. It is not something companies have in the periphery of what they do but in the centre. It is about discovering societal problems and makes these into business possibilities, which benefit both business and communities (Porter, Kramer 2011).

(Porter, Kramer 2011) argue that the creation of shared value is far more sustainable and effective that most of the corporate efforts of today in the social area. By introducing shared value it will encourage the companies to make real improvements on the environmental conditions, as it may help them see the environment as a productivity driver instead of a response to external pressure (Porter, Kramer 2011).

However, the Shared Value strategy also points out the importance of working in partnerships and develops local clusters. These must include related businesses, service providers, suppliers and infrastructure in a specific field. Businesses alone cannot form a sufficient cluster. Universities, Schools, quality standards, fair-competition laws and market transparency are important to include as well. The idea about the clusters is that the company is not self-contained and cannot succeed alone but needs the clusters in driving innovation, productivity and competiveness (Porter, Kramer 2011).

We will, based on the strategies explained above, argue that working in networks can both create innovation for businesses, when at the same time creating a sustainable development, if it is incorporated in the roots of the organizations and their networks.

The theoretical outset presented above should be used to get an understanding what is considered when talking about innovative partnerships/networks. This chapter also investigated which factors to consider if a functional network should be established and sustained in order to promote sustainable solutions in Kasese, Uganda through a network-approach. On the basis of current chapter, an analytical framework is constructed and shown in the following section.

## 5.5 Analytical framework for analysing Kasese Clean Energy Champion District initiative

As described in previous chapter the interorganizational network model forms the overall basis for the analytical framework. The framework will be influenced by our understanding of sustainability and innovation defined in the theoretical outset. Therefore, current section presents the analytical framework that has been used to carry out research on networks operating in Kasese Clean Energy Champion District Initiative. The analysis will include an investigation of indicators listed in table 8.

**Table 8: Analytical framework. Own illustration.**

| | Element of investigation | What to investigate? |
|---|---|---|
| **Organisation of the network** | *Network governance* | - Which elements from the governance forms can be recognized in the network?<br>- Have some actors occupied a more central role than others and what does this mean for the network?<br>- How are members connected and what are their relations? |
| **Network effectiveness** | *Number of participants* | - Is the number of members sufficient?<br>- What effect does it have on the effectiveness? |
| | *Trust* | - Is there trust in the network in general and amongst the participating members?<br>- What is affecting the trust in the network?<br>- What does it mean to the effectiveness? |
| | *Common goal consensus* | - Is there a common goal for the network outcome?<br>- What does it mean for the motivation for members? |
| | *Competences* | - What are appropriate competences in relation to the context of Kasese?<br>- Are these present in the network in order to make sustainable innovations? |
| **Facilitation of the network** | *Knowledge mobilisation* | - How and to what extend is knowledge shared in the network?<br>- What type of knowledge is shared? |
| | *Appropriability* | - Is the knowledge shared equally among members?<br>- Who is responsible for knowledge sharing is happening? |
| | *Stability & flexibility* | - How satisfied are members for being a part of the network?<br>- How does that affect the stability of the network? |
| **Other elements** | *Innovation* | - How have the network contributed to innovation in Kasese?<br>- How have the innovations affected the community?<br>- What challenges are limiting innovation |
| | *Understanding of sustainability* | - How is sustainability understood among the members of the network?<br>- Are the network members' understandings of sustainability in alliance with the understanding presented in current project?<br>- What does it mean for the development of the initiative? |

By using the analytical framework presented above, we wish to investigate the network of Kasese Clean Energy Champion District Initiative to answer following research question:

### 5.6 Research question

***How can the interorganizational network model be used to analyse and optimize the network operating in Kasese Clean Energy Champion District Initiative in order to create innovative solutions supporting sustainable development in Kasese District?***

To answer the research question following sub-questions are asked:

- *How can elements shown in the analytical framework be identified and analysed in the network of Kasese Clean Energy Champion District Initiative?*

- *How can the problems and challenges identified in the analysis be reduced? And what additional factors have been found to affect the network?*

- *Which recommendation can be made to improve the network and make a replicable model that can be used support innovation and sustainable development in the base of the economic pyramid?*

# 6 Analysing the network of Kasese Clean Energy Champion District Initiative

This chapter will contain an analysis of the network operating in Kasese Clean Energy Champion District Initiative. By using information from the semi-structured interviews conducted in Kasese and Kampala together with experiences and knowledge gained from observations and from interacting with relevant stakeholders, the current network in Kasese will be analysed. We will make use of the analytical framework presented in the previous chapter to analyse current network in Kasese Clean Energy Champion District Initiative.

## 6.1 Current network in the initiative

Figure 8 illustrates our perception of the network and relations between members, as it currently exist in the initiative.

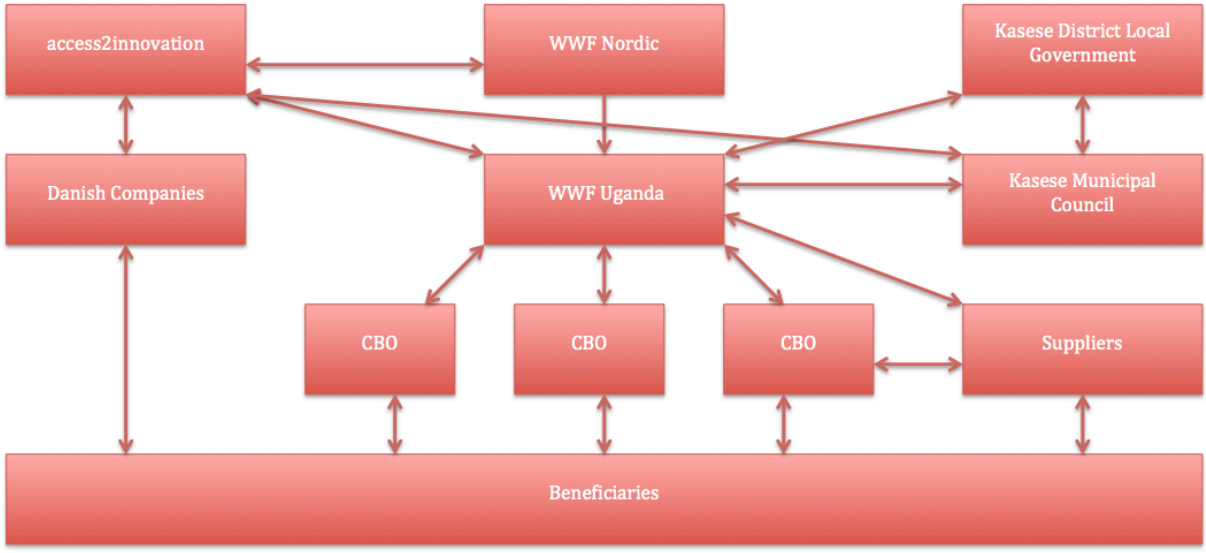


**Figure 8: Current network existing in Kasese Clean Energy Champion District Initiative. Own illustration.**

As figure 8 illustrates, WWF plays a central role in the network and can be seen as a central player in the initiative. This comes as expected because WWF was conceptualizing the initiative from the outset. Although, WWF's intention is that Kasese District Local Government in time will take responsibility as a network manager, it still seems like WWF is the central actor in the network. This was supported by (Augustine April 2014, Musika April 2014, Katswera April 2014, Masumbuko April 2014, Baluku April 2014), who replied that they only report back to WWF. Some of the respondents even stated that they see Vian (WWF) as their supervisor (Masumbuko April 2014). This is contrary to the initiating idea, where Kasese District Local Government should be leading the network (WWF 2012, Musika April 2014). Formally, Kasese District Local Government might still have the leading role but knowing that the CBOs only report back to WWF indicates a conflict. The role of WWF as a central actor is emphasized by the *multiplexity* of the linkages they provide, which includes capacity building, information, education and funding etc.

### 6.2 Relations between members in the network

In the network various connections between different stakeholders exist. A2i was initially working together with WWF Nordic, who connected them to WWF Uganda. This connection developed a range of new partnerships, among them, a strong connection to Kasese Municipal Council and Local governments. Through these relations, a close connection developed to CBOs, supplier, cultural institutions and the community in Kasese, which is crucial for success. A2i has a selection of Danish companies, which they can connect to Kasese to create innovations. The idea is to create the link between the communities in Kasese and the Danish companies. This means the companies are connected to the end users. A2i does not occupy a central role in the network, because they only have few ties to other participants in Uganda. Nevertheless, they provide important resources as capacity building in all layers of the community and links to Danish suppliers.

As a2i carries out their own projects there seems to be two separate network operating. One network operating in Kasese led by WWF and another operating in Denmark facilitated by a2i. However, it might be limitation for a2i's relations to the local community that they operate primary from Denmark. A2i was never meant to be geographical present part in the network in Kasese but rather provide the linkages between the Danish and the Ugandan network.

By doing this they can contribute with knowledge in order to strengthen the Ugandan network and the initiative. This will hopefully result in strengthening of ties between the Danish a2i-network and the Ugandan network, and thereby ensure a proper integration of solutions in Kasese.

Kasese District Local Government has a central role, because they are formally leading the network. Beside this, they do planning and decide how Kasese District should develop. They are thereby influencing Kasese Municipal Council and their framework. Both Kasese District Local Government and the Municipality have development plans, which the projects in the initiative must comply with (Seleverio April 2014, Katswera April 2014). Kasese District Local Government thereby influences the community through planning but they also have other links to the community as they supply them with projects and services. Kasese District Local Government are having a hard time reaching the CBOs, who are not always willing to let Kasese District Local Government know which activities they carry out in their area (Katswera April 2014, Seleverio April 2014). This indicates that some fragmentation might exist in the network, between Kasese District Local Government and CBOs, because transparency is not clear from both sides.

The suppliers are having direct connections to beneficiaries to whom they sell their products. But also they have directly connections to CBOs and WWF. The CBOs can choose to buy directly from the supplier and sell it to the community but sometimes WWF buys products from the suppliers, and passes them on to the CBO as grants. Thus, instead of funding the CBOs with money, they just supply them with equipment, which they can sell to end users. (Kato April 2014)

As seen in the illustration there is no arrows between the different CBOs, which indicate

serious structural holes. In this case, this is a big issue to the network and effectiveness of same, as it will also be explained later in this chapter.

The overall density of the network is seen as relatively low. WWF has a central role in the network with good connection to all members both in terms of resource flow, funding, capacity building etc., which makes the multiplexity high. Although, it can be argued that the connectedness between other members are low. Therefore it is argued a high level of *centralization* in network around WWF. As will be explained later, connections between different CBOs and suppliers tend to be vague, which have serious influence on network effectiveness. This will be specified later in the analysis.

## 6.3 Organisation of the network

***Network governance***

As described in previous chapter, the interorganizational model includes three types of network governance: participant-governance, lead organization and network administered organization (NAO). Characteristics from these types were attempted identified in Kasese Clean Energy Champion District Initiative.

The *participant-governed network* is based on equal influence in the network from each participants, supporting a common goal even though there can be differences in size and resources in the member organization. This is difficult to recognize in the initiative, where competition is the driver for most organizations (Kabbyanga April 2014, Katswera April 2014, Masumbuko April 2014, Baluku April 2014, Mbauta 2014, Kato April 2014). Some have even accused others for being deceitful because they felt funders were neglecting them (Kato April 2014). Furthermore, WWF and The District Local Government are taking far more leading roles than the networks other partners, why the influence is not equal in the network. Moreover, the number network members are too high to make participant-governed network function. Thereby, it is argued that the network is not a participant-governed network.

The lead-organization often appears in vertical partnerships with buyer-supplier relationships. Here, the main purchaser will have capacity and interest in governing the network, and the network goal will be similar to the main purchasers' personal goal. WWF is a part of the network in Kasese but is more a stakeholder in the supply chain than the main purchaser. However, WWF launched the initiative, the goal is naturally similar to WWFs overall goal. Nonetheless, WWF does not wish to take the leading role in the initiative, even though they seem to have it. Therefore, it can be concluded that the network is not built upon lead-organisation governance, even though some characteristics from lead can be identified around WWF.

In the Network Administration Organization-approach, the NAO is a separate unit, established either as an initiating unit or by members of the network. This suits the role of WWF well, as they initiated the network in Kasese. Unlike the Lead-approach, the NAO is not a part of the network, which is contrary to WWFs role in The Kasese Clean Energy Champion District Initiative.

However, the network in the initiative is not built upon a governance form, even though it contains elements of two of the types of governance. WWF is describing their role as being outside the network, only monitoring activities within the network but apparently that is not the case, when analysing the information gained from the stakeholders, where some states that they see WWF as their supervisors(Masumbuko April 2014). The lack of well-defined roles in the network and the blurred and confused way of governance may affect the network effectiveness. The effectiveness of the network will be analysed in the following.

### 6.4 Effectiveness of the network

Besides of having the right set-up for a network, the literature study showed some important indicators that have influence on network effectiveness. These are described in the theoretical outset. Current section seeks to identify whether these elements are present in the network in Kasese and how these are influencing the network effectiveness.

#### *Trust*

Trust can be defined as "The willingness to accept vulnerability on behalf of positive expectations from others intentions and behaviour" (Provan, Kenis 2006, pp. 237). Businessmen in Uganda tend to keep their "cards" close to themselves, which is a phenomenon The Mayor describes as "The African mentality" (Kabbyanga April 2014). If an African has knowledge – be it a business idea or technical knowledge about a specific use of a tool – they keep themselves, because someone could take advantage of knowledge and use it to win in competition (Kabbyanga April 2014). This mentality is perceived as a limitation for building up trust in the network, because it undermines transparency and openness.

"African mentality" has harmful consequences for the network, especially because trust is perceived as being central element in network collaboration. A key-factor for development and innovation is an experimental approach that calls for openly sharing of resources and competences. This also seems to be the mentality in the municipality council, where the mayor states:

> *"For anything to be sustainable, the beginning must have a powerful foundation. And in networking, this is more mental than physical. So therefore there must be transparency and trust."* (Kabbyanga April 2014)

Thereby the mayor states his understanding of the importance of creating a network that can be sustained in the future, and for him this means transparency and trust among the members, which we acknowledged.

However, among the suppliers and CBOs it seem like trust is being undermined. Surprisingly we were told that some suppliers were accusing others for being deceitful about funds, and misusing it, only to place their own organization in a brighter light (Kato April 2014). Whether the story is true or not, both cases are unfortunate for the level of trust in the network.

Also the CBOs have been telling stories about competitors in the struggle for receiving funds. These cases are unfortunate for the network, because it undermines the level of trust, and certainly not motivates the members to have transparency in their operations in Kasese Clean Energy Champion District.

***Number of participants***

Number of participants is a central parameter for the effectiveness of the network, because an appropriate number makes it easier to carry out activates. A proper number of participants are depending on the context and governance form. Many participants are making the network harder to govern, especially when they are spread geographically. Too few participants may cause lack of competences in the network.

The network in Kasese Clean Energy Champion District Initiative is a compound of different stakeholders ranging from cultural institutions, governments, businesses and organizations. A full list of the stakeholders in the initiative can be found in (Hårklau, Reinvang 2013). According to David Bradford, leader of KADDE-net, only 6 CBOs is carrying out activities in the network, which in his opinion is too few to embrace a population of 800.000 people. This is also the opinion at WWF, who have been forced to end collaboration with two CBOs since the onset (Musika April 2014).

At the moment only three suppliers are actively involved in the initiative, which is too few (Musika April 2014). Several CBOs are demanding for more suppliers to be able to give the beneficiaries a broader range of choices. They are aware that more products and quality products will strengthen the competition between the suppliers and improve the products they sell. As for now, the demand is bigger than the supply, because various suppliers are out of stock. This is unfortunate, especially because the CBOs have been able to create the demand, but because of stock-problems haven't been able to meet the demands.

KADDE-net is at the moment monitoring 800 CBOs within in Kasese District Local Government, working with women's rights, health issues, children safety etc. In this regards it must be mentioned that some CBOs are "fake", and have family members on all position, only operating for receiving funds (Kato April 2014). So the selection of CBOs should be with care. On the other hand, it might not make sense involving more CBOs if the supply is not sufficient.

Though it can be argued, that the process of getting the product to the end user is not happening fast enough and the initiative has not yet reached a satisfying number household with products, and therefore more suppliers must enter the network to be able to meet the demand (Kato April 2014).

***Goal consensus***

A common goal consensus is important for motivation and participating in the network. It makes the effectiveness better as well as the motivation for the members. Nevertheless, this

is one of the biggest challenges identified, where the lack of a common goal seems to slow down the success of the network.

As has been mentioned, the CBOs in the initiative are not working well together but rather against each other and are seeing others as competitors. This was learned when interviewing the first CBO, telling that CBOs in Kasese District tend to see it as a business project and looking at it in terms of a competition about service deliveries, which definitely slows down the process of achieving the goal of the initiative (Kato April 2014). However, it is still important to state that some competition is healthy in order to spread the innovations but it has to be regulated to some extend so it does not harm the launching of innovations.

Even though the CBOs themselves are aware of the problem, it doesn't seems like it will change, because no one is ready to take the first step and share resources and knowledge with other partners. They know that they are working down the same road, all want to light up Kasese, but *"The vision is still money making"* (Masumbuko April 2014).

*"The competition is there and it is healthy. My job is now to regulate it"* (Kabbyanga April 2014). But still it seems like this is not happening. As has been mentioned earlier, some CBOs are doing activities within the municipality without the council notice, so they sometimes fail to implement the development plan (Seleverio April 2014). At district level they are feeling the same, why have a wish that planning could happen together, implementing together and evaluate together, so that they can jointly succeed with the vision of Kasese District Local Government (Katswera April 2014).

So far, it seems WWF is not aware of the competition negatively affecting the effectiveness of the network. We were told by WWF that: *"What we let them know is there is no competition, we are working together"* (Musika April 2014). This might be true, but not reality when they are working in the field.

***Competences***

It is important for the network effectiveness to gather appropriate members with proper competences in order to carry out the planned activities. As described earlier, a broader selection of different stakeholders may have the ability of creating sustainable innovations. For the network manager a difficult task is therefore to be attracting the right stakeholders with appropriate competences and resources.

According to the mayor, the biggest challenge is that Ugandans lack human capital in the sense that they are not innovative. They tend to look at situations as being static and not changing and are therefore not used to be thinking ahead. As the Mayor states: *"The way it is today it will also be tomorrow"* (Kabbyanga April 2014). Rose from barefoot likewise shares this view, who claims Ugandans is not creative enough (Kato April 2014).

The project group did though manage to experience some creativity amongst the CBOs when they were presented to AFODEs side business. In this, they produce charcoal from

biodegradable waste such as banana husks and cassava flour. With this perspective they were able to make enough money to sustain themselves as a business. Furthermore, they trained youth in doing the same things, taking the business to the village and train the people here as well, which was very impressive to experience (Masumbuko April 2014). Moreover, it is known that Friends of Nature are sorting plastic from waste and sell it to Kampala, where this can be recycled (Baluku April 2014).

These are good examples of how the CBOs can sustain themselves without the help of their funders and also an example of how to be innovative and creative, which are two important competences to bring into a network in order to make it innovative. These examples should be shared throughout the operating CBOs so that other CBOs can learn to sustain themselves and get independent of funding.

### 6.5 Facilitation of the network

This section seeks to analyse the elements within the facilitation of the network, which was presented theoretical outset. This point has three indicators: *Knowledge sharing, Appropriability and Stability/flexibility.* These will be analysed according to what have been observed in Kasese together with a description of their influence on the network.

#### *Knowledge sharing*

As described in the theoretical outset, knowledge sharing is depending on the ability to absorb knowledge and share it openly with other stakeholders. The willingness to share requires socialisation and build-up of trust amongst members, and also platforms for sharing knowledge such as workshops, meetings and open forums.

When investigating the level of knowledge sharing in the network, we found different perceptions. Some say that they are sharing and many say that they don't. However, in the research for knowledge sharing we were pleased to find examples of CBOs, who actually collaborated and shared resources. The first example is where one CBO have bought a solar lamp from another CBO because he ran out of stock himself. The other example was where a CBO offered his technician to another CBO for a few days because of lack of capacity (Mutyaba April 2014).

In terms of knowledge sharing between the different CBOs, we must conclude that it is not happening at the desired level. Although several CBOs are telling that they have all sorts of platforms, where they can share, they are still not doing it. Some are even praising WWF for establishing so many possibilities of connection in between the CBOs but are pointing at other CBOs attitude towards knowledge sharing as the reason for the failure. Furthermore, a District Energy Forum has been established in Kasese, but is basically still in words and not put properly in place (Baluku April 2014). This forum has the ability to bring the CBOs closer to the private sector and local leaders, but because it is not funded by any agency, it has not happened yet.

Several respondents are pointing at “the African mentality” as the root to the problem (Kabbyanga April 2014, Kato April 2014, Masumbuko April 2014). They are holding their information for themselves, because they believe that sharing it will weaken their business. Actually some say that it would never come to their mind to be sharing information without getting something in return (Masumbuko April 2014). It is not obvious for the people in the network that sharing information, business experiences etc., can help them in collectively achieving the goal of reducing poverty.

In our experience many partners are pointing fingers at others, but are not able to take responsibility themselves. Many accuse others for not sharing information but picture themselves as more than willing to share.

This has an affect on the level of innovation in the network. As has been mentioned several times in this research, the innovation happens between boundaries of mind-sets and not within the provincial of one knowledge and skill base (Leonard 1995). This perception will not be supported if knowledge is not shared, but kept to the organizations themselves. The knowledge they have will not be exposed to new views and thereby no new innovations will be created. The level of sustainability might also be affected if knowledge is not shared between the members of the network because one organization simply cannot achieve the goal by working alone, which some members of the network also acknowledge (Mbauta 2014).

***Appropriability***

As described in the theoretical framework, appropriability ensures an equal distribution of knowledge in the network. To succeed in this, trust is decisive together with transparency amongst members, so that members gain a perception of ownership of the network and are more willing to share resources and do solve problems jointly.

Members of the network are reporting back to WWF. Because WWF funds the CBOs they also need to report back what they are doing for accountability (Katswera April 2014). They have quarterly review meetings with WWF and also hand in monthly reports. WWF though, is not ready to share this information with other CBOs, because they don't think it is fair to do so (Musika April 2014)**.** Therefore, knowledge is not shared equally between the stakeholders, which obviously also affects the level of innovation, and also the trust in the network. Furthermore, this indicates that WWF is taking a leading role in the initiative.

Kasese District Local Government seems rather frustrated that the CBOs are not reporting back to them, telling about their activities. Kasese District Local Government is sharing their documents, even budgets to the public, but the CBOs will not report back to them. Kasese District Local Government do not necessarily want to manage the CBOs business, but they wish for an insight in their activities, so that they can ensure that it is in line with the development plan (Katswera April 2014).

The same was told at the Municipality that are complaining because the CBOs sometimes do

activities in areas, without their notice. Sometimes, this can even result in them failing to implement their Development Plan (Seleverio April 2014).

However, The Mayor were very inspired by the business model he saw on his visit in Denmark, where everybody was sharing knowledge across different sectors. This has now inspired him to establish a Trust together with some of the NGOs in Kasese District Local Government. The idea behind is that business experiences should be shared together with innovations so others can learn from it. In the Trust a requirement for the members is to be sharing knowledge and business experiences so that innovation will happen between different knowledge fields. (Kabbyanga April 2014)

***Network stability***

As described, stability is crucial for controlling the innovation processes in networks. However, on the other hand flexibility is also crucial for adapting to a constantly changing environments and working conditions. Attracting new partners and thereby new areas of knowledge that can contribute to the innovation process strengthens the legitimacy of the network, which strengthens the motivation for working in networks.

The advantages of sharing knowledge across different sectors is known by most stakeholders in Kasese District Local Government, but only pursued by few. It is hard to point at one reason for them not to share, but the "African mentality" together with lack of knowledge about the advantages of sharing knowledge. The different CBOs are accusing each other for not sharing their business experiences and knowledge, but it seems like no one is willing to take the first step them selves. According to The Mayor, the lack of transparency is also an evidence of lack of trust among the members (Kabbyanga April 2014).

The lack of trust is crucial for the stability of the network, because it is vital for the collaboration. It gets harder for a network to adapt to changes if the members are not aware of changes in the surrounding society. So if experiences from different stakeholders are not shared among them it will be hard to adapt to the shifting circumstances and thereby be flexible.

On the other hand, all stakeholders are happy to be a part of the network. Exposing the network to new innovations like the ones a2i and System Teknik has brought to the area is creating a positive perception of the network. Some actually suggest bringing in more companies to broaden the range of choices (Masumbuko April 2014).

Several members are emphasizing that development are happening in Kasese at an accelerating pace. Most are feeling that they progress and they through networking now are able to sell and gain more profit. This builds confidence around the network and is strengthening the stability. In the long run networking will hopefully also built up trust and knowledge sharing.

### 6.6 Innovation in Kasese

Innovation is vital for penetrating the BoP-market in Kasese. However, while investigating the network in Kasese, several interviewees mentioned problems regarding the level of innovations among the citizens. The Mayor argued that people of Uganda are not innovative, which he sees as a big obstacle for the development of Kasese district (Kabbyanga April 2014). This was also acknowledged by Kooli Augustine, who is concerned about the level of innovation in Kasese. He argued that people in Uganda are seeing things too narrow, which is a limitation for the level of innovation that the network can generate. As he states:

> *"You cannot expect people to think about the future, when they don't even know if there will be food on their table tomorrow."*(Augustine April 2014)

As mentioned earlier in the analysis, there seems to be some obstacles hindering the innovative processes in Kasese. Challenges identified in the network have an affect on network collaboration, which, as has been explained in the theoretical outset, is vital for creating innovation.

However, besides the obstacles in innovativeness, the network approach and the integrated solutions must be seen as innovative in character. Especially the solar micro-grid implemented in Kayanja, where the implementation process was involving all spectres of the "quad helix" approach, in order to have a proper integration. This is seen as a great example of a high level innovation. More information about the solar micro-grid will follow in the discussion in the next chapter.

The Mayor believes that the networking going on in the initiative is now changing the tendency and lack of innovativeness, as they local entrepreneurs see and adapt ways of handling development and innovation from international partners (Kabbyanga April 2014) So despite the obstacles identified in the network the level of innovation is increasing in Kasese Clean Energy Champion Initiative.

As has been described by the Mayor, the people of Kasese need to change their mind-sets, which is the job of local governments. He feels though, that this is happening to some extend both in businesses and also in the civil society.

### 6.7 Understandings of Sustainability in Kasese

It is relevant to determine the understanding of sustainability among participants in the network in Kasese, in order to be able to work towards it in the future. The results from the investigation will be presented in current section of the analysis.

#### Kasese District Local Government

All three dimensions of sustainability are influencing the understanding of sustainability in Kasese District Local Government. Besides, in order to be able to achieve it, there must be proper governance (Katswera April 2014). At some point it can seem difficult to achieve

sustainable development because of lack of resources, both in terms of finances, but also the level of innovation amongst citizens in the society. It was acknowledged by Joseph Katswera that it is important to bring the citizens on board and give them ownership of the projects being carried out in Kasese district, but also give them ownership of the resources (Katswera April 2014).

In order to gain trust amongst citizens, there is furthermore a need for leaders, who act like leaders and who is a good example for the citizens, such as the mayor. This is stated because there have been unfortunate examples of former leaders who have been exploiting financial resources and misused funds to for own personal benefit (Augustine April 2014). This is obviously unfortunate in order to gain the trust of the people and create development, and an issue that calls for serious efforts. Kasese District Local Government thereby put effort in all three dimensions of sustainability and additionally recognizes the implications with this approach.

**Kasese Municipal Council**

In Kasese Municipal Council exists likewise a broad understanding of sustainability as an approach that embrace the three dimensions, which have been described earlier. The approach used to initiate the work towards sustainable development is influenced by a business-led approach, which should be strengthened by creating partnerships. The partnerships should be based on transparency and trust and must contain defined goals and expectations in order to build a strong fundament for sustainable partnerships (Kabbyanga April 2014).

It is also underpinned, that citizens need to be deeply involved in the planning process. In the process of coming up with new initiatives for the development plan, the municipality begin in the lowest level of participation: the villages, so that ideas for new initiatives origins from citizens. *"When an initiative are picked from the development plan, this initiative are owned by the people, right from the grassroots."* (Seleverio April 2014). There is also put an effort in integrating environmental issues in the physical planning, so that the projects do not harm the environment and communities. This will minimize the adverse affects on the community, which will result in a community that identifies themselves with the project so that it can be sustained beyond its timeframe. Thereby, Kasese Municipal Council embraces all three dimensions of sustainability, but have a slightly bigger emphasize on the economical and social aspect when initiating new projects, which slightly undermines the environmental dimension.

**WWF**

In WWF, there is an importance of having an innovative, business- and district-led initiative in order to make it sustainable (Musika April 2014). There is a need for bringing renewable and innovative technologies on board in the initiative, which should not be hand-outs, but based on a business-approach, so that people are working to achieve it. Lastly, the initiative should be district-led, so that even though WWF is pulling out of the initiative, Kasese District Local

Government should still be able to support it. Therefore, WWF has put a lot of effort in building an appropriate platform for Kasese District Local Government to move on with so that network can be sustained.

In WWF there is a strong business-minded approach to the initiative, underpinning the importance of having a strong value-chain with a constant flow of good, quality products. There have been examples of end users who have been dissatisfied with some products, which resulted in bad reputation of the technologies (Musika April 2014). Therefore, it is important to avoid this, because it all comes down to the end user who purchases the products.

The approach to sustainability at WWF is slightly business-minded, which also appear in the outset for the initiative (Musika April 2014). Nevertheless, WWF states the importance of bringing in environmental friendly products and also states the importance of involving the end users.

**CBOs**

Among the CBOs it is common to find a business approach to sustainability because it is crucial for the survival of the organization. But a CBO is first of all serving the community, so they wish to educate and serve the citizens of Kasese (Masumbuko April 2014). Through education and capacity building the CBO wishes to create an understanding amongst the citizens that they need to work in order to access the technologies being promoted in Kasese (Mbauta 2014). In order to make the community develop in a sustainable manner, everybody have to contribute.

Some CBOs have been able to develop approaches that enable them to sustain themselves, even without funds. In AFODE, they have been developed a (more) sustainable type of charcoal brickets consisting of banana husks, cassava flour and anthill soil. By selling these they are able to make a small profit, from which they can sustain themselves. Beside of just making the brickets themselves, they teach youth groups in producing them, so that they can take the innovation to their villages and produce themselves. Also they teach the youth to produce their own improved cook stoves, instead of just selling them. By doing this they promote a cleaner way of cooking and at the same time improve the livelihoods in communities (Masumbuko April 2014).

In Friends of Nature they are sorting plastic from garbage collected in the city, which they sell to a company in Kampala and thereby receive the money they need in order to sustain themselves, even without further funding. In this way they also improve the environmental conditions by creating business for the organization (Baluku April 2014).

In FURA they work with various societal issues and their approach origins from individuals, who generate the ideas. In FURA they are they state the importance of people working to achieve something and contribute to the community. Sustainability is not going to rely on government support or community support systems; it begins with the awareness of the

community. Hand-outs should be in terms of information and capacity-building, not in terms of items. And therefore FURA wants to encourage people to work (Mbauta 2014).

**Businesses**

The businesses in Kasese have a more economic approach to sustainability. Rose from Barefoot Power Uganda, states the importance of people to take it on as a business, so profit can keep the initiative running. She also explains that the product she promotes is environmental friendly, therefore she somehow agrees with the understanding of sustainability in current report. It is also important for them to create confidence in the product among the citizens; therefore they also have maintenance systems, which are run by a local technician. Barefoot thereby have a focus that somehow embrace all three dimensions of sustainable development, but as has been said, it is a business and therefore the approach tend to have an economical focus.

**Citizens**

The citizens of Kasese is important to include in the network, because it all comes down to the end user, who has to be satisfied and have confidence in a solution in order to purchase it. Therefore, involving the citizens is a crucial part of achieving success in the network. Citizens with whom we interacted were satisfied with the solution (Users of micro solar grid April 2014). Most can tell about the money they formerly were spending on kerosene, which they now are saving. Some also explains how the technology has contributed to improvement of their livelihoods. The citizens involved in the micro solar grid project in the village of Kajanya were all asked about their needs before implementation, which has improved the feeling of ownership among the citizens (Users of micro solar grid April 2014). The citizen participation-approach used by SystemTeknik will hopefully result in a better integration of the project, which will enable it to sustain in many years from now.

However, System Teknik is administrating the solar micro-grid, and the idea is that the citizens are paying monthly depending on their individual usage. They are not paying due to the amount of electricity they use but on the number and type of equipment connected. System Technic has educated a local technician as the daily operator and maintenance guy of the system, which means System Teknik does not have to be present in the village. Failures and measures are automatically reported to System Teknik through a computer system (Local technician 2014).

**Overall understanding of sustainability in the network**

It seems like the understanding of sustainability in Kasese fairly agrees with the understanding in current project. Each level of the network has different perceptions of what approach should be used to initiate sustainable development. Most were influenced by the social dimension and saw business-approach as best suited for reaching the community an approach. Although it is still arguable if activities carried out by the organisations are in line with our understanding of sustainability. Likewise it can be questioned if the awareness about sustainability is fully diffused in the community.

### 6.8 Outcome of Kasese Clean Energy Champion District Initiative

Since the launching of the in the initiative in June 2012 (Hårklau, Reinvang 2013), the network has contributed with outcome in terms of cook stoves and solar solutions. By 31st December 2013 14.700 cook stoves and 2849 solar systems has been sold through the CBOs and the suppliers (WWF Nordic, WWF Uganda 2014). Moreover, through a2i a micro solar-grid in Kayanja has been successfully implemented by Marts 2014 and the One Stop Shops (public toilets) is on the way. If the outcome is satisfying with regards to the resources spend is difficult to measure. However, some issues in the network were identified in the current analysis and must be improved, which will be discussed in the next chapter.

Another outcome of the networking, which is hard to measure, is the change of mind-sets. Through networking with international partners some members of the network seem to have change their way of looking at business and development. In other words, some members have learned the value of sharing and collaboration, even though it is not case with all members of the network. This will likewise be discussed in following chapter.

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# Solar micro-grid provides green energy in Kayanja village



# 7 Discussion

Current project have used the interorganizational model to analyse the network in Kasese. However, the investigation made it clear to us that the network did not support all elements from the interorganizational model. This chapter seeks to handle challenges found, divided in two different domains: The organizational sphere and the social/cultural sphere. The organizational sphere, including network means, is needed to make a functional. The social/cultural sphere is concerned about humans with their behaviour and mentality, which are very difficult to plan for because of the uniqueness of every human being.

However, in order make progress in the network the two spheres must be merged best possible, which can be related to the innovative approach given by (Berkhout, van der Duin 2006) where the "hard" and "soft" world should not be seen as separate but rather as two worlds supporting each other. Therefore, first part of the discussion will present some of the challenges experienced when investigating the network and divide them into the two spheres as shown in table 9. Lastly, it will be discussed how the two spheres can merge, in order to support implementation, and recommendations will be made on this basis.

**Table 9: Organizational and social/cultural challenges identified**

| Organizational challenges | Social and cultural challenges |
|---|---|
| Network governance | "African mentality" |
| Number of participants | Common goal consensus |
| Platform for knowledge and resource sharing | Competences |
| | Trust |
| | Social relations |

In the following section the elements within the organizational challenges are discussed. It will be described why these are seen as challenges and how they can be overcome.

## 7.1 Organizational challenges identified in Kasese Clean Energy Champion District Initiative

The organizational settings of the network in Kasese Clean Energy Champion District Initiative clearly differentiate from the characteristics in the interorganizational model as mentioned above. This was indicated in the analysis in the previous chapter and these aberrations and challenges will be summarized in this section.

**Network governance**

As described in the analysis, the Ugandan network in Kasese lack a governance form, as there seems to be confusion regarding the leading role of the network. However, according to (Provan, Kenis 2006) network governance is crucial to an interorganizational network. Formally, Kasese District Local Government is leading the network but in reality it is clear that WWF is handling most of the administrative tasks.

Based on the analysis and an understanding of networks it is recommended to implement a governance form in the Ugandan network of Kasese Clean Energy Champion District Initiative.

Due to the large number of stakeholders in the initiative it will be almost impossible to make a *participant-governed network* function in Kasese. This type of governance is as mentioned in the theoretical outset not convenient in a network including a large number of stakeholder, as it will be almost impossible to make a common agreement in Kasese due to several conflicting interests and if they have to decide equally.

*Lead-governance* is not seen as a convenient governance form to the Ugandan network either, because no buyer-supplier relationship exists. One participating member typically governs this type of network governance and the goal of the network is normally driven in the direction of the leading member. In the Ugandan network several actors with different individual goals exists, why this hieratical type of governance is not suitable for achieving the goals of the initiative.

A local-placed *NAO* is seen as the most suitable governance form for the Ugandan network in the initiative, and therefore it is recommended to have an independent administrative organization leading the Ugandan part of the network in the same way as a2i is leading the Danish part of the network. The head of the NAO must be a person with network related knowledge and with good administrative skills. As described it is difficult to integrate trust in NAO-governance and therefore it is crucial that this person is trusted by the local communities and have great local knowledge

I relation to the establishment of a NAO, the NAO should be in charge of development of a work plan for the network activities in order to achieve the common goal of the initiative.

**Number of network participants**

The network involves several different stakeholders. However, even though a number of 800 CBOs currently are working in Kasese only six are actively involved the initiative. This number is too low and it is recommended to include more partners on CBO-level. Especially, in a future scenario where a NAO is established to govern the network, it will allow a larger number of participants in the network. KADDE-net, who seeks to bring the CBOs together should be strengthened and supported with more means in order to provide a convenient platform for the CBOs to meet, share and support each other. KADDE-net will in a stronger position also be able to choose appropriate CBOs for the network and reduce potential “fake” CBOs.

What concerns the number of suppliers only three are involved in the Ugandan network of the initiative and then a few Danish companies, as a part of the a2i such as System Teknik and One Stop Shop. As mentioned in the analysis the low number of suppliers seems to be a limitation for the distribution of the innovations, because it limits the competition between suppliers, which may keep prices high. Furthermore, a larger number of suppliers will most

likely increase the range of available products and thereby appeal to more people with different financial basis. Moreover, local businesses must be invited to participate in the network as well, in order improve the basis of learning and transform some of the foreign product supply to be local in the future.

It is recommended for the future Ugandan network to make use of the quad helix model, which was explained in the theoretical outset. To do this cooperation, with Ugandan universities should be prioritized, as it is seen as a missing link in the current Ugandan network. Furthermore, collaboration between Ugandan and Danish Universities is recommended as it will expand areas of research within the BoP-paradigm and improve the Ugandan knowledge capacity.

To summarize, it is recommended to increase the number of actors in the network. The structure of the recommended network is illustrated in figure 9.

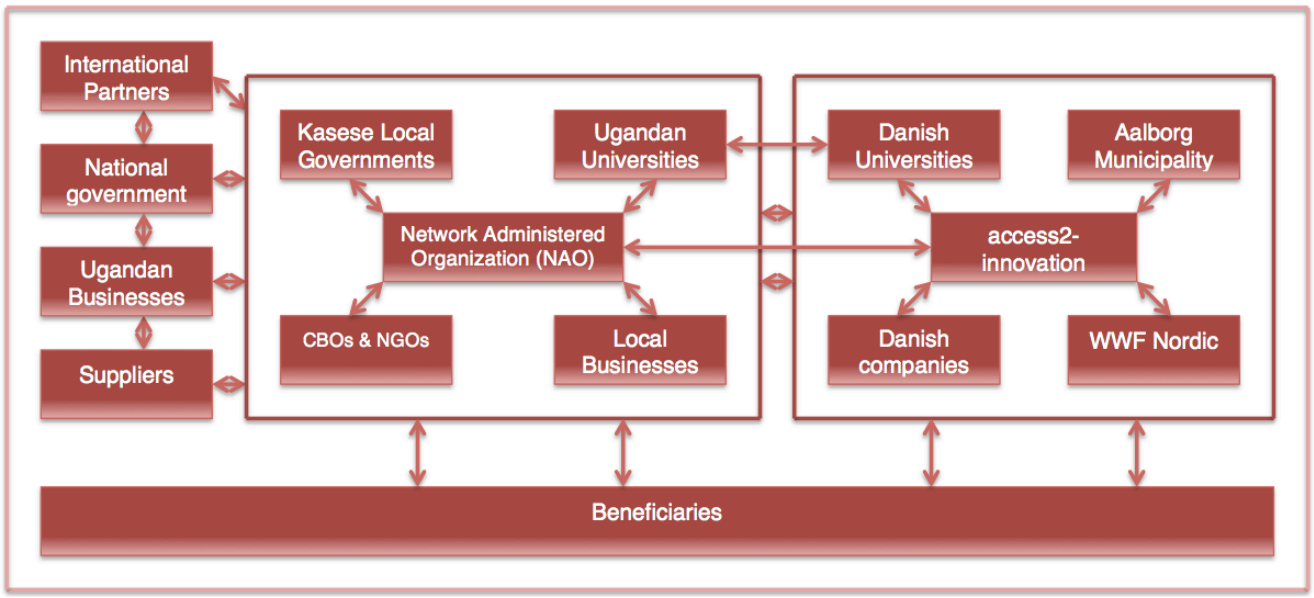


**Figure 9: Recommendation for network of the initiative. Own illustration.**

As also mentioned in previous chapter and (Hårklau, Reinvang 2013) the roles of the different actors in the network are a bit unclear. Therefore, this project recommends that the established NAO must clarify the different responsibilities throughout the network members. Furthermore, the National government must be included in network to a bigger extent than it happens today in order to support a future replication of the initiative.

**Platforms for sharing knowledge and resources**

In Kasese, there seems to be lack of a proper platform for sharing knowledge, experiences and resources etc. Even though an energy forum has been established to serve exactly this purpose it still not seem to be well functioning yet (Baluku April 2014). Whether this platform will serve its purpose is still unknown and the motivation among the network members to make it happen is limited. It is a general observation that the motivation and power to create development is slightly vague, which of cause also affect the development.

A proper platform for sharing is crucial for a functional network and therefore a recommendation is to establish such a platform. This platform should invite to regular open meetings for all participants in the networks and other interested people. The recommended NAO could be responsible for these meetings.

Evaluation and quality control of activities in the network must be prioritized in the initiative. This should count environmental impacts of innovations, to documentation of financial and administrative tasks in order to ensure credibility of network activities. In the following the social and cultural challenges will be discussed.

## 7.2 Social and cultural challenges identified in Kasese Clean Energy Champion District Initiative

Following section will summarize elements identified related to cultural and social issues. Lastly, this section will be discussing why it can be lucrative to create synergy between the two spheres.

**Cultural challenges in the network**

As we were talking about *trust* in the network of Kasese, The Mayor described the phenomenon of *"African mentality"* as a tendency where Africans keep information very close to themselves. This is frustrating when attempting to explain the benefits of sharing knowledge within the network of Kasese.

However, as has been experienced in Uganda, there seems to be a tendency of keeping information close to one self and share in general. This seems to be inherited close in the roots of the people in Uganda and is presumed to be difficult to change and thereby a limitation for the network in Kasese. However, during our interview with The Mayor he stated that learning from other cultures could change the "African mentality":

> *Those people you are interacting with are learning a lot. When you talk to them about education, about how you do things they get inspired, and that is what we want. And some people have made friends. And we are very thankful for that. And a friend can change your way of life - the way you look at things* (Kabbyanga April 2014)

This underlines the value of interacting with an open mind and learning from each other. The network approach of the initiative that includes partners form other cultures help change the "African mentality", which also support the suggestion of making a collaboration between Danish and Ugandan universities.

Another issue limiting the minds of the community is people's expectation of getting resources for free. A lot of the development aid is given for free as handouts, which have changed the mentality of the people. As Rose from Barefoot describes:

> *"We have this culture that we are used to: give, give, give, beg, beg, beg. It is something we learned when we were little. Whenever we see a white man, we put our hands out. And we are trying to change that syndrome, dependence of people"* (Kato April 2014)

Reuben from FURA describes something similar:

> *"We are not in a war zone, where we are needed to be giving hand outs. This is a working period, and people must work for what they want to have. The handout can be in terms of information, but not in terms of items. We want to encourage people to work. Because if you are not working you are not contributing"* (Mbauta 2014)

This mentality was recognized during our time in Uganda and is seen as a limitation for the initiative because the business approach, that forms the basis of the development, calls for people to be working to achieve the technologies being promoted.

However, it has come to our attention that some inhabitants simply cannot afford the technologies that are being promoted. This calls for innovative ideas, which can lower the prices of the technology and make it affordable. Another approach could be to create innovative business models could support this segment of the people as has also been described earlier.

**Social challenges in the network**

During analysis it was noted that a common *goal consensus* does not exist in the network. This is important in order to make the network most effective. By having a NAO, it will be easier to create a common understanding of the direction of the network. It has also been noted that participant members have various understandings of sustainability. It is recommended that the NAO should have competences in formulating a strategy including a common understanding of what sustainable development should be in the context of Kasese and how to achieve it.

In 2012 the Renewable Energy Strategy was formulated. However, the strategy have vital deficiencies in terms of gathering important baseline-knowledge and also missing guidelines on how to reach the goal for the strategy. As has also been mentioned by one of the interviewees, the strategy is not properly integrated in the planning process, but rather just serves as a piece of paper (Mutyaba April 2014). Therefore, comprehensive strategies and plans for the network activities must be developed. All development plans must include a common understanding of sustainable development to ensure a common understanding.

The NAO should have *competences* and skills to manage the network. But also participating members should obtain proper knowledge of how to act and collaborate in the network. The variety of competences is just as well important, knowing that one unit alone cannot achieve the goal. Competences should support each other and create synergy resulting in a network that becomes more than just the sum of actors.

It is important that people obtaining important positions in organizations are having appropriate attitude towards networking and are having a goal of contributing to society and not just into profit making. Kasese has seen examples of CBOs with family and friends on top positions, chosen only because of their *social relation* to the CEO and not because of their competences, which is not appropriate. It order to achieve sustainable development CEOs and people on top-positions must be motivated and have a clear understanding of sustainability, otherwise it will fail. The Mayor is a good example of a social entrepreneur working hard for the initiative and also to serve his community. People with this type of mentality are recommended to obtain all top positions in organizations involved in the initiative.

When obtaining the competences of how to act in a network in order to create synergy, participating members should as well be open to share information, knowledge and resources for supporting the greater good. With openness and transparency comes trust, as the Mayor explains. Cultural challenges mentioned above could be a hindrance to this. But in time the network may evolve and as participating members start to interact on a higher level, the knowledge will increase and the trust in other members will be strengthened.

Currently, the professional relationship between members is weakened because of lack of trust and members accusing others for misusing funds and corruption. This is experienced to have origins in competition with other network members and not knowing about their activities. The project recommends more interaction between members, so that CEOs get to know each other and a deeper understanding of the others businesses. This will create trust, and together with the recommended improvements to the organizational sphere, it will create a platform for more interaction and increase the learning perspective, which will increase the overall collaboration in the network and an increased level of innovation in the network.

**Creating synergy between the organizational and social/cultural spheres**
Regarding the organizational challenges it is easier to make recommendations to how these can be reduced through planning. What is more difficult is involving the social aspect of the facilitation. Many elements in the analysis are depending on trust among members, but how to achieve this is not necessarily given on beforehand and is hard to achieve through an organizational approach. Therefore, continous learning must happen throughout the network progress in order to create interaction between the organization and social/cultural spheres and in order to reduce social and cultural challenges and make the two sheres interact.

Figure 10 illustrates identified elements from the organizational and social/cultural sphere and the continuous interaction that must happen between.

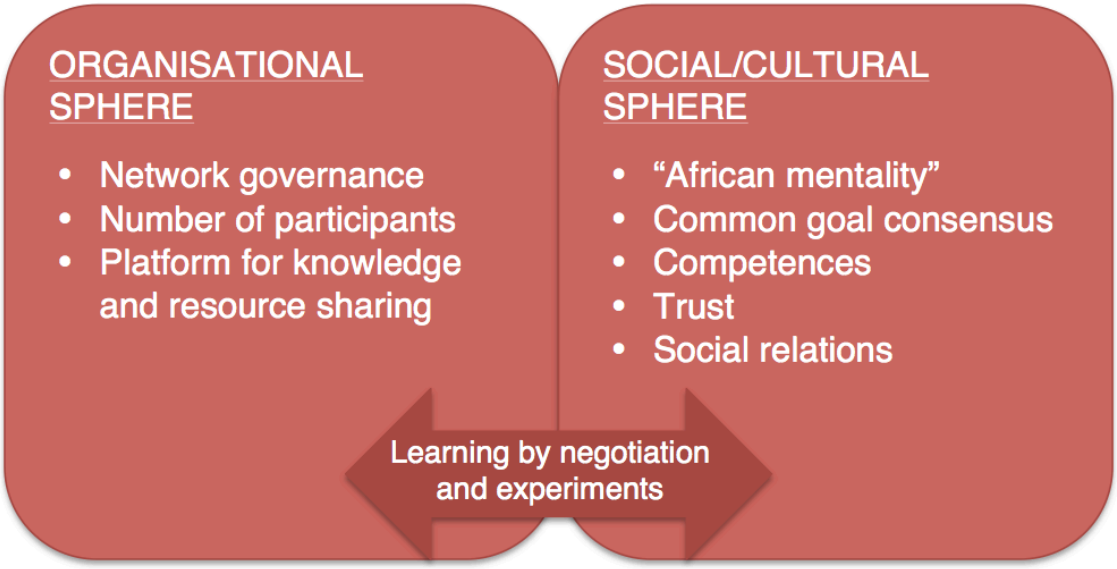


**Figure 10: Negotiation and experimentation with elements identified in the organizational and social/cultural sphere, which allows one to learn along the way. Own illustration.**

What is crucial for making a success is also to gather appropriate people in the network. Systems make it possible, but people make it happen, which means the human characteristics, such as cultural and behavioural values, are important. The people in the networks should have proper knowledge, collaboration competences, a reasonable attitude towards networking and trust in one another, in order to create interaction between the two spheres. The arrow in the illustration represents a leaning-process, which indicates the dynamic processes occurring when the two spheres interact. This perspective will be transferred into the illustration in following section. The arrow indicates a learning perspective, proving that over time the two domains can support each other and grow stronger and ultimately create a synergy in order to smooth the way for implemention of solutions.

### 7.3 Smoothing the way towards development in Kasese

The previous section summarizes the importance of combining the organizational- and the social/cultural sphere. It is argued that combining the two spheres can create synergy and lead to innovations. However, if there is lack of goal consensus like in Kasese, and there is lack of knowledge about the means of how to achieve the desired goal, the planning process can get complicated and chaotic, why negotiations are needed. Figure 11 seeks to combine the challenges from figure 10 and show a diagram of four situations of the networking process depending on uncertainty of the network means and the harmony within the social sphere.

| SOCIAL SPHERE / MEANS | CONSENSUS | CONFLICTS |
|---|---|---|
| MODERATE UNCERTAINTY | PROGRAMMING | NEGOTIATIONS |
| HIGH UNCERTAINTY | EXPERIMENTS | CHAOS/MUDDLING THROUGH |

**Figure 11: Situations within the network process depending on the uncertainty of the means and the harmony within the social sphere. Inspired by (Christensen 1985). Own illustration.**

As mentioned, above the organizational set-up for the network in the initiative has some challenges. If there is uncertainty about network means, the planner can end up in an experimentation process to find the right solution, given that some consensus exist in the social sphere. However, if there are challenges in the social sphere as well, the process ends up in chaos.

If the right organizational set-up is in place and consensus exist in the social sphere, the implementation of activities can be carried out smoothly. However, if there are challenges in the social sphere, the process ends up in a negotiation towards a common consensus instead of action.

In Kasese the CBOs are aware that collaborating and sharing information and experiences can improve their own and the other members businesses. But at some point they fail to agree on terms for sharing information, which can be due to lack of a common goal consensus, or maybe because they have not got the means for sharing in terms of a proper platform. In Kasese they are struggling with the mentioned challenges in the social sphere. Working towards a common goal consensus and the proper means for achieving the goal therefore call for experimenting and negotiations. From these processes learning will happen and knowledge will be obtained on how to merge the two spheres.

However, in this case the “deal” goal is called *“programming”,* which sounds like a rational process. This can be slightly misleading because the context in which the project is sought implemented is always dynamic and in motion, transforming all the time. So even if the participants have reached a common understanding of what should be done and how, the situation might change shortly after and there will be a new need for negotiating and experimenting.

However, in Kasese they are still in the learning-phase of switching position between negotiations and experimenting, which must be seen as an important part of the innovation process. Learning is essential to reach the situation of *programming*, as this only can be reached in synergy between of the two spheres. People in different networks will always differ in mentality, skills and motivation, why the merging of the two spheres only can happen by learning, as there is no such thing as a complete "recipe" for this because it depends on the context.

It is easy to fail if ignoring the importance of the learning phase. If the implementation is carried out before reaching the situation of programming, consequences might be a situation of chaos and the need to start from the beginning. As discussed in (Christensen 1985), *premature programming* can have unintended and harmful consequences for achieving the goal. If premature programming happens in Kasese and a technology to support the initiative is chosen, without making proper research on possibilities the project can end up failing. Consequently, the solution might fail to be proper implemented, which can have negative economic, social and environmental consequences and network process is forced to a situation of negotiations or experimentations.

### 7.4 Creating innovation in Kasese

When having a fully functional network consisting of people with appropriate competences, it has the ability of creating innovative solutions, because innovation happens between boundaries of mind-sets and thereby in the interaction between organisations (Leonard 1995).

This research demonstrates that a linear innovation approach presented by (Tidd, Bessant & Pavitt 2005) cannot alone be seen as a way of understanding innovation in Kasese. Because innovation is happening *between* mind-sets and not within just one, the interactions are the key for learning and thereby innovation.

The dynamic innovation approach presented by (Berkhout, van der Duin 2006) is closer to reality and our approach to innovation, after experiencing the case of Kasese and working within network. The social/cultural approach representing the "soft world" needs to be combined with the "hard world" organizational issues in order to make suitable partnerships. It is crucial for collaboration that participating actors are getting along with each other, both on a professional but also on a social bases. Interactions are thereby a keyword in achieving a closer collaboration and improved effectiveness of networks in Kasese.

Creating a properly functional network with extensive collaboration is an appropriate way of penetrating the BoP-market. The quad-helix model used by a2i so far seem to be a suitable model for creating innovations, as it has suited the conditions and needs in Kasese. This may lead to improvement of livelihoods in communities in Kasese, as well as economic profit for the companies who provide the technologies and services. However, the approach is still new and developing, why is difficult to measure the grade of success yet.

### 7.5 Creating sustainable innovations for base of the economic pyramid

As previously described, we argue that creating a fully functional network containing qualified people with appropriate attitudes can form a basis for creating innovative solutions and an appropriate way for approaching the BoP-market in Kasese. However, this research has raised a question of how networks can lead to *sustainable* innovative solutions.

Some solutions implemented in Kasese are improving livelihoods in communities by improving their economical situation. However, a focus seems to be lacking on the environmental part of the solutions being implemented. The solar technology might be more sustainable than the kerosene lamps. However, after investigating a variety of technologies being promoted, there is surely a difference in product quality, in terms of light, brightness and lifetime durability. The battery placed in the cheapest micro solar has a lifetime of one year before it needs replacement, while a lamp lasting for five year costs twice as much. Obviously, in a context like Kasese, the cheapest lamp is also best selling, and seen from an environmental perspective this is not expedient.

It is therefore recommended to raise awareness of communities and give them a chance for choosing between high quality and moderate quality products. Having stricter environmental requirements of products, either on a national or local level, may solve these challenge of illuminating the bad quality products.

Raising awareness of citizens and especially participating members of the network can increase overall level of sustainability. As has been mentioned, one unit alone cannot achieve sustainability, but in networks it becomes possible. This project has included the "System builder"-approach, which explains how networks can contribute to sustainable development (NBS, Network for Business Sustainability 2012). Figure 12 seeks to explain how the socio-technical sphere needs to collaborate with a systematic networking approach.

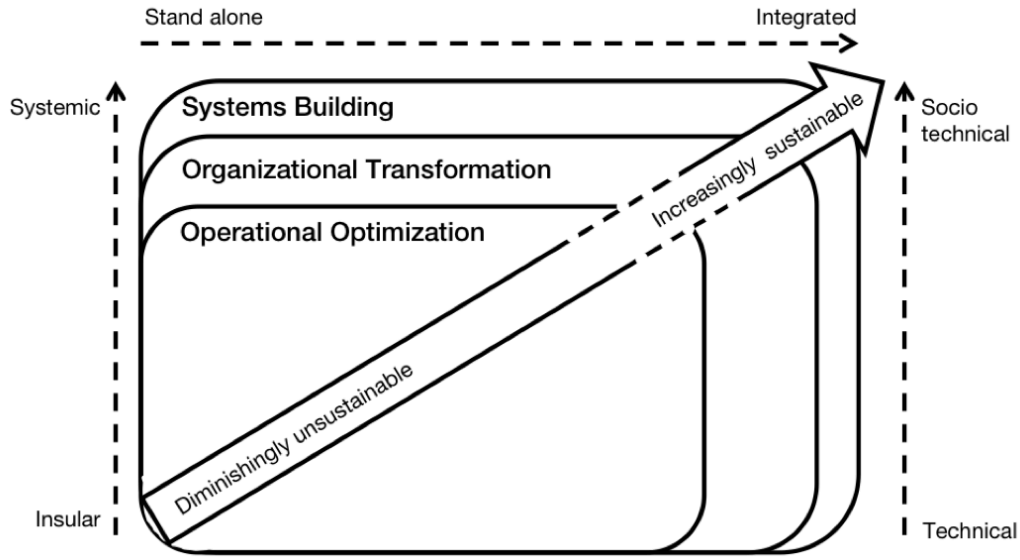


**Figure 12: Level of sustainability depending on level of technical and social sphere with involvement of networking (NBS, Network for Business Sustainability 2012).**

Figure 12 illustrates an increase in level of sustainability as the understanding gets integrated in the very roots of organisations involved. If an organisation stands alone it is impossible to achieve sustainability. Furthermore, social and technical spheres needs to be combined, which is here presented as the socio-technical dimension, which underline that sustainable innovation is more than technical innovations as stated in the theoretical outset.

Networks with extensive collaboration are an appropriate way of creating innovative solutions used in penetration of BoP-markets, because innovation happens in between mind-sets, and networks is therefore a proper way of creating this interaction. However, if the innovative solutions are also to be sustainable, there is a need for integration of sustainable mentality within mind-sets of people in the network.

As explained in the introduction this project focus at the possibilities for taking the “green leap” and not just implement solutions for serving the poor, while making profit. By taking the “green leap” the environmental dimension of sustainability is somehow integrated in the solution, as these must be green technologies.

It can be questioned though if the technologies launched in the initiative all can be seen as sustainable technologies. For example is the improved cook-stove still using organic fuels and may be seen a stepping-stone towards more sustainable solutions. However, bio-charcoal may solve impacts of solid waste and deforestation but it is still causing health risks due to smoke and particle pollution in the households. Nonetheless, the technology’s potential must not be undermined as in can benefit in term of improved livelihoods for people in Kasese. However, to make an innovation sustainable all three dimensions of sustainability must be included. Even though, the improved cook-stove is more appropriate than the existing three-stone-method, the lack of consideration of health risks makes it an diminishingly unsustainable, incremental innovation based on figure 12. Moreover, the phase of “programming” might have been started too fast, as other solutions possibly could consider more aspects of sustainability, while creating development. For example a collective solution with modern shared cooking equipment could be established.

Looking at System Teknik’s implementation of a solar micro-grid in Kayanja in comparison, this solution was implemented through an innovation process based on a2i’s quad helix collaboration as earlier mentioned. We evaluate this solution as a part of the “organizational transformation” phase in figure 12. This solution is also seen as a “next level” of solar lamps provided through the Ugandan network. We see the solar micro-grid as an example of well-implemented “green leap” solution, which prove the effectiveness of the network-approach recommended for the Ugandan part of the network. Hopefully, the network in Kasese will develop through the learning phase and will be able to implement solution as innovative as the solar micro-grid in the future.

### 7.6 Taking the network to another context

As mentioned, WWFs goal of the Champion District Partnership Initiative is to create a replicable model, which can support access to clean energy for the rural poor in Uganda, and ultimately beyond Uganda. In order to make the initiative replicable there is a need for identifying elements from networking that have been successful and are possible to replicate.

Our current project has shown that organizational elements from the interorganizational network model can be used for diffusion into other locations. Creating a set-up of appropriate range of stakeholders agreeing on partnerships might be possible, but assuring good collaboration between participants in the network and having them working towards a common desirable outcome might be difficult. Current project recommends combining the organizational elements from the "hard world" with social and cultural settings from the "soft world". This is important because the socio-cultural set-up differs and is depending on context.

### 7.7 Why does it work in Kasese?

In Uganda 56 different tribes exists, each with different languages and culture (My Uganda 2014). So, expecting to gain the same outcome in another village, while using the same approach, might end up in failure**.** Based on the location and context, there will always be a need for either negotiations or experimenting before a project can be "programmed" smoothly, which is also explained in figure 11.

As explained in this report, The Mayor and his team is an important driver of the initiative. However, what is also driving The Mayor and the citizens in Kasese is culture. Kasese is placed in the rift valley of Mount Rwenzori. The name means "The Mountains with Snow", because the snow is kept are kept all year. People in Kasese are known as The Rwenzurus, which means "The people who comes from the mountains of snow". But, during the past years the snow on top of the mountains have been melting, reducing from six peaks with snow, to now only three (Mguru April 2014). This is vital for the tribe, because people of Kasese are risking loose their identity, if the snow disappears. This has made the King of Rwenzurus taking action promoting clean energy and energy efficiency as a way to save the snow kept mountains.

The King of the Rwenzurus may be the most respected person in the kingdom and are therefore decisive to have on board supporting clean energy. However, special occasions and coincidences can also show to have an impact on the project. When first approaching the market of solar panels, The Mayor told that the community of Kasese has lost all confidence in the technology, because the solar panel given to The King of the tribe, suddenly collapsed. In this case the project needs to be redefined in the community, by negotiation and experimenting to gain a proper quality product and a social acceptance in the community.

When investigating the solar micro grid in Kayanja, we interacted with citizens and also the technician running the system. Repeatedly we asked the technician about his background,

hoping to find out his educational background and technical knowledge, but every time he replied by saying: *"I was born here".* At first the group pondered on the answer, but later it was realized that his answer was based on his perception of what was important about his background: His native background. This proves the importance of having an integrated native person on important positions.

Formal agreements can force companies to share information, items, experiences etc., but in order to have a successful relationship a certain level of trust among the members must exist. This is often not only based on formal relationship, but also social relationships, built on prolonged interactions, strengthening bonds between the members.

Creating partnership with Aalborg and Frederikshavn Municipality councils through the Memorandum of Understanding (MoU) is presumed to have had an effect on the level of trust in the networking between involved parties, just as well as inviting the Mayor and the Deputy Town Clerk to Aalborg, showing them how we in Northern Denmark are coping with environmental issues. This clearly made an impression on the Mayor and his team, which gained a lot of new insights during his stay and which will hopefully inspire them further.

Having Danish students in Kasese doing research has clearly made an impression on the citizens, who have been convinced that "The Danes" really wants to do good and support the city in its development and is not just "white people" doing business in Uganda and exploiting the people. Far too many times the Kasesians have experienced "white men with briefcases", as they describe them, coming to Kasese to sell products or services, that collapses shortly after their departure. So creating trust is certainly a vital issue, but not easy to obtain.

# 8 Recommendations

Based on current research and experiences in Kasese we wish to present following recommendations for the further development of networks operating in Kasese and other BoP-contexts.

- It is recommended to create an appropriate organizational network set-up based on the interorganizational model. We advise to choose the NAO-governance form, lead by a locally integrated and accepted person with network-related knowledge and skills, who has willingness and ability to influence the community in a positive way.
- The NAO should carefully selected an appropriate number of actors, who should be social entrepreneurs willing to work hard to achieve the common goal for the community. The number of suppliers in the network must be increased as well and offer a wide range of quality products.
- A proper platform for sharing knowledge and resources is crucial and must be available for the participants. The NAO should be responsible for meetings and a common goal must be developed through negotiations.
- It is advised to include local businesses and universities in the network in order to create sustainable and innovative solutions based on the quad helix model.
- “African mentality” was found as a cultural limitation for the functionality of the network. Learning and collaborating with other cultures in activities of business and informal matter can reduce this tendency.
- Trust is central for good collaboration and motivation for participating organisations in the network. Therefore, openness and transparency through sharing, documentation and quality control is key for activities carried out in the network.
- Trust can as well be strengthened between members and to the network in general by social interaction. Also social relations or prolonged social relationships with mutual positive experiences of one another’s action can increase the level of trust between members. Therefore, the organizational set-up must supply possibilities for interaction between members.
- Learning must be seen as an obligatory part of the innovation process, which allows negotiations and experiments. It is recommended to learn before “programming” in order to ensure the best possible solution is implemented.
- The three dimensions of sustainability must be considered for all innovations and integrated into the roots of the network.
- Awareness raising and education of both network members and citizens must be a priority.
- Strategies and plans with milestones must be developed for networks activities and goals.
- Functional networks are depending on the context and people in it. Therefore, it is crucial to make comprehensive, continuously research on the organizational- and the social/cultural spheres of a network, because characteristics differ according to the context and is depended on the people involved in the network. However, most of the

merger of the organizational- and social/cultural spheres can only happen through a learning process because of the differences in the social/cultural sphere.

# 9 Conclusion

This project concerned the network operating in Kasese Clean Energy Champion District Initiative, which was analysed, using data collected in Uganda, in order to make recommendations on how this can be improved. The results of the research attempts to contribute with knowledge to the absence of a useful strategy on the use of networking within the BoP-literature. In current chapter we wish to present this knowledge by answering the research question used to investigate the subject:

> ***How can the interorganizational network model be used to analyse and optimize the network operating in Kasese Clean Energy Champion District Initiative in order to create innovative solutions supporting sustainable development in Kasese District?***

Following sub-questions were used to answer the main research question:

> *How can elements shown in the analytical framework be identified and analysed in the network of Kasese Clean Energy Champion District Initiative?*

In order to analyse the network operating in Kasese an analytical framework was constructed based on the interorganizational network model. This model includes properties concerning *network organization, network effectiveness and network facilitation*. Elements within these properties were identified through semi-structured interviews and observations in Kasese. The elements identified were further analysed by combining theory and gathered empery to gain comprehensive understanding of functionality of the network. In this process some organizational, social and cultural challenges appeared.

The organizational challenges included: lack of a governance form and confusion about roles, which have had an affect of the functionality of the network. Furthermore, the numbers of participants were found to be to low as only six CBOs are included in the initiative and only three suppliers. Even though an energy forum for sharing of knowledge or resources is in place, it seems like it only exist in words.

The social and cultural challenges included: organisations are not willing to share knowledge, business experiences and other resources but are keeping it close to themselves to avoid losing business. This tendency is known as “The African Mentality”, which has origins in lack of trust to the other partners. Trust and lack of a common goal consensus have created a competition between involved partners, which results in a slower implementation process. Moreover, it found that the network is missing some competences in term of local universities and business.

> *How can the problems and challenges identified in the analysis be reduced? And what additional factors have been found to affect the network?*

The problems and challenges identified were divided into two spheres: the organization- and the social/cultural sphere. An organizational set-up, based on the interorganizational model, must be created in order have appropriate premises for a functional network. In the social/cultural sphere, social relations must be strengthened and trust between network members must be build. By simultaneously supporting the two spheres and through continuous negotiations and experimentation a learning process can lead to proper implementations of solutions.

Additional factors found to be important: The implementation process is dependent on the context. Local settings, culture and people involved in the network differ for every single location. Because these conditions cannot be predicted on beforehand a research is necessary before implementation of a network.

> *Which recommendation can be made to improve the network and make a replicable model that can be used support innovation and sustainable development in the base of the economic pyramid?*

It is recommended to create an appropriate organizational network set-up based on the interorganizational model. We advise to choose a NAO-governance form, lead by a locally integrated and accepted person with network-related knowledge and skills, who has willingness and ability to influence the community in a positive way. Strategies and plans including a common goal must be developed for carrying out networks activities. The NAO is responsible for gathering carefully selected actors including a sufficient amount of suppliers offering quality products, who can support the goal. A proper platform for knowledge- and resource sharing is crucial and must be available for network members. It is advised to include local businesses and universities to bring in sufficient competences and follow the quad-helix model.

Learning in collaboration with other cultures through activities, of business and informal matter, is recommended in order to limit the tendency of “African mentality”. Openness and transparency through sharing, documentation and quality control is key to build up trust in the network. Trust can as well be strengthened between members and to the network in general by social interaction. Therefore, the organizational set-up must supply possibilities for interaction between members.

It is recommended to learn before “programming” in order to ensure the best possible solution is implemented. It is also recommended to consider all the three dimensions of sustainability for all innovations and integrate the understanding into the roots of the network and its members. In relation to this awareness raising and education of both network members and citizens must be a priority.

It is recommended to make comprehensive, continuously research on the network context, as it is depending on people involved, local settings and culture. However, synergy between the organizational- and social/cultural spheres is most likely to happen through a learning process where the two spheres interact.

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